2004 TRIENNIAL REVISION OF THE REGIONAL AIR QUALITY STRATEGY FOR SAN DIEGO COUNTY

July 28, 2004

SAN DIEGO COUNTY
AIR POLLUTION CONTROL DISTRICT
9150 Chesapeake Drive
San Diego, CA 92123-1096

2004 Triennial Revision of the Regional Air Quality Strategy for San Diego County

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BACKGROUND

The California Clean Air Act (CCAA) requires areas that have not attained State ambient air quality standards for ozone, carbon monoxide, sulfur dioxide, or nitrogen dioxide to prepare plans to attain the standards by the earliest practicable date.[1] Each of these standards has been attained in San Diego County, with the exception of ozone. San Diego County has been designated by the California Air Resources Board (ARB) as nonattainment of the State ambient air quality standard for ozone.[2] Accordingly, the San Diego Regional Air Quality Strategy (RAQS) was developed pursuant to CCAA requirements and identifies feasible emission control measures to provide expeditious progress in San Diego County toward attaining the State ozone standard. The pollutants addressed are volatile organic compounds (VOC) and oxides of nitrogen (NOx), precursors to the photochemical formation of ozone (the primary component of smog). At harmful levels, ozone impacts lung function by irritating and damaging the respiratory system. Ozone is also harmful to crops and vegetation and can damage rubber, plastic, and other materials.

The San Diego County Air Pollution Control District (District) is responsible for the overall development and implementation of the RAQS. The RAQS control measures focus on emission sources under the District's authority, specifically stationary emission sources[3] and some area-wide sources[4]. However, the emission inventories and emission projections in the RAQS reflect the impact of all emission sources and all control measures, including those under the jurisdiction of the ARB (e.g., on-road motor vehicles, off-road vehicles and equipment, and consumer products) and the U. S. Environmental Protection Agency (EPA) (e.g., aircraft, ships, trains, and pre-empted off-road equipment). Thus, while legal authority to control different pollution sources is separated, the District is responsible for reflecting federal, state, and local measures in a single plan to achieve ambient air quality standards in San Diego County. Achieving ambient air quality standards requires a cooperative partnership of governmental agencies at the federal, state, and local levels.

The CCAA requires an air quality strategy to achieve a 5% average annual ozone precursor emission reduction when implemented or, if that is not achievable, an expeditious schedule for adopting every feasible emission control measure under air district purview (California Health and Safety Code (H&SC) Section 40914).[5] This 2004 RAQS Revision reflects expeditiously

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[1] California Health & Safety Code Section 40911(a). State law does not require attainment plans for State particulate matter standards.

[2] The State ozone standard is nine parts per hundred million (pphm) averaged over one hour. The standard is attained when each monitor in the region has no exceedances during the previous three calendar years, except for exceedances affected by highly irregular or infrequent events (as defined in Appendix 2 to California Code of Regulations, sections 70300-70306).

[3] Examples of stationary sources include power plants, manufacturing and industrial facilities, stationary internal combustion engines, gas stations, landfills, and solvent cleaning and surface coating operations.

[4] Area-wide emission sources are individually small and spread over a wide area. They are mostly residential sources, including water heaters, furnaces, architectural coatings, and consumer products.

[5] The term "feasible" is not specifically defined in the CCAA. However, the statutory criteria for assessing a potential control measure include cost-effectiveness, technological feasibility, total emission reduction potential, the rate of emission reduction, public acceptability, and enforceability (H&SC 40922(a)).

adopting feasible control measures, since neither San Diego nor any air district in the State has demonstrated sustained 5% average annual ozone precursor reductions.

State law also requires annual and triennial progress reports regarding implementation of control measures, and triennial plan revisions, as necessary, to reflect and respond to changing circumstances (H&SC Sections 40924 and 40925). A district may revise an emission reduction strategy if the district demonstrates to ARB, and the ARB finds, that the modified strategy is at least as effective in improving air quality as the strategy being replaced (H&SC §40925(b)).

The RAQS was initially adopted by the San Diego County Air Pollution Control Board on June 30, 1992, and amended on March 2, 1993, in response to ARB comments. The District Board further updated the RAQS with triennial revisions on December 12, 1995; June 17, 1998; and August 8, 2001.

STATUTORY REQUIREMENTS

This 2004 Triennial Revision of the RAQS was prepared pursuant to ARB guidance and complies with all of the following applicable progress report and plan revision requirements of the CCAA:

- Assess the extent of ozone air quality improvement achieved during the preceding three years (H&SC §40924(b)(1));

- Compare estimated rates of total countywide emission reductions over the preceding three years to the rates anticipated in the RAQS for that same period, and incorporate updated projections of population, industry, and vehicle-related emissions growth (H&SC §40925(a));

- Identify the proposed and actual dates for adopting and implementing each District control measure (H&SC §40924(a)), and compare the expected emission reductions for each control measure to a newly revised estimate (H&SC §40924(b)(2));

- Include an updated schedule for expeditiously adopting every feasible control measure for emission sources under District purview (H&SC §40914(b)(2));

- Include an assessment of the cost-effectiveness of available and proposed control measures and contain a list which ranks the control measures from the least cost-effective to the most cost-effective (H&SC §40922(a)); and

- Determine whether a State-mandated, no-net-increase permitting program (i.e., State emission offset requirements) is necessary to achieve and maintain the State ozone standard by the earliest practicable date (H&SC §40918.6).

Additionally, pursuant to the most recent ARB guidance ("2003 Triennial Assessment and Plan Revisions"), this 2004 Triennial RAQS Revision includes a section summarizing existing financial incentive programs for reducing emissions.

OZONE AIR QUALITY TRENDS

State law (H&SC Section 40924(b)(1)) requires a triennial assessment of ozone air quality improvement achieved during the preceding three years, based on ambient pollutant measurements and air quality indicators (statistically derived values based on monitored air quality data). Accurate, real-time measurements of ambient air pollution, including ozone, are collected throughout the region at numerous sites to identify the status and trend of ambient air quality in San Diego County. Despite continued growth in population and motor vehicle usage, San Diego County has experienced substantial improvement in air quality over the past two decades as a result of emission control efforts.

A major air quality milestone was achieved in 2001 when the region attained the federal one-hour ozone standard.[1] In 2002, air quality continued to improve, with no exceedances of the federal one-hour ozone standard for the third recent year, and the fewest exceedances on record of the more-stringent ozone standards—the federal eight-hour standard[2] (13 exceedances) and State ozone standard (15 exceedances). In 2003, the federal one-hour standard was exceeded once (which did not affect attainment status), while there were six exceedances of the federal eight-hour standard—less than half as many as the previous record-low, in 2002—and 23 exceedances of the State ozone standard.

The historic ozone air quality trend is presented in Table 1, which identifies the number of days state and federal ozone standards were exceeded between 1977 (the earliest year with comparable data) and 2003. The State ozone standard was exceeded on 168 days in 1977, improving to 23 days over standard in 2003 (an 86% improvement). Over the same 26-year period (1977-2003), the region's population grew 70% (from 1.7 million to 3 million) and daily motor vehicle mileage more than doubled (from 34 million to 81 million miles).

This air quality improvement despite regional growth clearly shows emission control measures are working. Nevertheless, continued emission reduction efforts are needed in order to attain the more stringent ozone standards. Further, continued expansion of motor vehicle usage and population and industrial growth will continue creating challenges in controlling emissions to improve air quality.[3]

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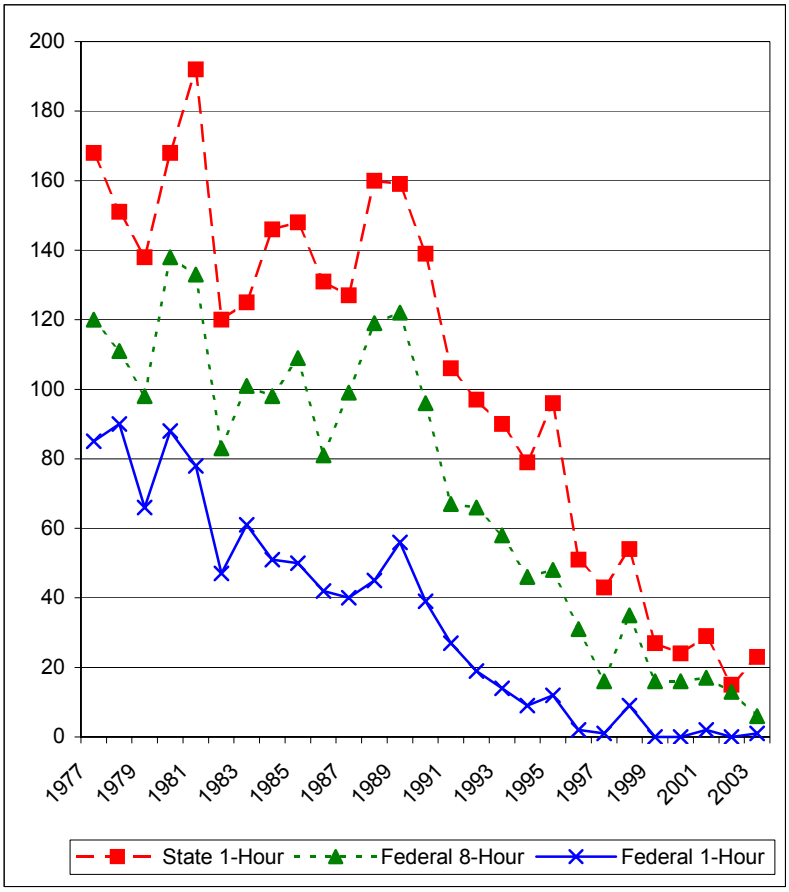
[1] The federal one-hour ozone standard is 12 pphm averaged over one hour. The standard is attained when each monitor in the region has no more than three exceedances over a three-year period. EPA redesignated San Diego County to an Attainment area for this standard, effective July 28, 2003.

[2] The federal eight-hour ozone standard is 8 pphm. The standard is attained when the 3-year average of the annual 4th-highest daily maximum eight-hour average ozone concentration at each monitor in the region is less than or equal to 8 pphm.

[3] Between 2000 and 2030, countywide population is projected to increase 33% (from 3 million to 4 million) and employment 36% (from 1.4 million to 1.9 million) while vehicle miles traveled is projected to increase 66% (from 73 million to 121 million), according to the "2030 Regional Transportation Plan" (April 2003, San Diego Association of Governments).

Table 1 and Figure 1
Days Exceeding Air Quality Standards for Ozone
San Diego County, 1977-2003

	State	Federal	
Year	1-Hour	8-Hour	1-Hour
2003	23	6	1
2002	15	13	0
2001	29	17	2
2000	24	16	0
1999	27	16	0
1998	54	35	9
1997	43	16	1
1996	51	31	2
1995	96	48	12
1994	79	46	9
1993	90	58	14
1992	97	66	19
1991	106	67	27
1990	139	96	39
1989	159	122	56
1988	160	119	45
1987	127	99	40
1986	131	81	42
1985	148	109	50
1984	146	98	51
1983	125	101	61
1982	120	83	47
1981	192	133	78
1980	168	138	88
1979	138	98	66
1978	151	111	90
1977	168	120	85



AIR QUALITY INDICATORS

Three statistical indicators are used to assess air quality improvement for ozone based on the monitored air quality data. These are: (1) population-weighted ozone exposure, (2) area-weighted ozone exposure, and (3) the Expected Peak Day Concentration (EPDC). ARB computed each indictor for San Diego County based on monitored air quality data, illustrating changes from a three-year base period (1986-1988) to a three-year end period (2000-2002). The indicators are averaged over three years to reduce the variable influence of year-to-year meteorology changes and thus to better represent trends.

EXPOSURE INDICATORS

Population-weighted ozone exposure reflects the potential average outdoor exposure per person to concentrations above the State ozone standard.[1] It is reported in terms of parts per million–hours (ppm-hours) for each year. Population-weighted ozone exposure is a good indicator of the extent and severity of the ozone problem for human health because it indicates whether relatively few people or many people are being exposed to unhealthful ozone levels, and for how long.

Area-weighted ozone exposure is similar except that it indicates whether relatively small areas of the region or large areas of the region are being exposed. The area-weighted exposure is intended to estimate the exposure of crops and vegetation to the damaging effects of ozone.

Population-weighted and area-weighted ozone exposure indicators are presented in Table 2. The analysis demonstrates that both population and area-weighted exposure to unhealthy ozone levels have been reduced by 98% between 1986-1988 and 2000-2002, indicating substantial improvement resulting from effective emission control measures.

Table 2
Ozone Exposure Indicators

Type of Exposure	Base Period 1986-1988	End Period 2000-2002	Difference (Base-End)	Percent Reduction
Population-weighted (ppm-hours)	1.090	0.027	1.063	98%
Area-weighted (ppm-hours)	3.997	0.075	3.922	98%

The trends in annual and three-year rolling averages of the population-weighted and area-weighted ozone exposure indicators are presented in Figures 2 and 3, respectively. After a brief period of increase in the late 1980s, indicating the need for additional emission reductions, exposure was rapidly reduced in the early 1990s with the implementation of many new District stationary-source and area-source rules and State requirements for low-emission vehicles and

[1] The term "potential" is used because daily activity affects an individual's exposure. For example, being indoors during peak ozone concentrations will decrease a person's exposure to outdoor ozone concentrations.

cleaner-burning gasoline. Since 1996, as ozone levels have approached the State standard, improvement has continued more gradually.

Figure 2

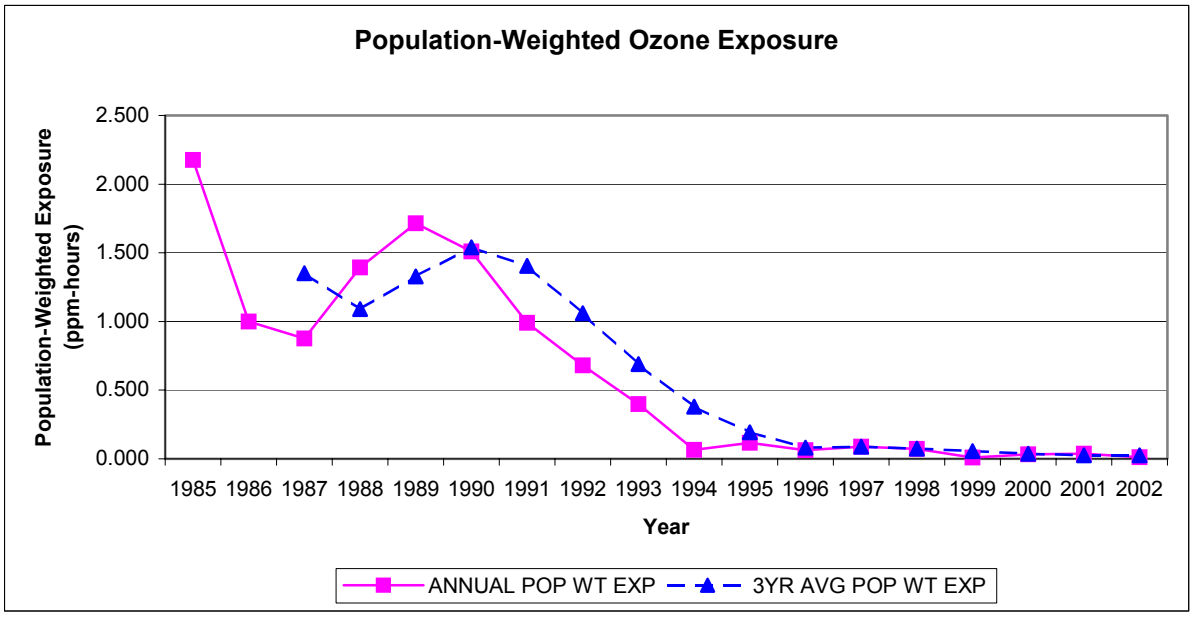
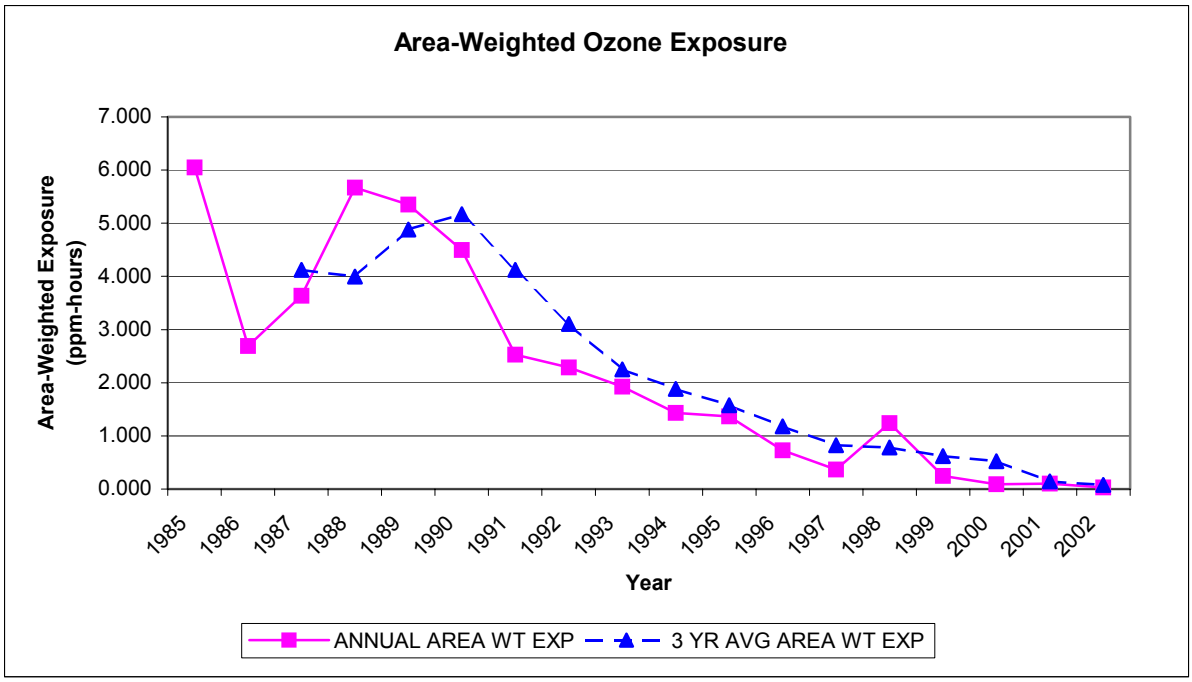


Figure 3



EXPECTED PEAK DAY CONCENTRATION (EPDC)

The EPDC tracks progress in reducing daily maximum one-hour ozone concentrations at each monitoring site. This indicator represents the potential worst-case for a one-hour exposure to ozone and acute adverse health impacts. However, the EPDC differs from the exposure indicators because it does not reflect whether relatively few people or many people are being exposed.

Progress in reducing the EPDC is displayed in Table 3 for the six monitoring sites in San Diego County that have been operating since the 1986-1988 base period. Three other sites that began operation after the base period and one site that has been discontinued are not included in this long-term trend analysis.

Table 3
Expected Peak Day Concentration of Ozone
(parts per hundred million, or pphm)

Site	Base Period 86-88	End Period 00-02	Difference (Base-End)	Percent Reduction
Alpine - Victoria Drive	16.7	11.7	5.0	30%
San Diego - Overland Avenue	15.5	11.0	4.5	29%
Escondido - East Valley Parkway	14.5	10.5	4.0	27%
El Cajon - Redwood Avenue	14.4	10.2	4.2	30%
Chula Vista - East J Street	13.8	9.4	4.4	32%
Del Mar - Mira Costa College	17.9	8.7	9.2	51%

The most substantial air quality improvements occurred at the Del Mar monitoring site, which had the highest ozone concentrations in the 1986-1988 base period. Peak ozone levels at that site decreased by 51% and are the lowest among all sites in the 2000-2002 period. The reduction in peak ozone levels at coastal sites primarily reflects reduced pollution transported over the ocean from the South Coast Air Basin. The highest ozone levels for the 2000-2002 period occurred at the inland monitoring site in Alpine where there were less substantial, but still significant, reductions in peak ozone levels (30%).

Site-specific ozone trends at each of the six long-term monitoring sites are presented as charted year-to-year changes in the EPDC in Attachment I, Figures I-1 through I-6. The charts present data back to the first year for which data are available for each site, and indicate ongoing improvement at all sites, with the most substantial improvement occurring since 1990.

EMISSION REDUCTIONS

As indicated in Table 4, estimated emission reductions over the last three years exceeded previous projections in the 2001 RAQS, based on updated emissions inventory data.[1] Countywide daily VOC emissions decreased 25 tons (232 tons to 207 tons) between 2000 and 2003, a 3.7% average annual reduction, while NOx emissions decreased 26 tons (230 tons to 204 tons), a 3.8% average annual reduction.

[1] Source: ARB's emissions inventory, CCOS Version 2.11

Table 4
Rates of Emission Reduction, VOC & NOx*,**
2000-2003 (tons/day)

	2000	2001	2002	2003	Annual Average Rate of Reduction 2000-2003	2001 RAQS Expected Rate of Reduction†
VOC Stationary	91	93	94	93		
% Reduction	--	1.7%	1.2%	-1.1%	0.6%	
VOC Mobile	141	133	122	114		
% Reduction	--	-5.6%	-8.2%	-7.0%	-6.5%	
VOC Total	232	226	216	207		
% Reduction	--	-2.7%	-4.3%	-4.4%	-3.7%	-3.2%
NOx Stationary	15	16	15	13		
% Reduction	--	5.8%	-8.9%	-10.8%	-4.7%	
NOx Mobile	214	207	199	191		
% Reduction	--	-3.3%	-4.0%	-4.2%	-3.7%	
NOx Total	230	224	214	204		
% Reduction	--	-2.7%	-4.4%	-4.7%	-3.8%	-3.8%

* Source: ARB's emissions inventory, CCOS Version 2.11
** Negative percentages indicate emission reductions; positive percentages indicate increases.
† Derived from emissions data in 2001 RAQS (in Attachment IV of that document, Tables 9 and 10).
NOTE: Columns may not sum to totals due to rounding.

EMISSION TRENDS

VOC and NOx emission trends from 1990 through 2020 are presented in Table 5 and Figure 4 (VOC emissions) and Table 6 and Figure 5 (NOx emissions).[1] Projections of future emissions are based on currently adopted control measures and estimated growth forecasts, and do not reflect the emission benefits of rules that are not yet adopted (such as those scheduled in this 2004 Triennial RAQS Revision for adoption during the 2004–2006 period).

[1] Source: ARB's emissions inventory, CCOS Version 2.11; plus Department of the Navy emission estimates for military equipment (6/6/02); plus District estimates for ships passing San Diego County without stopping. The ship emission estimates were derived from "Marine Vessels Emissions Inventory," Arcadis Geraghty & Miller, 9/23/99.

OVERALL PROGRESS

Without any additional controls, total VOC and NOx emissions are expected to decrease due to ongoing implementation of existing local, state, and federal regulations. Nevertheless, ARB's projection data indicate that VOC and NOx emissions from stationary sources are projected to increase. It is worth noting that a majority of the projected increase in VOC emissions from stationary sources is attributed to one category, "Industrial Coatings and Related Process Solvents." Historically, the District has focused much of its rulemaking control efforts on industrial coatings and solvents; consequently, that category is already well controlled. Further, most of the projected emission increase within that category is attributed to a general subcategory termed "Other," for which emission estimates rely on older data that is less reliable and less documented than other categories. ARB intends to update the inventory for this category.

It is also worth noting that a majority of the projected increase in NOx emissions from stationary sources is attributed to one category, "Electric Utilities." This projected growth reflects new base load power plants anticipated to come online between 2005 and 2010 to meet anticipated electricity demand. However, the emission projections do not consider the benefit of emission offsets that likely would be required under existing federal new source review rules to mitigate emission increases from the new power plants. Additionally, the emissions data may not reflect the full benefit of stringent emission controls that were recently installed on existing base load power plants in San Diego County in response to District requirements.

IMPACT OF FEDERAL SOURCES

A significant fraction of NOx emissions in San Diego County comes from mobile sources that are exclusively under federal jurisdiction. (These sources are only minor contributors to VOC emissions.) These include, but are not limited to, aircraft, ships, and military equipment (such as military aircraft, landing craft, and tactical support equipment). As shown in Table 6 and Figure 5, NOx emissions from these particular federal sources are projected to nearly double by 2020, while other on-road and off-road mobile source emissions are projected to decline significantly due to federal or state regulations.

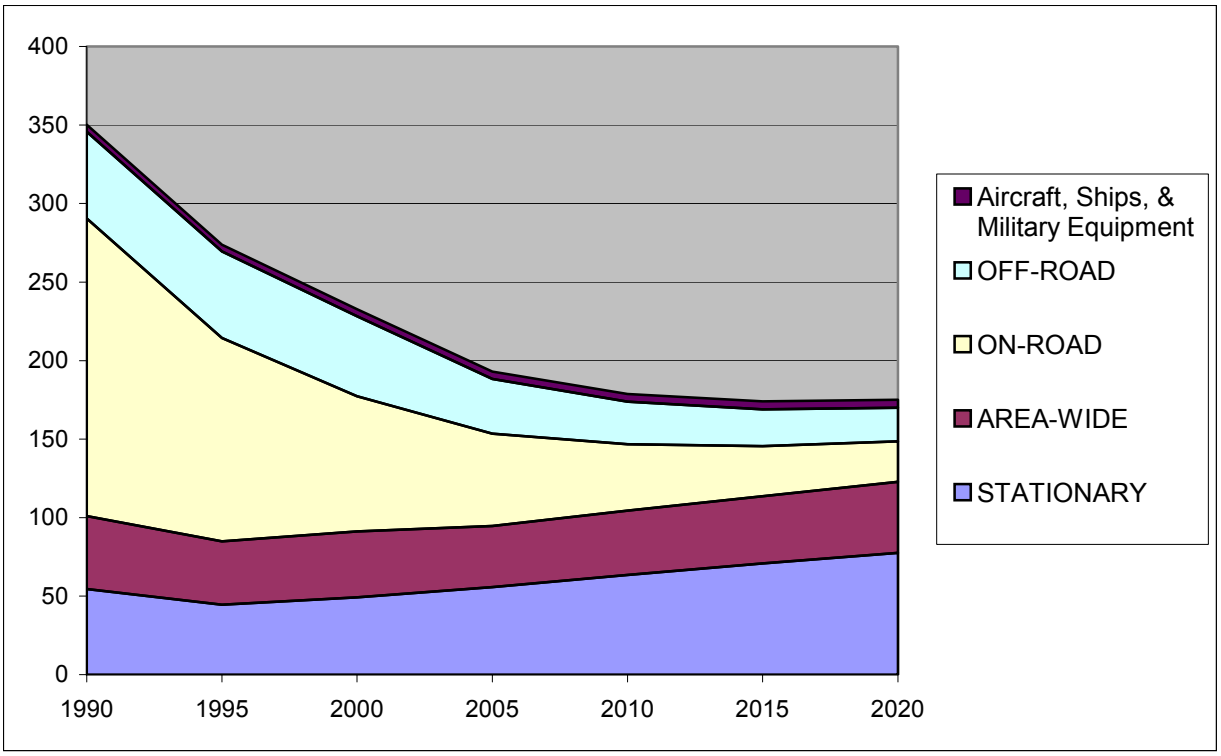
Without an adequate, fair-share level of reductions from sources under federal jurisdiction, the emission reduction burden would be unfairly shifted to sources under District jurisdiction, which are already providing all feasible emission reductions. To avoid this inequity and help ensure timely attainment of air quality standards, effective new EPA standards, retrofit requirements, and financial incentive programs will be needed for sources under exclusive federal jurisdiction.

Table 5
VOC Emission Trends[1]
(tons/day)

	1990	1995	2000	2005	2010	2015	2020
Stationary Sources	55	45	49	56	64	71	78
Area-Wide Sources	46	40	42	39	41	43	45
On-Road Motor Vehicles	190	129	86	59	42	32	26
Off-Road Mobile Sources	55	55	51	35	27	23	21
Aircraft, Ships, & Military Equipment	5	4	5	5	5	5	5
Total	350	274	233	193	179	174	175

NOTE: Columns may not sum to totals due to rounding.

Figure 4
VOC Emission Trends[1]
(tons/day)



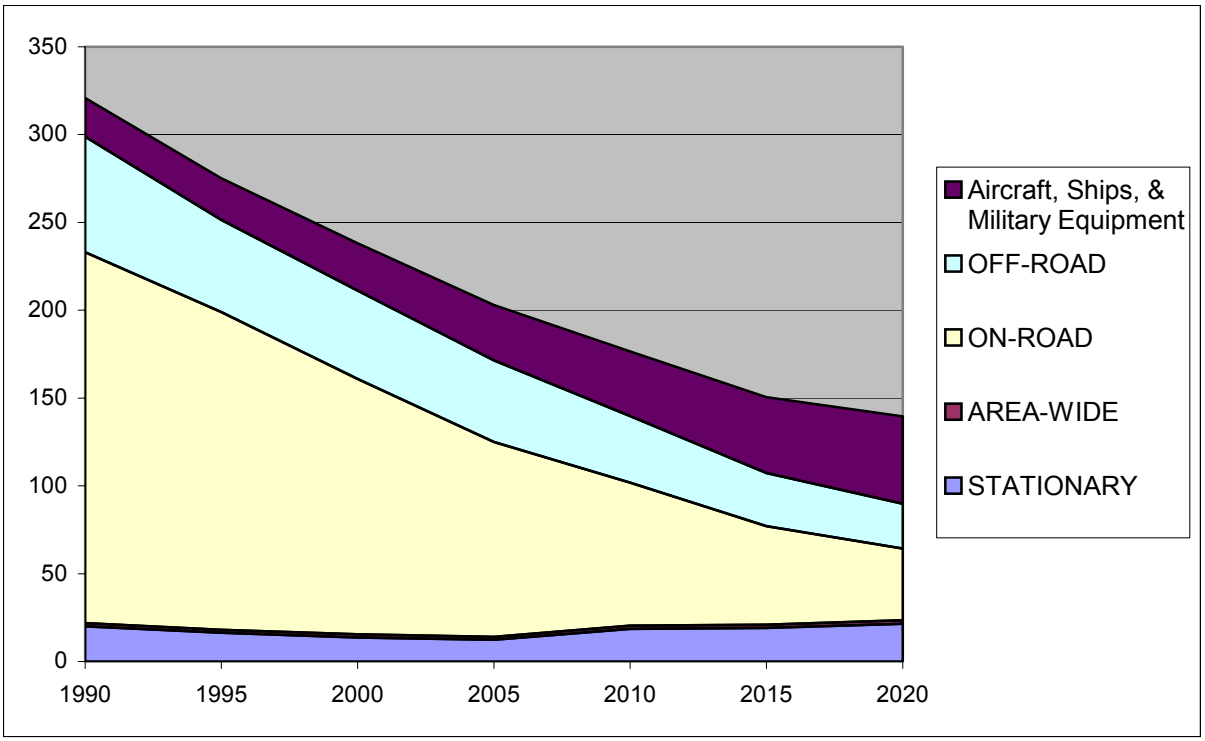
[1] Source: ARB's emissions inventory, CCOS Version 2.11; plus Department of the Navy emission estimates for military equipment (6/6/02); plus District estimates for ships passing San Diego County without stopping. The ship emission estimates were derived from "Marine Vessels Emissions Inventory," Arcadis Geraghty & Miller, 9/23/99.

Table 6
NOx Emission Trends[1]
(tons/day)

	1990	1995	2000	2005	2010	2015	2020
Stationary Sources	20	16	14	12	19	19	22
Area-Wide Sources	2	2	2	2	2	2	2
On-Road Motor Vehicles	211	181	146	111	81	56	41
Off-Road Mobile Sources	66	53	50	46	38	30	26
Aircraft, Ships, & Military Equipment	22	24	26	31	37	43	50
Total	321	275	237	203	177	150	139

NOTE: Columns may not sum to totals due to rounding.

Figure 5
NOx Emission Trends[1]
(tons/day)



[1] Source: ARB's emissions inventory, CCOS Version 2.11; plus Department of the Navy emission estimates for military equipment (6/6/02); plus District estimates for ships passing San Diego County without stopping. The ship emission estimates were derived from "Marine Vessels Emissions Inventory," Arcadis Geraghty & Miller, 9/23/99.

RAQS IMPLEMENTATION PROGRESS 1993 - 2003

In the decade since the RAQS was initially adopted, the District has adopted 16 VOC control measures (Table 7) providing over 10 tons/day of VOC emission reductions, and 8 NOx control measures (Table 8) providing 14 tons/day NOx reductions (24 tons on a peak day). The emission reduction totals only reflect reductions attributed to adoption or amendment of rules since 1993 and do not include emission reductions from earlier versions of these rules or from rules adopted prior to 1993.

Table 7
VOC Control Measures Adopted 1993 – 2003

Control Measure	Rule Number	Adoption Date	Year of Full Implementation	Emission Reductions (tons/day)
Further Control of Polyester Resin	67.12	4/6/93	1993	0.29
Further Control of Aerospace Coating	67.9	11/2/93 4/30/97	1994 1997	0.16 <0.01
Coatings and Printing Inks Manufacturing	67.19	6/7/94	1995	0.09
Foam Blowing and Plastics Expanding	67.22	6/7/94	1995	0*
Bakery Ovens RACT†	67.24	6/7/94	1995	0.3
Further Control of Kelp Processing and Bio-Polymer Manufacturing	67.10	6/15/94 6/25/97	1997 1999	3.71 1.2
Further Control of Marine Coating	67.18	12/13/94	1995	0*
Further Control of Can Coating	69.4	7/25/95	1995	0.07
Groundwater Decontamination	1200	6/12/96	1996	<0.01
Underground Storage Tank Decommissioning and Soil Decontamination	1200	6/12/96	1996	0.37
Automotive Refinishing	67.20	11/13/96	1997	2.00
Adhesives	67.21	12/16/98	1998	0.76
Further Control of Transfer of VOC to Mobile Transport Tanks	61.2	7/26/00	2000	0*
Bulk Gasoline Storage Tank Degassing	By Permit	8/8/01	2001	0-0.71
Further Control of Architectural Coatings	67.0	12/12/01	2004	1.5
Wood Products Coating RACT†	67.11.1	9/25/02	2003	0*

* All sources already complied at time of adoption, but state or federal law required rules.
† Reasonably available control technology.

Table 8
NOx Control Measures Adopted 1993 – 2003

Control Measure	Rule Number	Adoption Date	Year of Full Implementation	Emission Reductions (tons/day)
Electrical Generating Steam Boilers	69	1/18/94 12/12/95	2003	10 annual avg 20 peak day
Industrial and Commercial Boilers BARCT*	69.2	9/27/94	1998	0.32
Stationary Combustion Turbines RACT**	69.3	9/27/94	1995	0†
Stationary Reciprocating Internal Combustion Engines RACT**	69.4	9/27/94	1995	1
Low-NO_X Water Heaters	69.5	6/17/98	2008	0.87
Low-NO_X Furnaces	69.6	6/17/98	2008	0.30
Stationary Combustion Turbines BARCT*	69.3.1	12/16/98	2002	0.07
Stationary Reciprocating Internal Combustion Engines BARCT*	69.4.1	11/15/00	2003	1.32

* Best Available Retrofit Control Technology.
** Reasonably available control technology.
† All sources already complied at time of adoption, but state or federal law required rules.

REEVALUATION OF ALL FEASIBLE MEASURES

State law requires triennial plan updates to include an updated schedule for expeditiously adopting every feasible control measure for emission sources under District purview. In developing an adoption and implementation schedule for a specific control measure, the District must consider the relative cost-effectiveness of the measure, and other factors including technological feasibility, total emission reduction potential, the rate of emission reduction, public acceptability, and enforceability.

To ensure that the RAQS continues to include every feasible control measure applicable to sources under the District's authority, the District reevaluated the control measures listed in the 2001 RAQS Revision that have not yet been adopted (two scheduled measures, three delayed measures, and one study measure). The District is also reviewing adopted rules of other California air districts to determine if there are any other feasible control measures to incorporate into the RAQS in the future. Specifically, ARB is now requiring districts to compare their existing rules and plans for rulemaking to: (1) a list of the most stringent rules among California air districts, which was developed by ARB based on information provided by the California Air Pollution Control Officers Association (CAPCOA); and (2) ARB's "Identification of Performance Standards for Existing Stationary Sources: A Resource Document" (April 1999).

As a result of District feasibility evaluations, eight control measures (Table 9) are scheduled in this 2004 Triennial RAQS Revision for development and consideration of adoption during the

2004–2006 period. These eight measures will potentially provide approximately 3 tons/day and 2 tons/day additional reductions in VOC and NOx emissions, respectively. (Estimated emission reductions are subject to refinement during the actual rule development process.) Two measures are being deleted from the RAQS—Further Control of Bakery Ovens, and Plastics/Composites Coating Operations—due to minimal emission reduction potential and, in the case of the first measure, issues regarding cost-effectiveness and technological feasibility. A detailed discussion of the added and deleted measures is presented following Table 9.

The District analysis further indicates that, for some additional source categories, other air districts have more stringent emission limits than corresponding District rules. These rules are identified in this 2004 Triennial RAQS Revision as "Further Study Measures" (page 25, Table 10) to be assessed during the 2004-2006 period to determine whether the more stringent emission limits would be technologically feasible and cost-effective for San Diego's sources and would provide significant emission reductions beyond that achieved by the District's current rules. Further Study Measures meeting these criteria will be scheduled for adoption in the subsequent 2007 Triennial RAQS Revision. However, District resources permitting, rule development will be pursued before then if resulting emission reductions would be sizable. A more detailed discussion is presented below under "Further Study Measures" (page 24).

Table 9
Adoption Schedule for Feasible Measures

Control Measure	Adoption Schedule	Year of Full Implementation	Pollutant	Estimated Emission Reductions (tons/day)*	Estimated Cost-Effectiveness ($/lb)*
Enhanced Vapor Recovery (Adopt new Rules 61.3.1 and 61.4.1)	2004	2009	VOC	2	5.24
Further Control of Solvent Cleaning (Amend Rule 67.6)	2005	2007	VOC	0.9	5
Further Control of Industrial and Commercial Boilers, Process Heaters and Steam Generators (Amend Rule 69.2)	2004	2006	NO_X	0.1	To be determined
Small Boilers, Steam Generators, and Process Heaters Between 1 MMBtu/hour and 5 MMBtu/hour (Adopt new Rule 69.2.1)	2005	2008	NO_X	0.3	To be determined
Large Commercial Water Heaters Between 75,000 Btu/hour and 1 MMBtu/hour (Adopt new Rule 69.5.1)	2005	2016	NO_X	To be determined	To be determined
Further Control of Residential Water Heaters Smaller Than 75,000 Btu/hour (Amend Rule 69.5)	2007	2018	NO_X	1.5	To be determined
Stationary Reciprocating Internal Combustion Engines BARCT† Update (Amend Rule 69.4.1)	2006	2008	NO_X	To be determined	To be determined
Further Control of Stationary Combustion Turbines (Amend Rule 69.3.1)	2006	2009	NO_X	To be determined	To be determined

* Estimated Emission Reductions and Cost-Effectiveness are subject to refinement during rule development.
† Best Available Retrofit Control Technology.

SCHEDULED MEASURES

Enhanced Vapor Recovery Program (Adopt New Rules 61.3.1 and 61.4.1)

The 2001 RAQS included a District commitment to amend Rule 61.3 (Transfer of VOC into Stationary Storage Tanks) and Rule 61.4 (Transfer of VOC into Vehicle Fuel Tanks) in 2002 as necessary and appropriate to implement feasible or mandatory elements of the ARB's Enhanced Vapor Recovery (EVR) regulations, which control gasoline vapor emissions from gasoline service stations. That commitment was conditioned on timely ARB completion of a technology reevaluation. Because ARB's technology reevaluation was not completed until late 2002, Rule 61.3 and 61.4 amendments were rescheduled for late 2003.

However, in light of ongoing revisions to ARB's EVR regulations and different compliance deadlines for new versus existing facilities, the District now proposes to (1) adopt, in 2004, two new rules (Rules 61.3.1 - Transfer of Gasoline into Stationary Underground Storage Tanks, and 61.4.1 - Transfer of Gasoline from Stationary Underground Storage Tanks into Vehicle Fuel Tanks) to address the EVR requirements for Phase I (bulk transfer) and Phase II (vehicle refueling) vapor recovery systems, respectively, as they become applicable, and (2) repeal existing District Rules 61.3 and 61.4 in the future, once all existing facilities are subject to all the requirements of EVR.

Current Status of Proposed Rules 61.3.1 and 61.4.1. Drafts of Rules 61.3.1 and 61.4.1 are being developed for public review. A public workshop will be held in Summer 2004, and District Board consideration is anticipated by late 2004.

Background. Vapor recovery systems have been used in California for nearly 30 years to control gasoline vapor emissions from gasoline service stations. Phase I vapor recovery systems address transfer of gasoline into underground storage tanks and Phase II systems address transfer of gasoline from underground storage tanks into vehicle fuel tanks.

ARB develops statewide regulations to control gasoline vapor emissions and certifies vapor recovery systems to meet specified standards. Districts must adopt local rules that are consistent with the statewide regulations, issue permits to implement associated requirements, and conduct compliance inspections.

On March 23, 2000, ARB promulgated EVR regulations to improve the effectiveness of the vapor recovery program at gasoline service stations. The EVR regulations increase the stringency of existing standards for Phase I (bulk transfer) and Phase II (vehicle refueling) systems and add several new standards for Phase II systems. The new Phase II standards include onboard refueling vapor recovery (ORVR) compatibility, unihose dispensers, liquid retention, nozzle spitting, "dripless" nozzles, and In-Station Diagnostics (ISD). These regulations have been amended several times by ARB since 2001 and are in the process of being amended again.

Since July 2001, new or modified gasoline stations have been required to install Phase I EVR systems, and some aspects of Phase II EVR systems (liquid retention and ORVR compatibility) have been phased in for those facilities between July 2001 and April 2003. The remaining

portions of the EVR regulations are scheduled to be implemented under a revised ARB timeline that was promulgated in December 2003. Under this timeline, new or modified facilities constructed after April 2004 must install a Phase II EVR system (ISD is delayed for small throughput facilities until April 2005). Existing facilities must have a Phase I EVR system and specified aspects of Phase II EVR (ORVR and liquid retention) installed by April 2005, and a Phase II EVR system installed by April 2008 (except unihose dispensers and ISD for small throughput facilities). As currently expected to be promulgated, the EVR regulations are estimated by ARB to result in maximum VOC emission reductions of about 600 tons/year (~2 tons/day) for San Diego County, with a cost-effectiveness of $5.24 per pound of VOC reduced. Actual emission reductions could be less, depending on future commercial availability and actual in-use performance of these technologies.

Issues. Some general issues that affect this rulemaking are:

1. The District is committed to adopting the EVR requirements as soon as practicable. However, ARB has continued to modify EVR requirements, definitions, test methods, and timelines, and is now behind the original schedule for adoption of the EVR regulations, especially for Phase II vapor control.

2. ARB is still in the process of certifying Phase II EVR systems, and no system is certified at this time. These yet-to-be certified systems might have different requirements, including inspection and maintenance procedures, that cannot be anticipated in the proposed new local rules. In addition, the lack of certified systems may cause further revisions to ARB's implementation timeline.

3. The rules must be sufficiently general to allow for any new vapor recovery systems that may be proposed in the future. However, major oil companies have encouraged the District to specify all requirements in the rules in detail, and have threatened or initiated permit appeals on the basis that certain permit conditions impose requirements not explicitly stated in existing vapor recovery rules. Thus, the new rules must balance the need for specificity with the need for future flexibility to accommodate yet-to-be certified vapor control systems.

4. ARB's existing EVR regulations do not address aboveground storage tanks, although ARB is currently developing regulations for aboveground tanks. This may delay repeal of existing District Rule 61.3, which regulates both aboveground and underground tanks. ARB's control requirements for aboveground tanks must first be developed, adopted, and implemented before existing local requirements in Rule 61.3 can be repealed.

5. The District is considering whether to submit the proposed new rules to EPA for inclusion in the federally enforceable State Implementation Plan (SIP), which contains existing Rules 61.3 and 61.4. The fluid nature of ARB's EVR program could be addressed by District discretion in the new rules. However, based on past SIP rule approval actions, EPA would likely disapprove a rule incorporating such discretion. Conversely, if the new rules are not submitted to EPA for inclusion in the SIP, the

existing SIP rules might not be able to be repealed (due to a perceived relaxation of the SIP) and conflicting local and federal requirements could result.

Further Control of Solvent Cleaning Operations (Amend Rule 67.6)

Existing Rule 67.6 (Solvent Cleaning Operations) addresses VOC emissions generated by the application of solvents (held in a tank or reservoir) to remove unwanted materials, such as dirt and oils, from a surface. In the 1998 RAQS, amending Rule 67.6 to further control VOC emissions was scheduled for adoption in 1999, to the extent determined feasible during subsequent rulemaking. Rule amendments were intended to reflect the control requirements in South Coast Air Quality Management District (SCAQMD) Rules 1122 and 1171, which are more stringent than those previously identified as Best Available Retrofit Control Technology (BARCT) in the statewide BARCT determination.

ARB previously reported that the SCAQMD rules contain the following requirements that are not in District Rule 67.6:

- Solvent VOC limit of 50 grams per liter for cold cleaners (25 grams per liter as of 1/1/2003), including remote reservoirs and open-top dip tanks; or airless or air-tight cleaning systems for cold cleaners using high-VOC solvents;
- freeboard ratio of 0.75 for all open-top dip tanks;
- requirement for a superheated vapor system or secondary freeboard chiller for open-top vapor degreasers;
- freeboard ratio of 1.0 for all open-top vapor degreasers; and
- automated parts handler.

These and other potential control requirements were evaluated to determine their technological feasibility, potential VOC reductions, and cost-effectiveness for San Diego County sources.

The cost-effectiveness of water-based or low-VOC cleaning systems is primarily affected by the VOC emission rate of the unit being replaced and the increased electricity needed to heat and pump aqueous solvents in the new replacement unit. Over 86% of the approximately 5,100 degreasing units in San Diego are small remote reservoirs with VOC emissions of less than 0.324 pounds/day, or 118 pounds/year, each. The lowest and average cost-effectiveness values calculated in 1999 for these units were $4.36 and $5.26, respectively, per pound of VOC reduced, which exceeded the District's 1999 rule development cost-effectiveness reference level of $2.50 for VOC control measures. Thus, the measure was not adopted in 1999. However, as required by ARB, there was a commitment to periodically reevaluate the feasibility of the measure.

Since then, several air districts have adopted and implemented similar control measures. Further, in response to an ARB request, the District's cost-effectiveness reference level for VOC control measures was reevaluated and has been raised for purposes of equity with other California air districts with similar air quality and to facilitate additional effective control measures. Consequently, some elements of the control measure as analyzed in 1999 would now be considered cost-effective and the District now proposes to proceed with rule development.

Rule 67.6 amendments are expected to take longer to develop than other control measures. The feasibility evaluation must be updated to reflect current circumstances in order to determine which elements are now considered cost-effective. Further, Rule 67.6, which was initially adopted in 1979, needs to be substantially rewritten to conform to the District's current regulatory standards. Most importantly, due to the large number of small businesses affected by the rule, the public input process for this rule development will need to be extensive. Therefore, in this RAQS revision, the District commits to developing amendments to Rule 67.6, reflecting cost-effective elements of the control measure, for District Board consideration in 2005.

Further Control of Industrial and Commercial Boilers, Steam Generators, and Process Heaters (Amend Rule 69.2)

Currently, Rule 69.2 exempts from NOx emission standards any unit with an annual heat input of less than 220,000 therms (for units with a heat input rating of less than or equal to 50 million (MM) BTU/hour). These units are subject only to operational standards, such as unit maintenance and recordkeeping. The District is evaluating possible amendments to Rule 69.2 to lower the exemption level (potentially to 90,000 therms/year, consistent with State BARCT guidance). By requiring emission controls averaging 60% efficiency for about 100 affected units, this measure could reduce NOx emissions by an estimated 40 tons/year (0.1 ton/day). The District will be further evaluating the cost-effectiveness of this measure before formally proposing rule amendments in 2004. Additionally, the District will evaluate the feasibility of more stringent emission limits recently adopted by the San Joaquin Valley air district.

Small Boilers, Steam Generators, and Process Heaters Between 1 MMBTU/hour and 5 MMBTU/hour (Adopt new Rule 69.2.1)

Existing Rule 69.2 (Industrial and Commercial Boilers, Steam Generators, and Process Heaters) applies to units rated 5 MMBtu/hour and larger. Smaller units are not currently regulated. The District proposes to consider adoption of a new Rule 69.2.1 in 2005 to reduce NOx emissions from small boilers, steam generators, and process heaters with a heat input rating between 1 MMBTU/hour and 5 MMBTU/hour, consistent with SCAQMD and Ventura County rules. There are an estimated 300 boilers of that size range in San Diego County, cumulatively emitting an estimated 160 tons/year of NOx. Assuming a 70% reduction on average, as reported by Ventura County, the new rule would reduce NOx emissions by an estimated 110 tons/year (0.3 ton/day). The District will be further evaluating the cost-effectiveness and technological feasibility of this measure before formally proposing the new rule.

Large Commercial Water Heaters Between 75,000 BTU/hour and 1 MMBTU/hour (Adopt new Rule 69.5.1)

Proposed new Rule 69.2.1 would control NOx emission from units with a heat input rating of 1 MMBTU/hour and larger (as described above), while existing Rule 69.5 (Natural Gas-Fired Water Heaters) applies to residential water heaters with a heat input rating less than 75,000 BTU/hour. The District will consider developing a new Rule 69.5.1 to control new large commercial water heaters with a heat input rating between 75,000 BTU/hour and 1

MMBTU/hour, consistent with SCAQMD and Ventura County rules.[1] Therefore, the District will first evaluate the technological feasibility, emissions reduction potential, and cost-effectiveness of a potential control measure for commercial water heater units sized between 75,000 and 1 MMBTU/hour, and assess the number and types of existing units in the County and the commercial availability of units complying with similar SCAQMD and Ventura County rules. If it is determined feasible, the District will develop a cost-effective rule for District Board consideration in 2005. Although the emission reduction potential of this measure is not yet precisely known, it is considered potentially significant enough to warrant scheduling development of this measure.

Further Control of Residential Water Heaters Smaller Than 75,000 Btu/hour (Amend Rule 69.5)

Existing District Rule 69.5 (Natural Gas-Fired Water Heaters), adopted in 1998, limits emissions from new residential-type water heaters in San Diego County to 40 nanograms per Joule (ng/J) of heat output. The 2001 RAQS included a District commitment to assess, in late 2002, the commercial availability of natural gas-fired water heaters that meet a NOx emissions limit of 20 ng/J of heat output, consistent with SCAQMD Rule 1121.

SCAQMD's Rule 1121 controls water heaters in two phases. First, it requires all new water heaters sold in the South Coast region on or after July 1, 2002, to meet the 20 ng/J NOx limit. It further requires that new units sold on or after January 1, 2005, meet a 10 ng/J NOx limit.[2] SCAQMD proposes to amend Rule 1121 in 2004 to delay the effective date of the 10 ng/J emission limit by one year, to 2006.

In the 2001 RAQS, the District committed that if sufficient 20-ng/J units were found to be commercially available and cost-effective as of late 2002, the District would then amend Rule 69.5 in 2003 to reduce the NOx emissions limit for new units sold in San Diego County from 40 ng/J to 20 ng/J. The 2001 RAQS did not include a commitment to adopt South Coast's future 10 ng/J limit for San Diego County because it has not yet been determined to be feasible, and because the implementation date (2005, recently proposed by South Coast to be amended to 2006) was outside the planning cycle of the 2001 triennial RAQS revision (2001-2003).

SCAQMD's Rule 1121 includes an alternative compliance mechanism, allowing water heater manufacturers to contribute $5,400 per ton of NO_x to a mitigation fee program in lieu of meeting the interim requirement of 20 ng/J NOx emissions. To date, all manufacturers selling units in the South Coast region are relying on the mitigation fee option.[3] Consequently, units meeting the 20 ng/J limit are not commercially available at this time. It appears that manufacturers are instead

[1] It should be noted that this RAQS revision only proposes that 1 MMBTU/hour be the dividing line between the applicability levels of the control measures for small boilers versus large commercial water heaters. However, the appropriate dividing line between the applicability levels of the two measures will be determined during the rule development process.

[2] SCAQMD's Rule 1121 is technology forcing because it relies on an assumption that improving existing low-NOx burner technologies—or developing, testing, and commercializing new burner technologies—would be completed in time to implement the 2002 and 2005 emission standards.

[3] Andrew Lee, SCAQMD, personal communication, December 2003.

focusing on meeting SCAQMD's future 10 ng/J limit so that they can make a single change to their product lines rather than changing twice.

Because units complying with the 20 ng/J emissions limit are not commercially available at this time, amendments to District Rule 69.5 were not developed for adoption in 2003. The District now intends to assess, in 2006, the commercial availability and cost-effectiveness of units complying with the more-stringent 10 ng/J emissions limit of SCAQMD's rule. If sufficient complying units are found to be commercially available and cost-effective, then the District will schedule amendment of Rule 69.5 in 2007, to incorporate the 10 ng/J limit for new residential water heaters sold in San Diego County starting in 2008. Assuming a ten-year useful life for water heaters, it would take ten years (2018) for all the water heaters in the County to be replaced with units that comply with the tightened standard.

The 2001 RAQS estimated that tightening the water heater NOx emissions limit from the current 40 ng/J to 20 ng/J would reduce San Diego County NOx emissions by approximately 1 ton/day. Therefore, reducing the limit to 10 ng/J (instead of 20 ng/J) would increase the emission reductions attributable to this control measure to an estimated 1.5 tons/day. This emission reduction estimate is subject to refinement during future rule development.

Stationary Reciprocating Internal Combustion Engines BARCT Update (Amend Rule 69.4.1)

Rule 69.4.1, Stationary Reciprocating Internal Combustion Engines – BARCT, was adopted in 2000. Subsequently, in 2001, ARB issued BARCT requirements for spark-ignited (gas-fired) stationary reciprocating internal combustion engines. The District will evaluate the feasibility of incorporating the new BARCT requirements as revisions to Rule 69.4.1, based on technological and economic considerations specific to affected sources, estimate the potential emission reductions that could be achieved by those requirements and, by 2006, propose amendments to Rule 69.4.1 that are determined feasible and cost-effective.

Further Control of Stationary Combustion Turbines (Amend Rule 69.3.1)

The District proposes to evaluate the feasibility of incorporating into existing District Rule 69.3.1 new requirements addressing high emission rates from older peaking power plants. (These plants normally tend to operate during the hottest summer days, which are often days of peak ozone concentration.) The District will evaluate the feasibility of incorporating new requirements as amendments to Rule 69.3.1, based on technological and economic considerations specific to affected sources, estimate the potential emission reductions that could be achieved by those requirements and, in 2006, propose amendments to Rule 69.3.1 that are determined feasible and cost-effective. The emission reduction potential, particularly during hot summer days when ozone concentrations are highest, is considered potentially significant enough to warrant scheduling development of the measure.

DELETED MEASURES

Further Control of Bakery Ovens (Amend Rule 67.24)

In the 1998 RAQS, amending Rule 67.24 was proposed to meet BARCT requirements by lowering the exemption threshold from 50 to 25 tons/year of VOC and increasing the VOC control requirement from 90% to 95%. At that time, there were two major bakeries in San Diego County. The larger one was already subject to the 90% control requirement, and the smaller one was expected to be brought under control by lowering the exemption threshold from 50 to 25 tons/year. Since then, the smaller bakery has closed and currently there are no bakeries in San Diego County with VOC emissions between 25 and 50 tons/year. Consequently, the lower threshold would not result in any emission reductions.

Additionally, the one remaining large bakery has installed additional control equipment to ensure compliance with the existing 90% control requirement. The District source-tested the bakery's new control equipment when it was installed, and again one year later. The tests indicated that while the upgraded control equipment did reduce emissions more than 95% at the time of the first test, performance of the control equipment was uneven and has slightly deteriorated with time, so that emission reductions were less than 95% at the second test (although still in compliance with the existing 90% control requirement). Thus, the existing equipment does not have the reliability and durability needed to demonstrate a 95% on-going control level. Adding sufficient platinum catalyst to sustain 95% control in the long-term would have an unacceptable $29 per pound incremental cost-effectiveness to obtain only four tons/year (0.01 ton/day) additional VOC emission reductions. Furthermore, the batch processing nature of the bakery industry (with a wide variety of bakery products) has too much variability to ensure continuous compliance with a 95% control requirement. Also, 95% VOC control efficiency has not been demonstrated elsewhere in the State on an on-going basis. Therefore, the District has determined that the 95% control requirement is not feasible and this measure is being deleted from the RAQS.

Plastic Parts, Rubber, Composite, and Glass Coating Operations (Adopt a New Rule)

In the 1998 RAQS, the Plastic Parts, Rubber, Composite, and Glass Coating control measure was proposed for adoption to the extent determined feasible during subsequent rulemaking. The control measure would require using low-VOC coatings and cleaning materials and high-transfer efficiency application equipment or add-on control equipment to reduce VOC emissions. In 1998, the estimated VOC emission reduction potential was 24 tons/year, based on a 1997 inventory indicating 36 facilities emitting approximately 110 tons/year.

However, further investigation during preliminary rule development has revealed that far fewer reductions could be achieved. Changes in the industry are largely responsible for the decreased emission reduction potential. Since 1998, seven facilities have closed, reducing emissions by 49.3 tons/year. Additionally, several facilities have switched cleaning solvents to acetone, further reducing emissions by an additional 5.6 tons/year. Finally, two new facilities were required to install controls to meet Best Available Control Technology requirements and, therefore, represent an emission increase of only 0.3 ton/year. Thus, emissions from facilities

that would be affected by a new rule have been reduced by half to about 55 tons/year, and the emissions reduction potential has decreased by 88% to less than 3 tons/year (0.01 ton/day). Consequently, this control measure is being deleted from the RAQS. The negligible emission reduction potential no longer warrants the costs and administrative burden of a new rule.

FURTHER STUDY MEASURES

District Rules Comparison

ARB has required districts to compare their respective rules and plans for rulemaking to the most stringent corresponding rule among California air districts. A list of the most stringent rules was developed by ARB based on information provided by a Rules Subcommittee of CAPCOA.

The control measures for which sizable, cost-effective emission reduction potentials have already been determined are addressed above, under Scheduled Measures. For the remaining rules identified in the ARB/CAPCOA list, a detailed analysis will be necessary to assess the number and nature of the affected sources and their emissions, and to evaluate technological feasibility, cost-effectiveness, and emission reduction potential to determine whether the more stringent emission limits in the other districts' rules are feasible for San Diego's sources. That detailed analysis will require more time than was available for the preparation of this triennial plan update. Therefore, the affected rules are being listed in this 2004 Triennial RAQS Revision as "Further Study Measures" (Table 10) to be assessed during the 2004-2006 period.

Progress in assessing Further Study Measures will be annually reported to ARB. In 2004, there will be an initial screening assessment to determine which measures merit priority evaluation for San Diego County. The first two measures listed in Table 10 have already been assigned a high priority for assessment, pursuant to requests from ARB.

Any of the Further Study Measures that are determined feasible will be scheduled for adoption in the subsequent 2007 Triennial RAQS Revision. District resources permitting, rule development will be pursued before then if resulting emission reductions would be sizable.

Table 10
Further Study Measures
2004-2006 Period

Control Measure	Other District Rule Number*	San Diego Rule Number
Solvent Cleaning Operations *(First Priority: investigate potential reductions from wipe-cleaning)*	SC 1171	Various Coating Rules
Adhesive and Sealant Applications *(Priority)*	SC 1168	67.21
Aerospace Manufacturing Operations	SC 1124	67.9
Graphic Arts	SC 1130	67.16
Food Products Manufacturing/Processing	SC 1131	No comparable rule
High Emitting Spray Booth Facilities	SC 1132	Various Coating Rules
Wood Products Coating Operations	SC 1136	67.11-67.11.1
Polyester Resins Operations	SC 1162	67.12
Petroleum Storage Tanks	SC 1178	61.1
Equipment Leaks	BA 8-18	Various Rules
Automotive Refinishing	SJV 4602	67.20
Mobile Transport Tanks Loading	SJV 4621	61.2

*SC = South Coast air district; BA = Bay Area air district; SJV = San Joaquin Valley air district.

Agricultural Sources

To reduce air contaminant emissions from agricultural sources, California enacted Senate Bill 700 in 2003. Among other requirements,[1] the new State law requires ARB, by July 1, 2005, to develop a definition of a "large confined animal facility," considering the emissions from such facilities and their potential impact on ambient air quality.[2] If large confined animal facilities meeting ARB's definition exist in San Diego County, the District would then be required to adopt a rule by July 1, 2006, to reduce (to the extent feasible) emissions from such facilities, unless the District determines that large confined animal facilities will not contribute to a violation of any state or federal ambient air quality standard. Accordingly, after ARB defines

[1] A key provision of SB 700 removed the restriction from State law that prevented air districts from requiring permits for agricultural sources. Most other requirements of SB 700 apply only to areas that are designated nonattainment—as of January 1, 2004—for federal particulate matter and ozone standards. Because San Diego County was not designated nonattainment for those federal standards as of that date, the only emissions control measure development requirement of SB 700 that would apply to San Diego is H&SC Section 40724.7, pertaining to large confined animal facilities.

[2] VOC emissions from confined animal facilities are generated directly from the animals and their digestive processes, as well as from the decomposition and treatment of their wastes.

large confined animal facilities, the District will determine whether such a rule is needed and, if required, will develop the rule for adoption by July 1, 2006.

INCENTIVE PROGRAMS

Financial incentive programs augment traditional control programs to further encourage technology development and provide cost-effective emission reductions not easily achieved by regulations. The incentive programs implemented in San Diego County are:

- Carl Moyer Memorial Air Quality Attainment Program;
- Vehicle Registration Fund Program;
- Lower Emission School Bus Replacement and Retrofit Program;
- Emission Reduction Credit Bank For Peaking Powerplants Program;
- Heavy-Duty Diesel Vehicle Retrofit Program;
- Backup Generator Mitigation Funds Program;
- Congestion Mitigation and Air Quality Improvement (CMAQ) Program; and
- Lawn Mower Exchange Program.

Table 11 summarizes the funds allocated by program since July 1999 and the estimated annual emission reductions that will be obtained over the lives of the funded projects. A brief discussion of each program is presented after Table 11, describing its origin, funding sources, implementing agency, and the types of projects funded. Projects funded during the 2000-2003 planning cycle provided combined emission reductions of 2.5 tons/day (901 tons/year) of VOC plus NOx, as well as 1.5 tons/day (559 tons/year) of carbon monoxide (CO) reductions and 0.1 ton/day (44 tons/year) of particulate matter (PM) reductions.

Table 11
Incentive Programs
Annual Funding Allocations and Emission Reductions

Program	Amount Funded	Annual Emission Reduction (tons/year)[1]				
		VOC	NOx	VOC+NOx	CO	PM_{10}
FY 1999-2000						
Carl Moyer	$923,319		22.76	22.76		1.15
CMAQ	$12,269,412	61.30	94.50	155.80	181.53	
Lawnmower	$100,000	0.70	0.10	0.80	11.00	
TOTAL:	**$13,292,731**	**62.00**	**117.36**	**179.36**	**192.53**	**1.15**
FY 2000-2001						
Carl Moyer	$1,206,539		21.71	21.71		3.87
CMAQ	$22,557,436	37.31	72.81	110.12	148.40	
Lawnmower	$100,000	0.70	0.10	0.80	11.00	
School Bus	$4,411,834		5.26	5.26		0.87
Vehicle Registration Fund[2]	$3,915,459			61.02		
TOTAL:	**$32,191,268**	**38.01**	**99.88**	**198.91**	**159.40**	**4.74**
FY 2001-2002						
Carl Moyer	$1,796,496		67.30	67.30		4.80
CMAQ	$11,413,829	25.29	46.55	71.84	148.32	0.23
Credit Bank	$1,336,928		53.52	53.52		5.44
Lawnmower	$136,000	0.80	0.10	0.90	13.20	
School Bus	$8,145,977		11.48	11.48		1.49
TOTAL:	**$22,829,230**	**26.09**	**178.95**	**205.04**	**161.52**	**11.96**
FY 2002-2003						
Backup Generator	$1,064,699		25.55	25.55		1.43
CMAQ	$25,468,052	46.46	64.16	110.62	36.75	11.89
Heavy-Duty Diesel Retrofit	$1,065,000					0.16
Lawnmower	$100,000	0.50	0.10	0.60	9.10	
School Bus	$377,495		0.66	0.66		0.06
Vehicle Registration Fund[2]	$7,487,000			179.85		12.79
TOTAL:	**$35,562,246**	**46.96**	**90.47**	**317.28**	**45.85**	**26.33**
GRAND TOTAL:	**$103,875,475**	**173.06**	**486.66**	**900.58**	**559.30**	**44.19**

[1] Annual emission reductions continue for the life of each project, which varies by project.

[2] For the Vehicle Registration Fund Program, combined VOC plus NOx emission reductions were calculated. Separate values for the individual pollutants are not available.

PROGRAM DESCRIPTIONS

Carl Moyer Program

The Carl Moyer Memorial Air Quality Standards Attainment Program is a State-funded program codified in H&SC Section 44275 et seq.[1] The primary purpose is to reduce NOx emissions from heavy-duty diesel engines, although PM emission reductions resulting as a secondary benefit of the projects are also tracked. The program consists of seven categories of heavy-duty diesel applications: on-road, off-road, locomotive, marine, stationary agricultural irrigation pumps, forklifts, and airport ground support equipment. Within those categories, three types of projects are eligible for funding: new purchase, repowering (replacing an older diesel engine with a newer one in an existing piece of equipment), and retrofit (the addition of control equipment to reduce emissions from the existing engine). Examples of funded projects include the purchase of new compressed natural gas (CNG) transit buses, and repowering older on-road diesel trucks, earth moving equipment, and marine vessels.

The program has an overall cost-effectiveness requirement of no more than $13,600 per ton of NOx reduction, and each project type within each category has additional criteria. Funds are allocated by ARB to participating air districts based on a combination of population and the district's SIP commitment to heavy-duty vehicle emission reductions. Districts are required to match every $2 of State funds with $1 of district funds. Beginning in the 2002-03 fiscal year, a new State statute required 50% of the State funds in the program be allocated to "Environmental Justice Areas" (low-income communities or communities of color that are adversely impacted by air pollution).

Vehicle Registration Fund Program

The Vehicle Registration Fund is a District program established pursuant to State law (H&SC 44220 et seq.), using a vehicle registration fee collected by the Department of Motor Vehicles to fund voluntary motor vehicle emission reductions. On December 11, 1990, the District Board established a $2 annual fee for every on-road motor vehicle registered in San Diego County. The District uses a portion of those funds for its internal air quality planning and monitoring related to motor vehicle emissions, and biennially allocates remaining funds to motor vehicle emission reduction projects. All projects must be voluntary and cannot be required by any regulation, mandate, or binding agreement.

Projects are selected using District Board-adopted criteria designed to maximize overall program effectiveness. These criteria emphasize cost-effectiveness, emission reduction potential, matching fund contribution, and implementing the Transportation Control Measures identified in the RAQS. Two types of projects are eligible: direct tailpipe emission reductions, and indirect emission reductions.

[1] The incentive program is named in honor of the late scientist Dr. Carl Moyer (1937-1997), in recognition of his work in the air quality field and his efforts in bringing about this incentive.

Direct tail pipe emission reduction projects are similar to those in the Carl Moyer Program in which new low-emission (e.g., natural gas) vehicles are purchased in lieu of diesels, or newer diesel engines replace older diesel engines in existing equipment (repowering). Examples include the purchase of new CNG transit buses, school buses, taxis, and other CNG vehicles, liquid natural gas (LNG) trash trucks, repowering on-road trucks and earth moving equipment, and a voluntary vehicle retirement program that has scrapped over 4,000 pre-1986 model year vehicles. The Vehicle Registration Program and the Carl Moyer Program together have funded the incremental cost of replacing 324 diesel-fueled public transit buses with CNG transit buses in San Diego County.

Indirect emission reductions relate to transportation demand management projects (which reduce emissions through reduced vehicle travel), increased vehicle occupancy, or improved traffic flow. Funded projects include: shuttle buses, vanpooling, guaranteed ride home programs, bicycle programs and improved traffic signalization.

Lower-Emission School Bus Program

The Lower-Emission School Bus Replacement and Retrofit Program reduces the exposure of school children to cancer-causing and smog-forming diesel school bus emissions through a combined approach of replacing and retrofitting older high-polluting school buses. School districts with pre-1987 model year buses can replace those buses with either new CNG buses or new lower-emission diesel buses by contributing 25% of the cost, up to a maximum of $25,000. The program pays for the remainder. School districts that purchase CNG buses are eligible to receive an additional 10% of their award for CNG fueling infrastructure expenses.

The second component of the program is funding to retrofit existing school buses with particulate matter (PM) filters. Retrofit devices must be certified by ARB as reducing PM emissions by 85%. The program pays the full cost of the filter plus installation. School districts participating in the retrofit component must agree to use only low-sulfur diesel fuel (less than 15 ppm of sulfur) once the bus has been retrofit. Low-sulfur diesel typically costs about $0.10/gallon more than traditional California diesel. To offset that additional expense, participating school districts are eligible for a one-time cost differential of $500 per retrofitted bus.

The Lower-Emission School Bus Program was instituted statewide in fiscal year 2000-01 with a $50 million dollar budget allocation from the Governor. Those funds were spread over two years and allocated to air districts based on the district's share of all pre-1987 model year buses. As in the Carl Moyer Program, 50% of the funds must be expended in Environmental Justice Areas.

In the second year of the program (fiscal year 2001-02), the District augmented its allocation with funding from powerplant mitigation funds paid to the District for excess emissions that occurred during the 2001 energy crisis. Funds for the third and fourth years of the program (fiscal years 2002-03 and 2003-04) come from an allocation of Proposition 40 bond funds. However, due to a greatly reduced allocation to the District in those years, the District has opted to have the California Energy Commission (CEC) allocate its funds through the CEC's statewide bus replacement program. The Lower-Emission School Bus Program funding in San Diego County has provided for the purchase of 48 CNG replacement buses, 42 diesel replacement buses, and retrofitting 333 existing diesel buses with PM filters.

Emission Reduction Credit Bank for Peaking Powerplants

ARB created this emission reduction credit bank in 2001, as directed by the Governor in Executive Order D-24-01 (February 8, 2001) and modified by Executive Order D-28-01 (March 8, 2001). The program was designed to create surplus NOx and PM emission reductions to be placed in a statewide credit bank and made available from 2001 to 2003 to offset increased NOx and PM emissions from new or expanding powerplant peaking units in California to meet electric energy demand. ARB conducted both the solicitation and evaluation of emission reduction projects. No specific guidelines were established for the type of project to be funded, although mainly projects of the type eligible for Carl Moyer funding were submitted and funded.

The program had a project cost-effectiveness requirement of no more than $6,000/ton of NOx or PM emissions reduction, and the project was required to be completed quickly in order for the resulting offsets to be available within the 2001-2003 time frame. Grants were issued to the local air districts in which the selected projects were located. The local districts then contracted with the applicants and administered the grant funds. In San Diego County, the grants funded repowering of off-road construction equipment (bulldozers, scrapers, and excavators) and repowering of, and installation of selective catalytic reduction (SCR) control equipment on, mobile gantry cranes.

Heavy-Duty Diesel Vehicle Retrofit Program

After the solicitation for the Emission Reduction Credit Bank Program ended and all the qualifying projects had been funded, some program funds still remained. Because San Diego County had been one of the more successful districts statewide in the retrofitting of school buses with PM filters, ARB offered a portion of the remaining funds to the District to retrofit heavy-duty diesel municipal fleet vehicles with PM filters. The District was required to match ARB funds on a dollar-for-dollar basis. Transit buses, trash trucks, and school buses were prohibited from participating, because they are subject to other incentive programs or regulatory control requirements.

On October 2, 2002, the District Board approved use of Vehicle Registration funds to match the ARB funds and authorized the District to conduct the Heavy-Duty Diesel Vehicle Retrofit Program for Local Government Fleets. Subsequently, notices were mailed to every municipality in the County announcing the availability of the funds. A contractual agreement with the City of San Diego to fund the purchase and installation of up to 80 PM filters on heavy-duty vehicles in its fleet has been executed and the installations are nearly complete. The District also entered into a Memorandum of Agreement with the County of San Diego to purchase and install up to 50 PM filters on heavy-duty vehicles in its fleet. The County is currently in the process of contracting for the work.

While some funding remains, no other municipal fleets have expressed an interest in retrofitting their fleets. As the program was drawing to a close and other air districts in the State had similar difficulties in obtaining commitments, ARB modified the program to allow school buses and

private fleets to participate. The District is currently in the process of obtaining District Board approval to allocate the remaining funds to school districts in the County.

Backup Generator Mitigation Funds

Backup Generator Mitigation Funds were a one-time allocation from the State to mitigate emissions from diesel-fueled electrical backup generators that were operated due to the State's electricity crisis. The funds were allocated to air districts in proportion to the amount of each district's subvention award.[1] Funds were expended in general accordance with the Carl Moyer Guidelines, although PM emission reductions were considered in addition to NOx emission reductions. As in the Carl Moyer Program, 50% of the funds were to be expended in Environmental Justice Areas.

The District made a special outreach effort and expended 100% of these funds in Environmental Justice Areas. Funded projects include repowering agricultural irrigation pumps, harbor tugs, gantry cranes, and construction forklifts, retrofitting on-road trucks with PM filters, and replacing older diesel school buses with cleaner diesels.

Congestion Mitigation and Air Quality Improvement Program

The Congestion Mitigation and Air Quality Improvement (CMAQ) Program was established by Congress in 1991 as part of the Intermodal Surface Transportation Efficiency Act (ISTEA). Subsequent versions of that legislation have retained the CMAQ Program. The purpose is to fund transportation projects or programs that will contribute to clean air attainment, such as transit improvements, high-occupancy vehicle (HOV) lanes, ridesharing services, and pedestrian and bicycle programs. CMAQ funds cannot be used for projects that increase the transportation system's capacity for single-occupant vehicles.

Federal CMAQ funds are allocated to states, and ultimately to local regions, based on population and air quality need. As the federally designated Metropolitan Planning Organization, the San Diego Association of Governments (SANDAG) is responsible for determining which local projects receive San Diego's share of CMAQ funding. The District has the same level of input to project selection as any other agency or individual during the public review process.

Lawn Mower Exchange Program

The District's Lawn Mower Exchange Program is an annual one-day, first-come first-served event for San Diego County residents. It allows County residents to exchange a working gasoline-powered lawn mower for a voucher to purchase a new non-polluting electric lawn mower at a substantially reduced price. The cordless rechargeable electric mower has a typical retail price of between $450 and $500. With the voucher, the price is reduced to $150. Participants purchase the new electric mower at the venue to take home. The gas-powered mowers are disposed at a metal recycling facility.

[1] ARB provides an annual subvention to each air district for use in administering the local air pollution control program, as required by State law (H&SC § 39802).

The Lawn Mower Exchange Program is funded by the District with penalties collected from violators of air quality requirements, with additional financial support provided by ARB. The program has been popular with the public and provides an innovative means to participate in an air quality improvement program. To date, the program has replaced over 2,000 gasoline-powered mowers with nonpolluting electric mowers in San Diego County.

IMPACT OF NO-NET-INCREASE PROGRAM REPEAL

Amendments to New Source Review Rules 20.1-20.4 were adopted on November 4, 1998, repealing State emission offset requirements as authorized by State law (Assembly Bill 3319, 1996 Statutes). Attachment II to this 2004 Triennial RAQS Revision contains a detailed reassessment and reaffirmation—prepared pursuant to State law and ARB guidance—that State emission offset requirements are not necessary in San Diego County.

CONCLUSION

Pursuant to State law, a revised control strategy must be at least as effective in improving air quality as the control strategy being replaced (H&SC Section 40925(b)). While two control measures originally scheduled in the 1998 RAQS have been deleted due to negligible emission reduction potential, eight control measures have been scheduled in this 2004 Triennial RAQS Revision for development and consideration of adoption during the 2004-2006 period. These eight measures will potentially provide approximately 3 tons/day and 2 tons/day additional reductions in VOC and NOx emissions, respectively. Consequently, the 2004 Triennial RAQS Revision will provide additional emission reductions relative to the 2001 RAQS and, therefore, is more effective in improving air quality.

ATTACHMENT I

CHARTS OF SITE-SPECIFIC OZONE EXPECTED PEAK DAY CONCENTRATIONS

Site-specific air quality trends at each of the six long-term monitoring sites are presented as charted year-to-year changes in the Expected Peak Day Concentration (EPDC), in Figures I-1 through I-6, on the following pages. The figures indicate ongoing improvement at all sites, with the most substantial improvement occurring since 1990. The charts present data back to the first year for which data are available for each site.

Figure I-1
Expected Peak Day Concentration
Alpine Monitoring Site

Figure I-2
Expected Peak Day Concentration
Chula Vista Monitoring Site

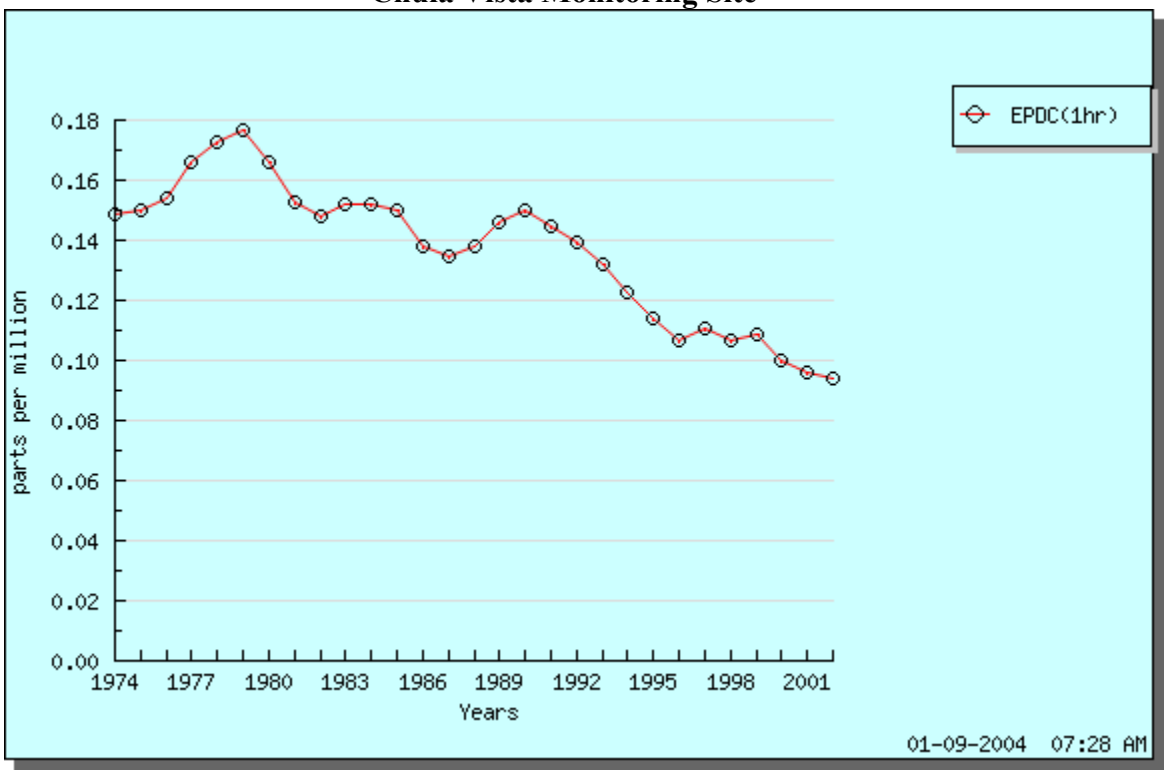


Figure I-3
Expected Peak Day Concentration
Del Mar Monitoring Site

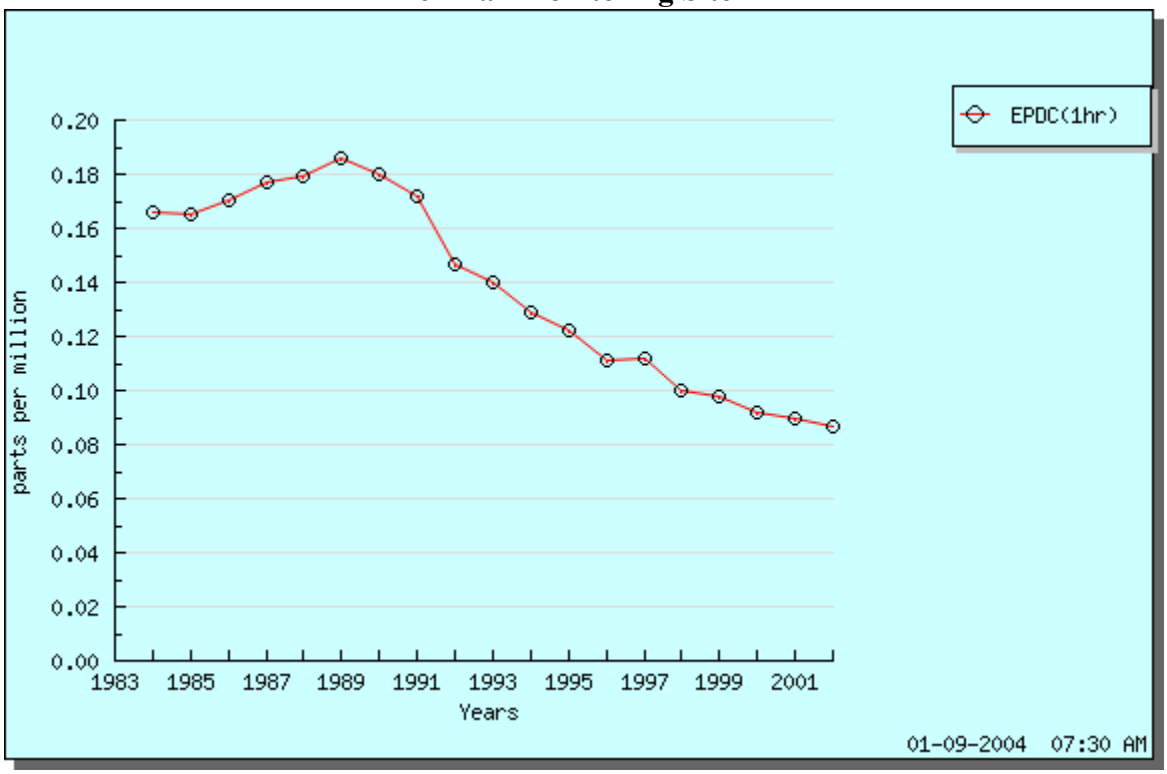


Figure I-4
Expected Peak Day Concentration
El Cajon Monitoring Site

Figure I-5
Expected Peak Day Concentration
Escondido Monitoring Site

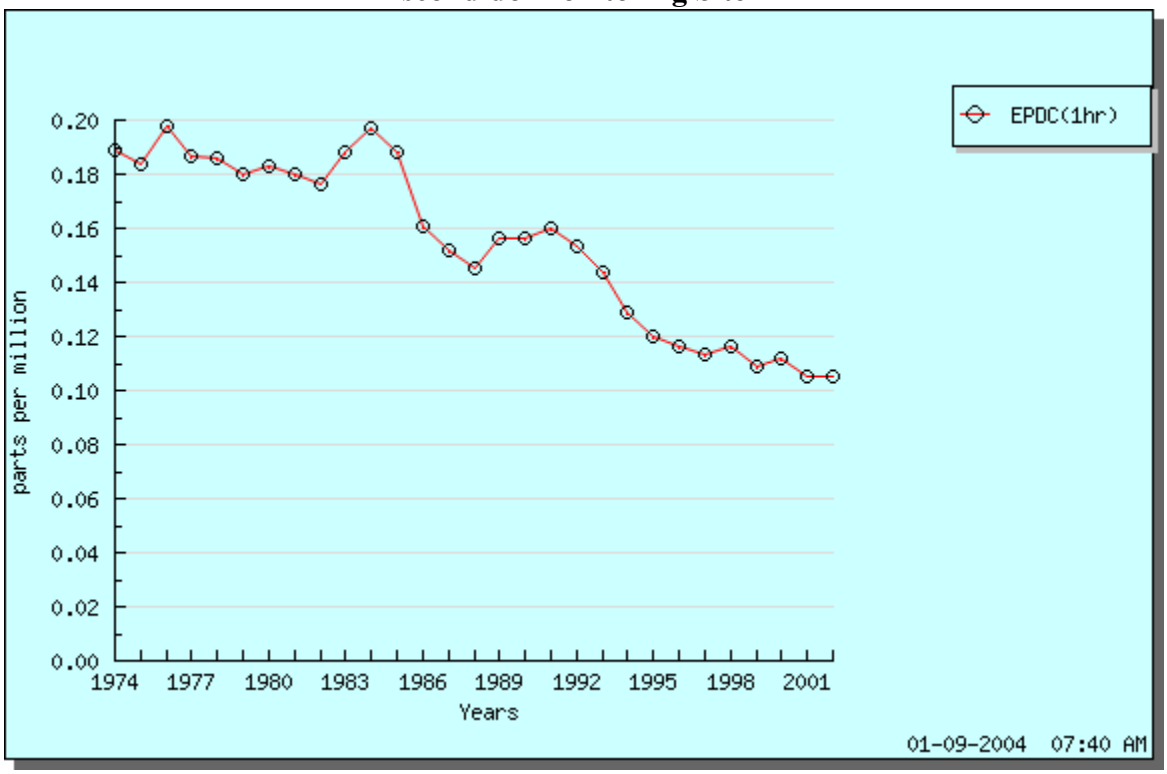
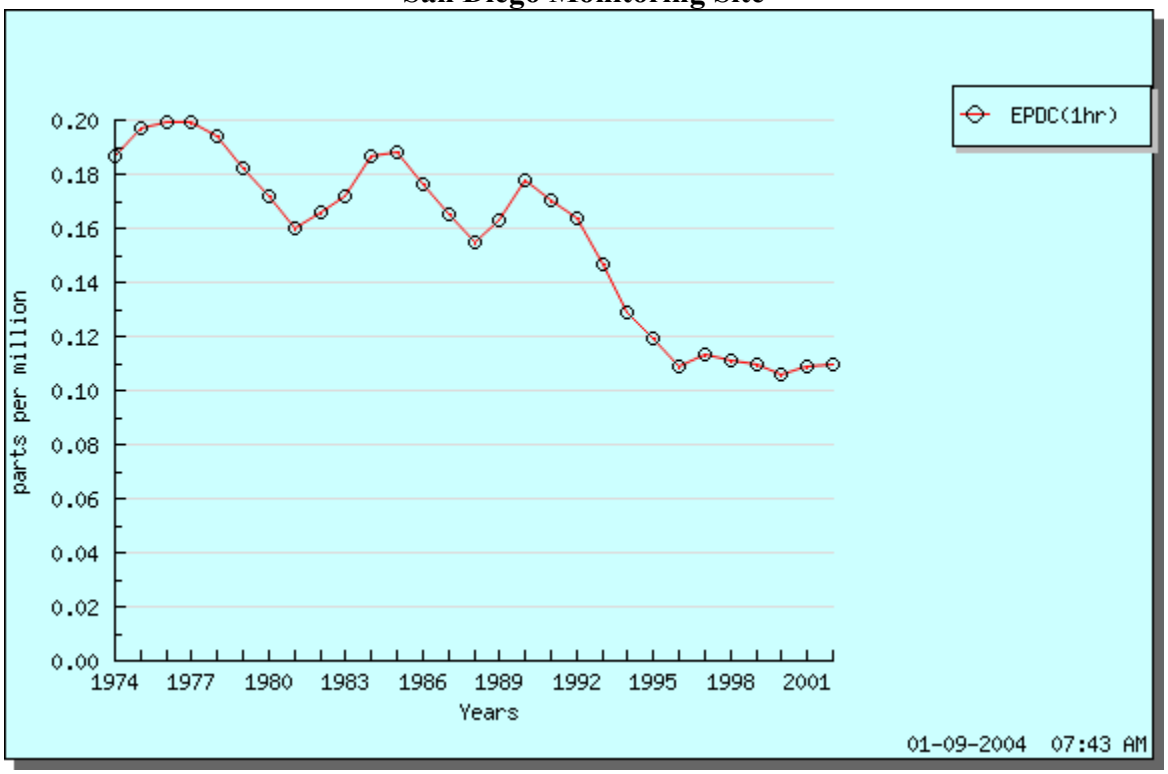


Figure I-6
Expected Peak Day Concentration
San Diego Monitoring Site



ATTACHMENT II

2004 TRIENNIAL ASSESSMENT OF THE IMPACT OF THE STATE NO-NET-INCREASE PROGRAM REPEAL

BACKGROUND

Amendments to New Source Review (NSR) Rules 20.1-20.4 were adopted on November 4, 1998, repealing State emission offset requirements as authorized by State law.[1] The offset requirements had applied to new or modified stationary sources in San Diego County with the potential to emit 15 tons or more per year of oxides of nitrogen (NOx) or volatile organic compounds (VOC), which are precursors to ozone formation. (Other provisions of NSR rules remain in effect.[2]) Offsets are emission reductions created by voluntary process modifications or by using more stringent emission controls than required on existing emission sources, or resulting from stationary sources that permanently curtail or cease emitting activities (shutdowns). In theory, if a new or modified source increases emissions after applying required emission controls, then offsetting the residual emission increases with emission reductions occurring elsewhere at the affected facility or at another facility in the region assures total emissions in the region do not increase. (Hence, State offset requirements are also known as the "no-net-increase" program.) Further, there is a market created for emission offsets, providing an incentive for businesses to voluntarily reduce emissions beyond regulatory requirements. The resulting emission reduction credits can then be sold to new or expanding facilities to satisfy emission offset requirements.

However, this theory has not been consistently realized in San Diego County. Businesses can use emission reductions as offsets only if the reductions are not otherwise required by federal, state, or local rules or mandates.[3] Creating voluntary, surplus emission reductions from emission controls is difficult because of stringent federal and State control requirements. Moreover, once cost-effective emission-reduction equipment or processes become available, State law requires control measures reflecting those advances be added to the District's air quality plan and developed into regulations.[4] Consequently, the majority of emission offsets in San Diego County have resulted from permanent facility or equipment shutdowns occurring as a normal course of business activity, not from voluntary process or emission control technology improvements.[5] Since the air quality benefits resulting from shutdowns occur independent of offset requirements, no additional air quality benefit is realized from emission offset

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[1] California Health and Safety Code (H&SC) Sections 40918.5 and 40918.6

[2] Remaining NSR provisions include state requirements for Best Available Control Technology (BACT) on equipment with potential to emit 10 pounds or more per day, and federal requirements to offset emission increases (at a 1.2-to-1 ratio) from new or modified facilities with potential to emit 50 tons or more per year of VOC or NOx.

[3] Eligible emission reductions are approved and recorded (banked) in an offset bank and tracked by the District.

[4] State law requires expeditious adoption of every feasible control measure, pursuant to H&SC 40914(b)(2).

[5] Use of permanent shutdowns or curtailments is a federally authorized source of emission offsets. See "Use of Shutdown Credits for Offsets," John Seitz, Director, Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, date unknown.

requirements in these cases. Thus, offset requirements have typically resulted in costly paper transfers of emission reduction credits from one company to another with little or no air quality benefit.

To address these problems and to streamline regulatory processes without compromising air quality, State law was amended in 1996 (Assembly Bill 3319) to allow an air district to repeal its State no-net-increase program if the district board and its oversight agency, the California Air Resources Board (ARB), meet stringent health-protective requirements. Before repealing its no-net-increase program, the district board must review an estimate of emissions growth, if any, that is likely to occur as a result of the repeal, and make the following findings:

- **All Feasible Measures**: The District Board must find that all feasible control measures for emission sources under District purview have been adopted or scheduled for consideration of adoption. The 2004 Triennial Revision of the Regional Air Quality Strategy addresses and satisfies this requirement. Consequently, it is not further addressed herein.

- **Transport Mitigation**: The District Board must find that the no-net-increase program is not necessary to comply with the ozone transport mitigation requirements of State law. Transport mitigation requirements do not apply to San Diego County, which is not identified in State law as an upwind source of transported air pollution. Consequently, transport mitigation requirements are not further addressed herein.

- **Expeditious Ozone Attainment**: The District Board must find that the no-net-increase program is not needed to attain and maintain the State ambient air quality standard for ozone by the earliest practicable date. This requirement is the primary focus of this 2004 assessment.

ARB must affirm the District Board's findings based on quantifiable and substantial evidence. Further, if a no-net increase program is repealed, the potential need for the program must be assessed triennially.[1]

ARB developed guidance setting forth the general basis for the required findings and triennial assessment.[2] A key criterion is ensuring program repeal does not significantly impact a projected trend of decreasing total ozone-precursor emissions in the region.[3] ARB subsequently issued an Executive Order specifying conditions for tracking and assessing emission increases associated with permitting actions that would have triggered State offset requirements if the no-net-increase program were still in place.[4]

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[1] This 2004 assessment is the second triennial review. The first triennial review was adopted by the District Board on August 8, 2001.

[2] "Air Resources Board Staff's Basis For A Determination That A District's No-Net-Increase Permitting Program Is Not Necessary Pursuant to Health and Safety Code §40918.5 and 40918.6" (October 31, 1997).

[3] Page 5 of the ARB guidance.

[4] ARB Executive Order G-97-007-02 (December 17, 1998).

As demonstrated in the foregoing analysis prepared pursuant to State law and ARB guidance, permanent facility or equipment shutdowns have continued apace since the repeal of the no-net-increase program, providing substantial emission benefits. But for a temporary upsurge in the permitting of electrical power projects due to the State's emergency efforts to increase electricity supply, average-annual permitted emission increases from sources that would have (or may have) triggered State offset requirements were fully compensated by average-annual actual emission reductions from unbanked shutdowns. Even considering the temporary upsurge in power projects, the no-net-increase program repeal has not significantly impacted the projected trend of decreasing total ozone-precursor emissions in San Diego County, nor is it anticipated to in the future. Therefore, pursuant to State law and ARB guidance, it is concluded that State no-net-increase requirements remain unnecessary in San Diego County to attain and maintain the State ambient air quality standard for ozone by the earliest practicable date.

TRACKING REQUIREMENTS

Pursuant to the ARB Executive Order, tracking requirements for assessing the emissions impact of the no-net-increase program repeal are:

- **Emission Increases**: Annual and cumulative increases of VOC and NOx emissions associated with permitting actions that would have (or may have) triggered State offset requirements if the no-net-increase program were still in place. This information is used to determine the amount of offsets foregone as a result of the no-net-increase program repeal.

- **Emission Decreases**: Annual and cumulative reductions of VOC and NOx emissions that resulted from permanent equipment shutdowns that have not been banked (pursuant to District Rules 26.0-26.10) as emission reduction credits in the District credit bank. This information is used to determine the level of emission reductions that have continued to occur (following the no-net-increase program repeal) from shutdowns, which historically are the primary source of emission offsets. To the extent shutdowns and associated emission benefits continue to occur, the potential air quality impact of the repeal is reduced or eliminated.

- **Details**: Tracking details include: (1) the year in which the emission increase or decrease occurred; (2) the source of the emission increase or decrease; (3) the nature of the emission change (e.g., the equipment type, whether it is a new or modified source, whether it is a permanent shutdown); (4) the amount of emission increase or decrease in tons/year; (5) the pollutant type; (6) the amount of offsets, if any, provided pursuant to federal requirements; (7) any adjustments to unbanked shutdowns that would be

necessary to qualify the associated reductions as offsets;[1] and (8) any other pertinent information agreed upon by the District and ARB as needed to assess the impact of the no-net-increase program repeal.

TRACKING RESULTS

The District instituted tracking procedures to identify and catalogue the required data for assessing the impact of the no-net-increase program repeal. The tracking information for this 2004 assessment (shown in Tables II-1 through II-5, beginning on page II-12) reflects the three-year period July 1, 2000, through June 30, 2003. Tracking information for earlier periods is reflected in the previous 1998 and 2001 assessments.

EMISSION INCREASES FROM 10-TON SOURCES

Table II-1 lists permitted and actual emission increases from affected sources for which the District issued permits during the three-year tracking period. Any offsets that were provided, such as to satisfy existing federal offset requirements, are also listed.

The listed increases occurred at sources with actual aggregate post-project emissions exceeding 10 tons/year of either VOC or NOx. As with the previous 1998 and 2001 assessments, 10 tons was used as a conservative indicator of sources with a potential to emit 15 tons/year, which is the threshold that would have triggered State offset requirements if the no-net-increase program were still in place.[2]

Temporary Growth in Electrical Power Projects. If the no-net-increase program were still in place, those projects identified in Table II-1 with a potential to emit 15 tons or more per year would have been required to provide offsets pursuant to State requirements. However, the exception is electrical power projects (Table II-2) initiated in response to the State's emergency efforts to increase electrical power.

On January 7, 2001, the Governor proclaimed a State of Emergency resulting from the imminent threat of widespread and prolonged disruption of electrical power. Shortly thereafter, the Governor issued a series of Executive Orders designed, in part, to remove potential obstacles to construction of electrical power projects. In response to the State of Emergency, numerous electrical power projects were implemented during the three-year tracking period, triggering an upsurge in permitted NOx emissions, particularly in year 2002. However, the State of Emergency has since passed and the rate of new power projects in San Diego County has returned to more typical levels.

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[1] Pursuant to Rule 26.0, Banking of Emission Reduction Credits, emission reductions from shutdowns for which credits are granted are discounted by the emission reductions that would have occurred had Reasonably Available Control Technology or Best Available Retrofit Control Technology requirements applied.

[2] In reality, many sources with actual emissions between 10 and 15 tons/year would not have been subject to State offset requirements because of permit conditions capping their potential to emit at 15 tons/year.

Pursuant to one of the Executive Orders from the Governor, in 2001 ARB provided 70 tons/year of NOx offsets to the District to help mitigate the emissions impact of peaking power plant projects and to help satisfy any associated offset requirements. The offsets provided by ARB were derived from real, surplus emission reductions created in the San Diego air basin by retrofitting and/or repowering diesel-fueled engines. However, the offsets are not reflected in the analysis herein because they were considered short-term, and because offset requirements were not triggered by the peaking power plant projects implemented in San Diego County during the three-year tracking period.

Separate Tracking of Electrical Power Projects. Because of the extraordinary circumstances pertaining to the State of Emergency and because the resulting rapid growth in the number of electrical power projects is not expected to continue, for purposes of the assessment herein ARB suggested conducting a separate accounting and evaluation of the emission increases due to new and expanding electrical power projects that were implemented during the tracking period.[1] Accordingly, Table II-2 identifies electrical power projects implemented during the tracking period, while Table II-3 duplicates Table II-1 (all permitted projects) but excludes the electrical power projects.

A More Representative Scenario. A close examination of electrical power projects (Table II-2) shows that actual emissions were far lower than permitted emission levels, reflecting the uncertainty and variability of the electricity market. Distortions in the energy market led to permitting of electrical generating equipment that has been scarcely used. For example, operating permits for two electrical power plants constructed during the State of Emergency—each permitted to emit 50 tons/year of NOx emissions—have since been rendered inactive by request of the owner and are no longer authorized to operate.

Table II-3—which excludes electrical power projects—is considered more representative of potential future emission impacts of the no-net-increase program repeal.[2] This is because rapid growth in the permitting of electrical power projects due to the State of Emergency has tapered and is not anticipated to continue, and because actual emissions from the electrical power projects have been a small fraction of their permitted levels.

EMISSION DECREASES FROM UNBANKED SHUTDOWNS

Table II-4 lists unbanked actual emission reductions from permanent facility or equipment shutdowns, adjusted where necessary for eligibility as emission offsets. The list is not exhaustive, given that additional shutdowns and associated emission reductions likely occurred,

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[1] Letter from Michael Kenny to Richard Sommerville, April 10, 2001.

[2] Two new base-load power plants (in Otay Mesa and Escondido) are planned for construction, designed to generate a total of 1,100 megawatts of electrical power. However, NOx and VOC emission offsets will be provided (at a 1.2-to-1 ratio) pursuant to federal requirements. Additionally, there is potential for future repowering or replacement of two existing base-load power plants (in Carlsbad and Chula Vista). It is anticipated that federal emission offset requirements would apply to these projects, as well.

particularly from smaller emission sources.[1] Regardless, as indicated in Table II-4, shutdowns and associated emission benefits continue to occur since the repeal of the no-net-increase program.

Table II-5 identifies the quantity and basis for the adjustments to the unbanked shutdowns that would be necessary to qualify the associated reductions for eligibility as emission offsets. Adjustments reduced the total NOx offset value by 5.67 tons/year and total VOC offset value by 0.51 ton/year.

NET EMISSIONS DIFFERENTIAL

Table II-6 combines information from Table II-1 (permitted emission increases from all projects) with information from Table II-4 (unbanked actual emission reductions) to show the resulting net emissions differential for each year during the 2000-2003 tracking period. Table II-6A presents the same information but using Table II-3, which excludes electrical power projects, as the basis for permitted emission increases. In addition to addressing the recent 2000-2003 tracking period, Tables II-6 and II-6A include information for years 1999-2000 (which were previously addressed in the 2001 assessment) in order to cumulatively address the entire period since the repeal of the no-net-increase program.

Consistent with expectations, the no-net-increase program repeal has not resulted in a significant increase in VOC emissions. Table II-6 indicates that, including electrical power projects, the average-annual net VOC emissions differential during the 2000-2003 tracking period was a VOC emissions decrease of 11.6 tons/year, and over the 4.5 years examined (January 1999 - June 2003) was a VOC emissions decrease of 12.4 tons/year. This net decrease resulted from unbanked actual emission reductions from shutdowns exceeding permitted emission increases from new sources, despite conservative assumptions. (As discussed previously, not all unbanked emission reductions from shutdowns were uncovered, and new sources affected by the no-net-increase program repeal were assumed to include sources with actual VOC emissions of between 10-15 tons/year, although many such sources would not have triggered State offset requirements.)

Table II-6 further indicates that, including electrical power projects, the average-annual net NOx emissions differential during the 2000-2003 tracking period was a NOx emissions increase of 96.0 tons/year. The 4.5-year trend indicates an average-annual NOx emissions increase of 64.5 tons/year. The net increase resulted from permitted emission increases from new sources exceeding unbanked actual emission reductions from shutdowns. However, as discussed previously, distortions in the energy market led to permitting of electrical generating equipment that has been scarcely used, and consequently actual NOx emission increases are a small fraction of permitted values. Further, not all unbanked emission reductions from shutdowns were

[1] Considerable effort is required to accurately quantify unbanked emission reductions from shutdowns, including making adjustments for eligibility as emission offsets. Consequently, likely not all unbanked emission reductions have been uncovered, particularly those from smaller sources.

uncovered, and affected new sources were conservatively assumed to include sources between 10-15 tons/year of NOx.

But for the temporary upsurge in electrical power projects constructed in response to the State of Emergency, unbanked actual emission reductions from shutdowns exceeded permitted emission increases from new or modified sources during the 2000-2003 tracking period. As shown in Table II-6A, excluding electrical power projects results in an average-annual VOC emissions decrease of 32.4 tons/year and an average-annual NOx emissions decrease of 10.2 tons/year. Moreover, the 4.5-year trend indicates an average-annual VOC emissions decrease of 27.8 tons/year, and an average-annual NOx emissions decrease of 6.2 tons/year.

BANK OF EMISSION CREDITS

Table II-7 is provided for informational purposes to indicate the origin of credits registered in the District's offset bank as of June 30, 2003. Previous trends hold—that is, permanent equipment or facility shutdowns remain the primary source of offsets rather than voluntary process or control technology improvements. Specifically, as indicated in Table II-7, 63.6% of NOx and 74.7% of VOC emission reduction credits registered in the offset bank as of June 30, 2003, were derived from shutdowns.

It is worth noting that the mobile source emission reduction credits (MERCs) identified in Table II-7 were created—at substantial cost to the applicant—to help satisfy federal offset requirements for the Otay Mesa Power Plant project. These MERCs were the first-ever in the nation to be approved by the U.S. Environmental Protection Agency (EPA) for use as offsets, following a rigorous and lengthy consultation process involving EPA, the District, ARB, and the applicant. Given the painstaking approval process and the considerable burden and expense of creating these MERCs, it is anticipated that MERCs would not be created in any considerable quantities to satisfy State offset requirements, if the no-net-increase program were still in place. Accordingly, if the banked MERCs are not considered for purposes of the assessment herein, then equipment or facility shutdowns account for 98.3% of banked NOx emission reduction credits.

REQUIRED COMPARISONS

The ARB Executive Order also requires five specific comparisons addressing emission impacts of the no-net-increase program repeal and the air basin emission inventories. The comparisons are designed to help evaluate whether the predicted minimal impacts of the repeal, projected into the future, continue to be minimal given updated emission inventory and tracking data.

1. CURRENT VERSUS PREVIOUS PROJECTIONS OF EMISSION IMPACTS

Tables II-8 and II-9 provide updated projections of annual and cumulative VOC and NOx emission impacts, respectively, of the no-net-increase program repeal, with and without

electrical power projects. The projections are compared with the modest emission increases conservatively projected in the District's 1998 assessment.

As shown in Table II-8, annual and cumulative VOC impacts exceed the originally projected "expected-case" impacts only in 2001, both including and excluding power projects. (The 2001 net VOC increase is due primarily to projects other than electrical power projects.) However, the actual and projected VOC impacts do not reach originally projected "worst-case" impacts in any year through 2020.

Table II-9 shows relatively minor NOx increases in all years examined except 2002, when there was a temporary upsurge in the permitting of power plants due to the State's emergency efforts to increase electricity supply. This temporary upsurge perturbated average-annual NOx emission values for the three-year tracking period, leading to a worst-case projected 2020 cumulative NOx emissions impact of 1429 tons/year.

This value exceeds the originally projected worst-case impact of 1200 tons/year. However, as discussed previously, a projected cumulative NOx impact that reflects continued substantial growth in the number of electrical power projects—based on the temporary upsurge that occurred in response to the State of Emergency—cannot be considered a reasonable expectation of future impacts. Power projects constructed during the tracking period have contributed relatively little to the actual emissions inventory. Further, the rapid growth in electrical power projects due to the State of Emergency has tapered and is not anticipated to continue. Therefore, the scenario that excludes electrical power projects—which results in a projected 2020 cumulative NOx emissions impact of 3.7 tons—is considered more representative of potential future emission impacts of the no-net-increase program repeal.

2. IMPACTS AS A PERCENTAGE OF ANNUAL TOTAL EMISSIONS

As shown in Table II-10, the VOC emissions impact of the no-net-increase program repeal was close to 0% of total annual permitted VOC emissions during the 2000-2003 tracking period. During all years examined, and for both scenarios, the net VOC impacts fall within the range of 0.06% to 0.08%, a negligible impact.

As shown in Table II-11, the cumulative NOx emissions impact of program repeal was below 1% of the total NOx inventory during the 2000-2003 tracking period. The projected future impact in 2020, based on the 4.5-year trend, is 3.55% including electrical power projects. However, as discussed previously, electrical power projects responsible for this projected impact are operating at a small fraction of permitted levels and are not anticipated to substantially increase the inventory of actual emissions. Excluding power projects—which results in a projected 2020 cumulative impact of 0.01% of the total NOx inventory—reflects a more realistic scenario.

These results indicate the impacts of the no-net-increase program repeal continue to constitute a negligible percentage of the total emission inventory. The program repeal will not significantly impact an existing trend of decreasing total regionwide emissions.

3. IMPACTS AS A PERCENTAGE OF ANNUAL STATIONARY-SOURCE EMISSIONS

As shown in Table II-12, the cumulative impact of the no-net-increase program repeal was approximately 0.25% of the total stationary-source VOC emissions inventories during the 2000-2003 tracking period, under both scenarios (both with and without electrical power projects). Given the projected future annual impact of zero VOC emissions, the cumulative percentage impact decreases each year through 2020, under both scenarios (both with and without electrical power projects).

As shown in Table II-13, the cumulative impact of the no-net-increase program repeal, including electrical power projects, reached a projected 7.95% of the total stationary-source NOx emissions inventory by 2003 (projected). Under this scenario (including electrical power projects), projected impacts would increase to 18.20% of the total stationary-source NOx emission inventory through 2020. However, as discussed previously, electrical power projects responsible for this projected impact are operating at a small fraction of permitted levels and are not anticipated to substantially increase the inventory of actual emissions. Excluding power projects—which results in a projected 2020 cumulative impact of 0.05% of the stationary-source NOx emissions inventory—reflects a more realistic scenario.

The projected future cumulative impact of no-net-increase repeal is expected to be a negligible percentage of the VOC and NOx stationary-source emissions inventories through 2020. Temporary emission increases could occur, but are not expected to constitute a significant percentage of the stationary-source inventory, nor significantly impact the projected trend of decreasing total emissions. Further, emission increases would be subject to federal offset requirements if specified emission thresholds are exceeded.

4. CURRENT VERSUS PREVIOUS PROJECTIONS OF PERCENTAGE IMPACTS

Percent of Total Emissions. Tables II-14 and II-15 compare the originally projected worst-case and expected-case impacts of program repeal (as identified in the 1998 assessment) with actual 1998-2002 data and with an update of projected future-year impacts. The worst-case VOC and NOx increases previously projected for future years did not materialize, as emission increases were mostly compensated by unbanked emission reductions. However, the impacts that did occur met or exceeded the original expected case impacts (with the exception of NOx impacts excluding power projects), but did not reach the originally projected worst-case impacts. If power projects are included, then projected future NOx impacts exceed the originally projected worst-case scenario. However, as discussed previously, a projected cumulative NOx impact that reflects continued substantial growth in the number of electrical power projects—based on the temporary upsurge that occurred in response to the State of Emergency—cannot be considered a reasonable expectation of future impacts.

Percent of Stationary-Source Emissions. Tables II-16 and II-17 indicate similar results in comparing original and updated projections of no-net-increase program repeal impacts expressed as a percentage of stationary-source inventories. Originally projected worst-case VOC and NOx

emission impacts did not materialize in any year examined, even including the impact of power projects. Although modest, projected VOC emission impacts (both with and with out power projects) do slightly exceed the originally projected expected-case impacts. Further, if power projects are included, the projected cumulative NOx impacts exceed originally projected expected-case impacts. However, as discussed previously, excluding power projects reflects a more realistic scenario. In this case, projected cumulative NOx impacts fall below the original expected-case impacts.

5. CURRENT VERSUS PREVIOUS EMISSIONS INVENTORIES AND PROJECTIONS

Tables II-18 through II-21 compare updated VOC and NOx emissions inventories and inventory projections with those used in the original 1998 assessment. The most recent data provided by ARB indicate mobile source emissions, both current and future, are higher than previously estimated. Nevertheless, the total inventory continues to reflect substantial future decreases in emissions, due primarily to anticipated reductions in mobile source emissions. Moreover, conclusions of the previous 1998 and 2001 assessments hold true; though not expected, even sizable emission impacts of the no-net-increase program repeal would not significantly impact the trend of decreasing total emissions in the region.

CONCLUSION

As demonstrated in the preceding analysis prepared pursuant to State law and ARB guidance, permanent facility or equipment shutdowns have continued apace since the repeal of the no-net-increase program, providing substantial emission benefits. But for a temporary upsurge in the permitting of electrical power projects due to the State's emergency efforts to increase electricity supply, average-annual permitted emission increases from sources that would have (or may have) triggered State offset requirements were fully compensated by average-annual actual emission reductions from unbanked shutdowns. Even considering the temporary upsurge in power projects, the no-net-increase program repeal has not significantly impacted the projected trend of decreasing total ozone-precursor emissions in San Diego County, nor is it anticipated to in the future. Additionally, all feasible control measures under District purview have been adopted or scheduled for consideration of adoption, and the no-net-increase program is not necessary to comply with the ozone transport mitigation requirements of State law. Therefore, pursuant to State law and ARB guidance, it is concluded that State emission offset requirements remain unnecessary in San Diego County to attain and maintain the State ambient air quality standard for ozone by the earliest practicable date.

Table II-1
Emission Increases and Offsets Provided From Sources With Actual Aggregate Post-Project Emissions Exceeding 10 Tons/Year of VOC or NOx
Including Electrical Power Projects[1]
July 1, 2000 – June 30, 2003
(Tons/Year)

Name	Application Description	VOC Increase		NOx Increase		Offsets Provided (Pollutant)
		Permitted	Actual	Permitted	Actual	
Bardon Enterprises	Increase material usage lvl	25.7	17.9	0	0	--
Grossmont Dist. Hospital	Cold solvent dip tank	1.8	0.1	0	0	--
	2000 (July – Dec) Totals:	**27.5**	**18.0**	**0**	**0**	--
Artifacts International	Wood products coating controls	5.0	2.0	0.0	0.0	--
Artifacts International	Wood products coating operation	11.8	6.0	0.0	0.0	--
Bimbo Bakeries USA	Bakery oven controls	15.0	3.6	0.0	0.0	--
Dimension One Spas	Modification PO #40501	15.0	2.9	0.0	0.0	--
GKN Aerospace Chemtronics Inc	Change to Permit 941146 condition 9	2.0	0.5	2.0	0.5	--
Lockheed Eng & Sciences	Spray paint outside booth	5.0	0.0	0.0	0.0	--
Nat'l Steel & Shipbuilding	Open air plasma cutter & exhaust	0.0	0.0	3.0	3.0	--
Otay Mesa Generating[2]	*Power generating station*	*0.0*	*0.0*	*0.0*	*0.0*	
Rohr Inc	Replace air agitate with mechanical agitate	1.2	1.2	0.0	0.0	--
Rohr Inc	Replace air agitate w/ mech ag.	3.4	1.0	0.0	0.0	--
Rohr Inc	Alkaline chemical milling	7.5	7.5	0.0	0.0	--
Rohr Inc	Alkaline chemical milling	2.3	0.9	0.0	0.0	--
SD State University	Adhesive application station	5.0	0.2	0.0	0.0	--
SFPP LP	Soil vapor extraction unit	15.0	12.6	0.0	0.0	--
Southwest Marine Inc	Adhesive materials application operations	2.1	2.1	0.0	0.0	--
Southwest Marine Inc	Change VOC limits	2.0	2.0	0.0	0.0	--
UCSD	*Additional turbine*	*1.4*	*0.2*	*5.6*	*1.1*	--
UCSD	*Additional turbine*	*1.4*	*0.3*	*5.6*	*0.8*	--
US Navy Public Works Center	Add passive vent of avgas contaminated soil	11.0	7.3	0.0	0.0	--
USN Air Station Noris Bldg 73	Revise conditions to add material (Rule 1200)	11.0	7.3	0.0	0.0	--
Walker Wood Products Inc	Wood parts/products ap. station	7.2	6.4	0.0	0.0	--

Name	Application Description	VOC Increase		NOx Increase		Offsets Provided (Pollutant)
		Permitted	Actual	Permitted	Actual	
2001 Totals:		**124.2**	**64.0**	**16.2**	**5.4**	
Caldera Spas	Wood parts application station	7.3	6.0	0.0	0.0	--
Caldera Spas	Wood parts application station	7.3	6.0	0.0	0.0	--
Calpeak Power Border	*2 gas turbines for power gen*	*5.2*	*0.3*	*18.1*	*2.5*	--
Calpeak Power Border	*Condition change to NOx emissions*	*0.0*	*0.0*	*13.0*	*0.0*	--
Calpeak Power El Cajon	*2 gas turbines*	*5.2*	*0.2*	*18.1*	*1.5*	--
Calpeak Power El Cajon	*Condition change to NOx emissions*	*0.0*	*0.0*	*13.0*	*0.0*	--
Calpeak Power Enterprise LLC	*2 gas turbines for power gen*	*5.2*	*0.3*	*18.1*	*2.3*	--
Calpeak Power Enterprise LLC	*Condition change to NOx emissions*	*0.0*	*0.0*	*13.0*	*0.0*	--
Dimension One Spas	Application station	0.5	0.5	0.0	0.0	--
Dimension One Spas	Condition change	3.0	3.0	0.0	0.0	--
GKN Aerospace Chemtronics Inc	Cold solvent dip tank	1.7	0.9	0.0	0.0	--
GKN Aerospace Chemtronics Inc	Solvent wipe cleaning operations	9.5	9.5	0.0	0.0	--
Koch Membrane Systems	Membrane coater	16.5	10.6	0.0	0.0	--
Koch Membrane Systems	Modification to PO 951124	1.2	1.2	0.0	0.0	--
Koch Membrane Systems	Increase operating speed	0.3	0.0	0.0	0.0	--
Koch Membrane Systems	Increase operating speed	0.3	0.0	0.0	0.0	--
Nat'l Steel & Shipbuilding	IC engine, diesel	1.0	1.0	1.5	1.5	--
Nat'l Steel & Shipbuilding	IC engine, diesel crane	1.0	1.0	1.5	1.5	--
PG&E Dispersed (Chula Vista) [3]	*Power generating station*	*7.2*	*0.2*	*49.9*	*1.4*	--
PG&E Dispersed (Escondido)[3]	*Power generating station*	*7.2*	*0.2*	*49.9*	*1.3*	--
SDSU	*Additional turbine*	*0.7*	*0.4*	*20.3*	*10.6*	--
SDSU	*Additional turbine*	*0.7*	*0.2*	*20.3*	*6.0*	--
Wildflower (Larkspur)	*Power generating station*	*4.1*	*0.4*	*49.9*	*3.4*	--
2002 Totals:		**85.1**	**42.9**	**286.6**	**32.0**	--
Callaway Golf Co	Coating & adhesive ap. stations	23.5	20.1	0.0	0.0	--
Encina Power Plant	Replace engine	0.0	0.0	0.2	0.2	--
Millbrook Baking Co	New boiler	0.0	0.0	1.0	1.0	--
Pt Loma Wastewater Treat Plant	*Egen to non egen*	*0.2*	*0.2*	*5.7*	*5.7*	--
Rohr Inc	*IC engine, cogeneration*	*10.2*	*0.4*	*6.0*	*3.5*	--

Name	Application Description	VOC Increase		NOx Increase		Offsets Provided (Pollutant)
		Permitted	Actual	Permitted	Actual	
Rohr Inc	*IC engine, cogeneration*	*10.2*	*0.4*	*6.0*	*4.2*	--
Rohr Inc	*IC engine, cogeneration*	*10.2*	*0.4*	*6.0*	*4.6*	--
USN Air Station Noris	Cold solvent degreaser	1.2	0.4	0.0	0.0	--
USN Air Station Noris Bldg 73	Coating equip & adhesive applications	25.6	8.6	0.0	0.0	--
2003 (Jan – Jun) Totals:		**81.1**	**30.4**	**24.7**	**19.1**	--
3-YEAR TOTALS:		**317.9**	**155.3**	**327.5**	**56.5**	**0.0**

[1]Electrical power projects are shown in *italics*.

[2]The Otay Mesa Power Plant has not been constructed (to date) and therefore has not received an operating permit. A portion of the NOx offsets previously approved for this project has been implemented (i.e., the emission reductions have already been created), specifically 78.6 tons/year of Mobile Emission Reduction Credits. However, the offsets have not been surrendered to the District because the power plant project has not been constructed.

[3]Construction completed, but the operating permit has been rendered inactive ("Not To Operate") by request of the facility owner due to lower-than-anticipated electricity demand. Future operation and associated emissions are not anticipated at this time.

Table II-2
Permitted and Actual Emission Increases and Offsets from Electrical Power Projects
July 1, 2000 – June 30, 2003[1]
(Tons/Year)

Name	Application Description	VOC Increase		NOx Increase		Offsets Provided (Pollutant)
		Permitted	Actual	Permitted	Actual	
Calpeak Power Border	2 gas turbines for power generation	5.2	0.3	18.1	2.5	--
Calpeak Power Border	Condition change to NOx emissions	0.0	0.0	13.6	0.0	--
Calpeak Power El Cajon	2 gas turbines for power generation	5.2	0.2	18.1	1.5	--
Calpeak Power El Cajon	Condition change to NOx emissions	0.0	0.0	13.6	0.0	--
Calpeak Power Enterprise	2 gas turbines for power	5.2	0.3	18.1	2.3	--
Calpeak Power Enterprise	Condition change to NOx emissions	0.0	0.0	13.6	0.0	--
Otay Mesa[2]	Power generating station	0.0	0.0	0.0	0.0	
PG&E Dispersed (Chula Vista) [3]	Power generating station	7.2	0.2	49.9	1.4	--
PG&E Dispersed (Escondido)[3]	Power generating station	7.2	0.2	49.9	1.3	--
Pt Loma Wastewater Treatment Plant	Emergency generator to peak power generator	0.2	0.2	5.7	5.7	--
Rohr Inc	IC engine, cogeneration	10.2	0.4	6.0	3.5	--
Rohr Inc	IC engine, cogeneration	10.2	0.4	6.0	4.2	--
Rohr Inc	IC engine, cogeneration	10.2	0.4	6.0	4.6	--
SDSU	Additional turbine	0.7	0.4	20.3	10.6	--
SDSU	Additional turbine	0.7	0.2	20.3	6.0	--
UCSD	Additional turbine	1.4	0.2	5.6	1.1	--
UCSD	Additional turbine	1.4	0.3	5.6	0.8	--
Wildflower-Larkspur	Power generating station	4.1	0.4	49.9	3.4	--
	Totals:	**69.1**	**4.1**	**320.3**	**48.9**	**0.0**

[1]All projects occurred during January 2002-June 2003.

[2]The Otay Mesa Power Plant has not been constructed (to date) and therefore has not received an operating permit. A portion of the NOx offsets previously approved for this project has been implemented (i.e., the emission reductions have already been created), specifically 78.6 tons/year of Mobile Emission Reduction Credits. However, the offsets have not been surrendered to the District because the power plant project has not been constructed.

[3]Construction completed, but the operating permit has been rendered inactive ("Not To Operate") by request of the facility owner due to lower-than-anticipated electricity demand. Future operation and associated emissions are not anticipated at this time.

Table II-3
Emission Increases and Offsets Provided From Sources With Actual Aggregate Post-Project Emissions Exceeding 10 Tons/Year of VOC or NOx
Excluding Electrical Power Projects
July 1, 2000 – June 30, 2003
(Tons/Year)

Name	Application Description	VOC Increase		NOx Increase		Offsets Provided (Pollutant)
		Permitted	Actual	Permitted	Actual	
Bardon Enterprises	Increase material usage lvl	25.7	17.9	0.0	0.0	--
Grossmont Dist. Hospital	Cold solvent dip tank	1.8	0.1	0.0	0.0	--
2000 (July – Dec) Totals:		**27.5**	**18.0**	**0.0**	**0.0**	--
Artifacts International	Wood products coating controls	5.0	2.0	0.0	0.0	--
Artifacts International	Wood products coating operation	11.8	6.0	0.0	0.0	--
Bimbo Bakeries USA	Bakery oven controls	15.0	3.6	0.0	0.0	--
Dimension One Spas	Modification PO #40501	15.0	2.9	0.0	0.0	--
GKN Aerospace Chemtronics Inc	Change to Permit 941146 condition 9	2.0	0.5	2.0	0.5	--
Lockheed Eng & Sciences	Spray paint outside booth	5.0	0.0	0.0	0.0	--
Nat'l Steel & Shipbuilding	Open air plasma cutter & exhaust	0.0	0.0	3.0	3.0	--
Rohr Inc	Replace air agitate with mechanical agitate	1.2	1.2	0.0	0.0	--
Rohr Inc	Replace air agitate w/ mech ag.	3.4	1.0	0.0	0.0	--
Rohr Inc	Alkaline chemical milling	7.5	7.5	0.0	0.0	--
Rohr Inc	Alkaline chemical milling	2.3	0.9	0.0	0.0	--
SD State University	Adhesive application station	5.0	0.2	0.0	0.0	--
SFPP LP	Soil vapor extraction unit	15.0	12.6	0.0	0.0	--
Southwest Marine Inc	Adhesive materials application operations	2.1	2.1	0.0	0.0	--
Southwest Marine Inc	Change VOC limits	2.0	2.0	0.0	0.0	--
US Navy Public Works Ctr	Add passive vent of avgas contaminated soil	11.0	7.3	0.0	0.0	--
USN Air Station Noris Bldg 73	Revise conduits to add material (Rule 1200)	11.0	7.3	0.0	0.0	--
Walker Wood Products Inc	Wood parts/products ap. station	7.2	6.4	0.0	0.0	--
2001 Totals:		**121.5**	**63.5**	**5.0**	**3.5**	--
Caldera Spas	Wood parts application station	7.3	6.0	0.0	0.0	--
Caldera Spas	Wood parts application station	7.3	6.0	0.0	0.0	--

Name	Application Description	VOC Increase		NOx Increase		Offsets Provided (Pollutant)
		Permitted	Actual	Permitted	Actual	
Dimension One Spas	Application station	0.5	0.5	0.0	0.0	--
Dimension One Spas	Condition change	3.0	3.0	0.0	0.0	--
GKN Aerospace Chemtronics Inc	Cold solvent dip tank	1.7	0.9	0.0	0.0	--
GKN Aerospace Chemtronics Inc	Solvent wipe cleaning operations	9.5	9.5	0.0	0.0	--
Koch Membrane Systems	Membrane coater	16.5	10.6	0.0	0.0	--
Koch Membrane Systems	Modification to PO 951124	1.2	1.2	0.0	0.0	--
Koch Membrane Systems	Increase operating speed	0.3	0.0	0.0	0.0	--
Koch Membrane Systems	Increase operating speed	0.3	0.0	0.0	0.0	--
Nat'l Steel & Shipbuilding	IC engine, diesel	1.0	1.0	1.5	1.5	--
Nat'l Steel & Shipbuilding	IC engine, diesel crane	1.0	1.0	1.5	1.5	--
2002 Totals:		**49.6**	**39.7**	**3.0**	**3.0**	--
Callaway Golf Co	Coating & adhesive ap. stations	23.5	20.1	0.0	0.0	--
Encina Power Plant	Replace engine	0.0	0.0	0.2	0.2	--
Millbrook Baking Co	New boiler	0.0	0.0	1.0	1.0	--
USN Air Station Noris	Cold solvent degreaser	1.2	0.4	0.0	0.0	--
USN Air Station Noris Bldg 73	Coating equip & adhesive applications	25.6	8.6	0.0	0.0	--
2003 (Jan – Jun) Totals:		**50.3**	**29.1**	**1.2**	**1.2**	--
3-YEAR TOTALS:		**248.9**	**150.3**	**9.2**	**7.7**	**0.0**

Table II-4
Unbanked Actual VOC and NOx Emission Reductions from Equipment and Facility Shutdowns[1]
July 1, 2000 – June 30, 2003
(Tons/Year)

Name	Equipment Description	Adjusted Emission Reductions[2]	
		VOC	NOx
Advanced Packaging Concepts	Ceramic Mfg Line	1.2	--
Advanced Web Offset Inc	Graphic Arts Printing Operation	0.5	--
Armor Safe Corp	Three Paint Spray Booths	1.8	--
Cold Solvent Degreasers	11 Cold Solvent Degreasers	4.4	--
D&L Custom Builders	Wood Products Paint Spray Booth	0.1	--
Dutra Construction Co Inc	Dredging Barge IC Engine	0.1	1.5
Environmental Crushing & Materials	Portable IC Engine	0.0	3.2
Fallbrook Refuse Service	Metal Parts Coating Ap. Station	0.3	--
Finest City Cabinets	Adhesive Application Station	0.1	--
Golden State Graphics	Flexographic Printing Press	0.2	--
Hinckley & Schmitt Inc	Metal Parts Spray Booth	0.4	--
Jeffs Decorative Finishes	Wood Products Coating Application	0.1	--
Kafana Inc Roasters	Coffee Roaster	--	0.1
Lithographix Inc	Graphic Arts Printing Operation	0.9	--
Lithographix Inc	Graphic Arts Printing Operation	0.9	--
Lithographix Inc	Graphic Arts Printing Operation	0.9	--
Lithographix Inc	Graphic Arts Printing Operation	0.9	--
Lithographix Inc	Graphic Arts Printing Operation	0.2	--
Matsushita Television Co	Wood & Metal Parts Coating Applica.	0.5	--
Partner Press Llc	Lithographic Printing Machine	0.5	--
PTI Advanced Filtration Inc.	Membrane Casting Operation	0.3	--
PTI Advanced Filtration Inc.	Membrane Coating Operation	0.0	--
Quebecor World Graphica East	Press	2.7	--
Remote Reservoir Cleaners	26 Remote Reservoirs	10.4	--
Soil Remediation Sites	2 Soil Remediation Systems	0.4	--
Staite R E Engineering Inc	Diesel Engine	0.3	3.0
Stanco Furniture Co	Wood Coating Application Operation	0.5	--
Unifiber	Composite mfg operation	7.3	0.2
Unifiber	Metal Coating Application Station	1.6	0.1
USN Nav Sta 2 Public Works Ctr	Diesel-fueled Air Compressor	0.0	0.2
Vending Security Cages & Equip.	Metal Security Cage Coating Operation	0.9	--
Waterfall Oasis Inc	Surface Coating Application Area	2.0	--
Western Wood Supply	Wood Products Coating Application	0.9	--

Name	Equipment Description	Adjusted Emission Reductions[2]	
		VOC	NOx
Worldwide Flight Services Inc	Diesel Engine	0.0	0.3
	2000 (Jul – Dec) Totals:	**41.1**	**8.5**
A Action Welding Inc	Metal Coating Process	0.6	--
Agri Service	Forced Feed Green Waste Grinder-	0.2	2.7
Airline Interiors	Adhesive Application Operation	0.6	--
Airline Interiors	Adhesive Application Operation	0.0	--
Airline Interiors	Adhesive Coating Operation	0.0	--
Amity Works	Wood Products Coating Operation	0.0	--
Cabinet Factory	Paint Spray Booth	1.9	--
Cold Solvent Degreasers	10 Cold Solvent Degreasers	4.0	--
Envirecycle Ink Recovery Ltd	Mobile Ink Reclamation System	0.3	--
Fujikura Composite America Inc	Graphite Coating Station	0.4	--
Fujikura Composite America Inc	Non-Permitted Emissions	0.0	--
Hydranautics	Membrane Manufacturing Line	0.4	--
Hydranautics	Membrane Manufacturing Line	0.2	--
J9 Design	Adhesive Application Station	0.3	--
J9 Design	Wood Products Coating Station	0.0	--
Kitchens & Baths by N Cnty Plastic	Adhesive Application Station:	--	0.1
Ladd Roy E Inc	Rock Drill	0.1	4.3
Pacific Steel Inc	Diesel Engine	--	0.2
Power Plus Corp	Metal Coating Station	0.1	--
Pt Loma Wastewater Treat. Plant	Water Boiler	0.0	0.6
Pt Loma Wastewater Treat. Plant	Water Boiler	0.0	0.5
Quebecor World Graphica East	Graphic Arts Printing Operation	2.7	--
Quebecor World Graphica East	Color printing operation	2.7	--
Ramcor Steel Products	Paint Spray Operation	0.3	--
Remote Reservoir Cleaners	131 Remote Reservoirs	52.4	--
Revenge Racing Bodies	Polyester Resin Application Station	0.4	--
Scripps Mercy Hospital	Boiler	0.1	2.4
Soil Remediation Sites	7 Soil Remediation Systems	1.4	--
Sparta Inc	Aerospace Coating Station	0.1	--
Stone House Furniture	Wood Coating Operation	0.6	--
Thorpe Environmental Services	Mastic Removal Operation	0.3	--
Toppan Electronics Inc	Circuit Board Screen Printing Op.	3.0	--
University Mechanical	Metal Coating Process	0.0	--
University Mechanical	Adhesive Coating Operation	0.0	--
USNavy Naval Station 1 SCE	Engine	0.0	0.0
World Transport Authority Inc	Polyester Resin Operation	0.5	--
	2001 Totals:	**73.8**	**10.7**
Advanced Fiberglass	Application Spray Booth	0.3	--

Name	Equipment Description	Adjusted Emission Reductions[2]	
		VOC	NOx
Advanco Constructors Div Of Zurn	Diesel Engine Pump Set	--	0.5
Air Products & Chemicals Inc	Wood Coating Process	0.0	--
Anacomp Inc	Metal Coating Operation	0.1	--
Arts & Crafts Press	Graphics Arts Operation	1.1	--
Aspire Furniture	Wood Coating Application Station	0.7	--
Aspire Furniture	Metal Coating Operation	0.0	--
Battelle	Gasoline Contam. Soil Remed. System	0.2	0.1
BF Goodrich Aerospace Humphrey	Vapor Degreaser	0.1	--
BF Goodrich Aerospace Humphrey	Vapor Degreaser	0.1	--
Bordeaux Printers Inc	Graphic Arts Operation	0.0	--
California Clean Green	Diesel Engine	0.1	0.6
Cold Solvent Degreasers	12 Cold Solvent Degreasers	4.8	--
Conklin Litho Inc	5-Color Letterpress	0.9	--
CP Kelco U.S., Inc.	Boiler	0.1	1.0
CPS Printing	Graphic Arts Printing Operation	0.1	--
Driessen Aircraft Interior Sys Inc	Surface Coating & Auto Refinish Ap.	0.8	--
Focus 21 International Inc	Healthcare Products Mfg	1.1	--
Freedom Finishing	Industrial Coating Application Station	1.1	--
Freedom Finishing	Surface Coating Application Station	0.5	--
Fujikura Composite America Inc	Graphite Manufacturing & Finish. Op	0.1	0.5
Greystone Sash & Door Inc	Wood Coating Application Operation	0.1	--
Hanson Aggregates Pacific SW Inc	Hot Mix Asphalt Plant	0.3	1.2
Hanson Aggregates Pacific SW Inc	Hot Mix Asphalt Plant	0.1	0.3
Heritage Design	Wood Finishing Operation Station	0.1	--
Hernandez Tire & Radiator	Metal Coating Application Station	0.0	--
Idec Inc	Emergency Generator Engine	0.0	0.3
Integrated Airline Services	Diesel Engine	--	0.1
Johanson Dielectrics Inc	Special Casting Machine	1.7	--
Joor Mfg Inc	Fiberglass/Plastic Tank Mfg	6.6	--
Joor Mfg Inc	Metal Coating Operation	1.1	--
Kettner Radiator Shop	Metal Parts Coating Station	0.0	--
Kitchen Center The Inc	Adhesive Material Operation	0.1	--
Koala Arts Inc	Silk Screen Printing	0.9	--
Kollmorgen Magnedyne	Vapor Degreaser	1.5	--
Kollmorgen Magnedyne	Metal/Aerospace Coating Operation	1.1	--
L-3 Communications	Cold Solvent Degreaser	0.0	--
L-3 Communications	Cold Solvent Degreaser	0.0	--
Ledezma Iron Works	Metal Coating Application Station	0.3	--
Loctite Corporation	Electronic Paste Mfg & Testing Line	0.3	--
Lopardo Manufacturing Inc	Metal Coating Application Station	0.5	--

Name	Equipment Description	Adjusted Emission Reductions[2]	
		VOC	NOx
Malecek Cabinet Inc	Wood Coating Application Station	1.5	--
Napp Systems Inc	Coil Coating Line	0.0	--
Neontech	Glass Coating Application Station	0.1	--
Phase Nine	Wood & Adhesive Coating Operation	0.1	--
Ramona Landfill Inc	Landfill Operation	1.3	--
Reliable Waste Inc	Metal Coating Application Station	0.0	--
Remote Reservoir Cleaners	223 Remote Reservoirs	89.2	--
Rohr Inc	Aerospace Coating Station	0.0	--
Skellerup Oiles Seismic Protection	Adhesive Application Station	0.3	--
Soil Remediation Sites	12 Soil Remediation Systems	2.4	--
Solar Turbines Inc	Metal Inspection Operation	0.5	--
Southern California Edison	Diesel Engine	--	0.0
Southwest Airlines Co	Diesel Ground Power Unit	0.0	0.3
Tyco Electronics Power Systems	Surface Mount Manufacturing Op.	0.1	--
US Army Corps Of Engineers	Two Dredge Pump Engines:	0.3	8.1
USD	IC Reciprocating Engine, Cogeneration	0.1	2.9
USD	IC Recip.Engine, Cogeneration	0.1	1.0
USD	IC Recip. Engine, Cogeneration	0.1	0.6
USMC Base Marine Ground Ops	Industrial Paint Application Station	0.9	--
Valley Detroit Diesel Allison	7 Remote Reservoir Cleaners	0.7	--
Wheaton Tile & Marble	Adhesive Application Station	0.1	--
	2002 Totals:	**124.1**	**17.5**
Abbey Party Rents	Wood Coating Application Station	0.5	--
Air Tech Streamlining	Polyester Resin Operation	0.5	--
All Things Wooden	Wood Coating Application Process	0.3	--
Bigger Than Life Inc	Graphic Art Operation	0.3	--
City of SD Env. Services Depart.	Metal Coating Station	0.3	--
City of SD Env. Services Depart.	Metal Coating Station	0.3	--
Cold Solvent Degreasers	8 Cold Solvent Degreasers	3.2	--
Comtel San Diego	Metal Coating Operation	1.1	--
Comtel San Diego	Metal Coating Operation	1.1	--
Comtel San Diego	Unspecified	0.4	--
Comtel San Diego	Metal Coating Operation	0.3	--
Conklin Litho Inc	Graphic Arts Operation	0.2	--
Couvrette Building Systems	Metal Coating Operation	0.1	--
Darrow Painting Inc	Paint Stripping Tank	0.1	--
Deluxe Radiator Service	Metal Coating Application Station	0.0	--
DJ Orthopedics LLC	Adhesive Coating Application Station	0.2	--
Driessen	Fiberglass Coating Application Station	0.1	--
Driessen	Adhesive Application Station	0.1	--

Name	Equipment Description	Adjusted Emission Reductions[2]	
		VOC	NOx
Eco Building System	Adhesive Application Station	5.0	--
Eco Building System	Wood Coating Application Process	4.0	--
Eco Building System	Metal Coating Process	2.7	--
Eco Building System	Stucco Application Operation	0.3	--
Flame Spray Inc	Marine Coating Application Station	0.1	--
FM Industries Inc	Wood Coating Process	0.1	--
Johanson Dielectrics Inc	Ceramic Slip Casting Operation	0.6	--
Jonathan H Manufacturing Co	Wood Products Coating	7.5	--
NLP Industries	Wood Products Application Station	0.0	--
Remote Reservoir Cleaners	141 Remote Reservoirs	56.4	--
Rohr Inc	Test Stand, Aircraft Engine	0.1	0.1
SD Paper Box Co	Lithographic operation	1.3	--
SD Paper Box Co	Lithographic Printing Press	0.6	--
Soil Remediation Sites	6 Soil Remediation Systems	1.2	--
Solid Rock Wall Systems	Polyester Resin Operation	0.1	--
Solid Rock Wall Systems	Metal Wood & Plastic Applica. Op.	0.1	--
Something Special By Patti	Wood Coating Application Station	1.5	--
Southwest Airlines Co	Diesel Ground Power Unit	0.1	0.6
Southwest Industries	Wood Products Coating Operation	2.7	--
Southwest Marine Inc	Diesel Engine	0.0	0.2
Sunset Radiators Inc	Metal Parts Coating Ap. Station	0.1	--
Teradyne Circuits San Diego	Outer Layer Ammoniacal Etch Line	0.9	0.4
Teradyne Circuits San Diego	Printed Circuit Board Application	5.1	--
Teradyne Circuits San Diego	Etch Line	1.3	--
Teradyne Circuits San Diego	Solder Mask Screening Operation,	1.1	--
USD	Boiler	0.0	0.4
USN Air Station Noris	Corrosion Control Cart	0.0	--
USN Nav Sta 2 Public Works Ctr	I.C. Reciprocating Engine Test Cell	--	0.0
USN Nav Sta 3 Shore Int Maint Act	Adhesive Application Station	0.0	--
Valley Casework Inc	Wood Coating Application Station	0.1	--
Webtrend Graphics Inc	Graphic Arts Printing Operation	3.0	--
West Coast Radiator Co	Metal Coating Station	0.3	--
Westwater Equipment Co	Thunderbird Sand Screen	--	1.4
York Manufacturing Inc	Paint Spray Booth	2.4	--
2003 (Jan – Jun) Totals:		**107.2**	**3.0**
3-YEAR TOTALS:		**346.2**	**39.7**

[1]An additional source not reflected herein, University of California San Diego, retired equipment generating 0.27 tons/year VOC and 11.24 tons/year NOx. Retirement occurred during the tracking period but was not recorded with the District until October 4, 2003, which is after the tracking period.

[2]Values reflect adjustments that would be necessary to qualify the associated reductions as offsets (see Table II-5 for more details).

Table II-5
Adjustments of Unbanked Shutdowns
(Tons/Year)

Name	Equipment	Initial Reduction		Adjustment		Adjusted Reduction		Reason for Adjustment
		VOC	NOx	VOC	NOx	VOC	NOx	
USN Nav Sta 2 Public Works Ctr	Diesel Air Compressor	0.36	0.46	-0.32	-0.25	0.04	0.21	Rule 69.4.1
2000 (July-Dec) Totals:		**0.36**	**0.46**	**-0.32**	**-0.25**	**0.04**	**0.21**	
Ladd Roy E Inc	Rock Drill	0.11	6.90	0	-2.60	0.11	4.30	Rule 69.4.1
Pt Loma Wastewater Treatment Plant	Boiler	0.04	0.77	-0.01	-0.14	0.03	0.63	Rule 69.2
USN Nav Sta 1 SCE	Engine	0.01	0.09	0	-0.05	0.01	0.04	Rule 69.4.1
2001 Totals:		**0.16**	**7.76**	**-0.01**	**-2.79**	**0.15**	**4.97**	
California Clean Green	Diesel Engine	0.09	1.00	-0.04	-0.41	0.05	0.59	Rule 69.4.1
Southwest Airlines	Diesel Ground Power Unit	0.16	1.85	-0.14	-1.54	0.02	0.31	Rule 69.4.1
2002 Totals:		**0.25**	**2.85**	**-0.18**	**-1.95**	**0.07**	**0.90**	
USD	Boiler	0.02	1.08	0	-0.68	0.02	0.40	Rule 69.2
2003 (Jan-Jun) Totals:		**0.02**	**1.08**	**0**	**-0.68**	**0.02**	**0.40**	
3-YEAR TOTALS:		**0.79**	**12.15**	**-0.51**	**-5.67**	**0.28**	**6.48**	

Table II-6
Net Emissions Differential:
Comparing Permitted Emission Increases from Sources > 10 Tons/Year
Including Electrical Power Projects
to Unbanked Actual Emission Reductions from Shutdowns (Tons/Year)

Year	Pollutant	Increase from Sources >10 tons	Unbanked Reduction From Shutdowns	Emissions Differential
1999	VOC	30.2	-51.3	-21.1
	NOx	20.3	-16.6	3.7
2000	VOC	47.5	-67.6	-20.1
	NOx	0	-9.8	-9.8
2001	VOC	124.2	-73.8	50.4
	NOx	16.2	-10.7	5.5
2002	VOC	85.1	-124.1	-39.0
	NOx	286.7[1]	-17.5	269.2[1]
2003 (Jan-Jun)	VOC	81.1	-107.2	-26.1
	NOx	24.7	-3.0	21.7
3-Year Average 07/00-06/03[2]	**VOC**	**106.0**	**-115.4**	**-11.6**
	NOx	**109.2**	**-13.2**	**96.0[2]**
4.5-Year Average 01/99-06/03	**VOC**	**81.8**	**-94.2**	**-12.4**
	NOx	**77.3**	**-12.8**	**64.5[2]**

[1]Value conservatively reflects 100 tons/year of permitted NOx emission increases from two power plants. However, associated operating permits have been rendered inactive and future operation and associated emissions are not anticipated at this time. (See Table 1, footnote 3).

[2]Values for July-December 2000 taken from Tables II-1 and II-4.

Table II-6A
Net Emissions Differential:
Comparing Permitted Emission Increases from Sources > 10 Tons/Year
Excluding Electrical Power Projects
to Unbanked Actual Emission Reductions from Shutdowns
(Tons/Year)

Year	Pollutant	Increase from Sources >10 tons	Unbanked Reduction From Shutdowns	Emissions Differential
1999	VOC	30.2	-51.3	-21.1
	NOx	20.3	-16.6	3.7
2000	VOC	47.5	-67.6	-20.1
	NOx	0	-9.8	-9.8
2001	VOC	121.5	-73.8	47.7
	NOx	5.0	-10.7	-5.7
2002	VOC	49.6	-124.1	-74.5
	NOx	3.0	-17.5	-14.5
2003 (Jan-Jun)	VOC	50.3	-107.2	-56.9
	NOx	1.2	-3.0	-1.8
3-Year Average 07/00-06/03[1]	**VOC**	**83.0**	**-115.4**	**-32.4**
	NOx	**3.1**	**-13.2**	**-10.2**
4.5-Year Average 01/99-06/03	**VOC**	**66.5**	**-94.2**	**-27.8**
	NOx	**6.6**	**-12.8**	**-6.2**

[1]Values for July-December 2000 taken from Tables II-3 and II-4.

Table II-7
Banked Emission Reduction Credits, Amount, and Source
As of June 30, 2003
(Tons/Year)

Source	NOx	VOC	Reduction Source
AEM	--	5.0	Shutdown (Equipment)
Carpenter Technology Corp.	--	4.8	Shutdown (Equipment)
Caspian	--	15.9	Process modification
General Dynamics	1.3	0.2	Shutdown (Facility)
H. G. Fenton	--	0.5	Shutdown (Equipment)
Hughes Aircraft	--	1.3	Shutdown (Equipment)
Muht-Hei, Inc.	--	9.1	Shutdown (Equipment)
NAS North Island	18.7	--	Shutdown (Facility)
NAS North Island	11.3	--	Shutdown (Facility)
National Steel & Shipbldg.	0.5	--	Shutdown (Equipment)
Naval Station, San Diego	5.5	1.3	Shutdown (Equipment)
Navy Region Southwest	12.0	--	Shutdown (Equipment)
Navy Region Southwest	--	3.2	Shutdown (Station)
Northrop-Grumman Ryan	--	1.2	Shutdown (Facility)
Otay Mesa Generating Co.	2.7	--	Shutdown (Equipment)
Otay Mesa Generating Co.	2.4	--	Process modification
Otay Mesa Generating Co.	1.3	30.1	Shutdown (Facility)
Otay Mesa Generating Co.	1.2	--	Shutdown (Equipment)
Otay Mesa Generating Co.	0.3	--	Shutdown (Equipment)
Otay Mesa Generating Co.	--	25.0	Shutdown (Facility)
Otay Mesa Generating Co.	--	17.1	Process modification
Otay Mesa Generating Co.	--	10.3	Shutdown (Facility)
Otay Mesa Generating Co.	78.6	--	MERCs[1]
PGET	4.4	--	Shutdown (Facility)
PGET	--	20.7	Shutdown (Equipment)
Rohr (BF Goodrich)	1.2	0.2	Shutdown (Equipment)
Rohr (BF Goodrich)	--	5.3	Shutdown (Equipment)
SD Metro Wastewater Dept	--	23.1	Process modification
SER	3.7	0.5	Shutdown (Equipment)
SER	3.4	0.4	Shutdown (Equipment)
SER	20.8	1.0	Shutdown (Equipment)
SER	17.5	0.3	Shutdown (Equipment)
SER	--	21.0	Shutdown (Equipment)
SER	--	15.2	Process modification
SER	--	5.2	Process modification
Solar Turbines	21.9	23.0	Shutdown (Facility)

Source	NOx	VOC	Reduction Source
Solar Turbines	--	21.0	Shutdown (Facility)
Solar Turbines	--	8.2	Shutdown (Equipment)
Solar Turbines	--	0.6	Shutdown (Equipment)
Sony Electronics, Inc.	2.2	0.3	Shutdown (Equipment)
Sony Electronics, Inc.	1.9	--	Shutdown (Equipment)
Sony Electronics, Inc.	--	2.9	Shutdown (Equipment)
Sony Electronics, Inc.	--	0.5	Shutdown (Equipment)
Sony Electronics, Inc.	--	0.1	Shutdown (Equipment)
South Coast Materials	2.2	0.9	Shutdown (Facility)
Southern CA Edison	0.5	0.0	Shutdown (Equipment)
ST Microelectronics	1.2	0.1	Shutdown (Facility)
SW Division, NFEC	--	13.0	Shutdown (Station)
U. S. Navy, SW Div	--	9.0	Shutdown (Station)
U.S. Navy Comm. Station	2.6	0.1	Shutdown (Equipment)
USMC	3.0	--	Shutdown (Station)
Wrought Iron Fence Supply	--	5.0	Shutdown (Stations)
TOTAL:	**222.4**	**302.6**	
Permanent Shutdowns:	**141.4 (63.6%)**	**226.1 (74.7%)**	
From Process Modifications:	**2.4 (1.1%)**	**76.5 (25.3%)**	
From MERCs[1]:	**78.6 (35.3%)**	**0 (0%)**	

[1]Mobile source emission reduction credits approved for the planned Otay Mesa Power Plant.

Table II-8
Updated VOC Emissions Impact
Resulting from No-Net-Increase Program Repeal
(Tons/Year)

Year	*Actual* or Projected Impact[1]				1998 Assessment Worst-Case[2] (Cumulative)	1998 Assessment Expected-Case[3] (Cumulative)
	Including Power Projects		Excluding Power Projects			
	Annual	Cumulative	Annual	Cumulative		
1998	*0*	0	*0*	0	0	0
1999	*0*	0	*0*	0	32	2
2000	*0*	0	*0*	0	64	4
2001	*50.4*	50.4	*47.7*	47.7	96	5
2002	*0*	50.4	*0*	47.7	128	7
2003	0[4]	50.4	0[4]	47.7	161	9
2005	0	50.4	0	47.7	225	12
2010	0	50.4	0	47.7	385	21
2015	0	50.4	0	47.7	546	30
2020	0	50.4	0	47.7	706	39

[1] 1998-2003 data from Tables II-6 and II-6A. 2005-2020 projections based on average-annual net emissions change through 2003, Tables II-6 and II-6A. Since program repeal has not "caused" emission reductions, any negative values (indicating unbanked shutdowns had exceeded new sources) were replaced with zero values.

[2] 1998 worst-case scenario did not consider emission benefits from shutdowns. Conservatively assumed annual increase of historic-high, 32.11 tons/yr starting in 1999.

[3] 1998 expected-case scenario assumed program repeal would result in foregoing offsetting reductions from voluntary process or control technology improvements. Assumed annual net increase of 1.78 tons/yr starting in 1999.

[4] January-June 2003 from Tables II-6 and II-6A. July-Dec 2003 projected by applying one-half the 4.5-year average annual impact.

Table II-9
Updated NOx Emissions Impact
Resulting from No-Net-Increase Program Repeal
(Tons/Year)

Year	*Actual* or Projected Impact[1]				1998 Assessment Worst-Case[2] (Cumulative)	1998 Assessment Expected-Case[3] (Cumulative)
	Including Power Projects		Excluding Power Projects			
	Annual	Cumulative	Annual	Cumulative		
1998	*0*	0	*0*	0	0	0
1999	*3.7*	*3.7*	*3.7*	*3.7*	55	3
2000	*0*	*3.7*	*0*	*3.7*	109	6
2001	*5.5*	*9.2*	*0*	*3.7*	164	9
2002	*269.2*	278.4	*0*	*3.7*	218	12
2003	59.1[4]	332.4	0[4]	3.7	273	15
2005	64.5	461.4	0	3.7	382	21
2010	64.5	783.9	0	3.7	655	36
2015	64.5	1106.5	0	3.7	928	52
2020	64.5	1429.0	0	3.7	1201	67

[1] 1998-2003 data from Tables II-6 and II-6A. Since program repeal has not "caused" emission reductions, any negative values (indicating unbanked shutdowns had exceeded new sources) were replaced with zero values. 2005-2020 projections based on average-annual net emissions change through 2003, Tables II-6 and II-6A. Estimated by multiplying the 4.5-year average net NOx emissions (10.3 tons) by the appropriate number of years.

[2] 1998 worst-case scenario did not consider emission benefits from shutdowns. Assumed annual increase of historic-high, 54.57 tons/yr starting in 1999.

[3] 1998 expected-case scenario assumed program repeal would result in foregoing offsetting reductions from voluntary process or control technology improvements. Assumed annual net increase of 3.03 tons/yr starting in 1999.

[4] January-June 2003 from Tables II-6 and II-6A. July-Dec 2003 projected by applying one-half the 4.5-year average annual impact.

Table II-10
Cumulative VOC Emissions Impact of the No-Net-Increase Program Repeal
As a Percentage of Annual Total Emissions Inventory
(Tons/Year)

Year	Total Inventory[1]	*Actual* or Projected Net Impact[2] (% of Total Inventory)	
		Including Power Projects	Excluding Power Projects
1998	88,707	*0 (0%)*	*0 (0%)*
1999	86,436	*0 (0%)*	*0 (0%)*
2000	83,068	*0 (0%)*	*0 (0%)*
2001	80,668	*50.4 (0.06%)*	*47.7 (0.06%)*
2002	77,336	*50.4 (0.07%)*	*47.7 (0.06%)*
2003	73,891	50.4(0.07%)[3]	47.7(0.06%)[3]
2005	69,129	50.4(0.07%)	47.7(0.07%)
2010	64,254	50.4(0.08%)	47.7(0.07%)
2015	62,672	50.4(0.08%)	47.7(0.08%)
2020	63,086	50.4(0.08%)	47.7(0.08%)

[1] ARB emissions inventory, CCOS Version 2.11 (December 19, 2003); average daily values multiplied by 365.

[2] From Tables II-6 and II-6A. Since program repeal has not "caused" emission reductions, any negative values (indicating unbanked shutdowns had exceeded new sources) were replaced with zero values.

[3] January-June 2003 from Tables II-6 and II-6A. July-Dec 2003 projected by applying one-half the 4.5-year average annual impact.

Table II-11
Cumulative NOx Emissions Impact of the No-Net-Increase Program Repeal
As a Percentage of Annual Total Emissions Inventory
(Tons/Year)

Year	Total Inventory[1]	*Actual* or Projected Net Impact[2] (% of Total Inventory)	
		Including Power Projects	Excluding Power Projects
1998	87,750	*0 (0%)*	*0 (0%)*
1999	86,257	*3.7 (0.00%)*	*3.7 (0.00%)*
2000	84,284	*3.7 (0.00%)*	*3.7 (0.00%)*
2001	81,970	*9.2 (0.01%)*	*3.7 (0.00%)*
2002	78,276	*278.4 (0.36%)*	*3.7 (0.00%)*
2003	74,506	332.4 (0.45%)[3]	3.7 (0.00%)[3]
2005	69,548	461.4 (0.66%)	3.7 (0.01%)
2010	58,049	739.9 (1.35%)	3.7 (0.01%)
2015	46,351	1106.5 (2.39%)	3.7 (0.01%)
2020	40,221	1429.0 (3.55%)	3.7 (0.01%)

[1] ARB emissions inventory, CCOS Version 2.11 (December 19, 2003); average daily values multiplied by 365.

[2] From Tables II-6 and II-6A. Since program repeal has not "caused" emission reductions, any negative values (indicating unbanked shutdowns had exceeded new sources) were replaced with zero values.

[3] January-June 2003 from Tables II-6 and II-6A. July-Dec 2003 projected by applying one-half the 10.5-year average annual impact.

Table II-12
Cumulative VOC Emissions Impact of the No-Net-Increase Program Repeal
As a Percentage of Annual Stationary-Source Inventory
(Tons/Year)

Year	Stationary-Source Inventory[1]	*Actual* or Projected Net Impact[2] (% of Stationary-Source Inventory)	
		Including Power Projects	Excluding Power Projects
1998	17,577	*0 (0%)*	*0 (0%)*
1999	18,235	*0 (0%)*	*0 (0%)*
2000	18,303	*0 (0%)*	*0 (0%)*
2001	18,658	*50.4 (0.27%)*	*47.7 (0.26%)*
2002	19,076	*50.4 (0.26%)*	*47.7 (0.25%)*
2003[3]	19,545	50.4 (0.26%)	*47.7 (0.24%)*
2005	20,626	50.4 (0.24%)	*47.7 (0.23%)*
2010	23,439	50.4 (0.22%)	*47.7 (0.20%)*
2015	26,103	50.4 (0.19%)	*47.7 (0.18%)*
2020	28,520	50.4 (0.18%)	*47.7 (0.17%)*

[1] ARB emissions inventory, CCOS Version 2.11 (December 19, 2003); average daily values multiplied by 365.

[2] From Tables II-6 and II-6A. Since program repeal has not "caused" emission reductions, any negative values (indicating unbanked shutdowns had exceeded new sources) were replaced with zero values.

[3] January-June 2003 from Tables II-6 and II-6A. July-Dec 2003 projected by applying one-half the 4.5-year average annual impact..

Table II-13
Cumulative NOx Emissions Impact of the No-Net-Increase Program Repeal
As a Percentage of Annual Stationary-Source Inventory
(Tons/Year)

Year	Stationary-Source Inventory[1]	*Actual* or Projected Net Impact[2] (% of Total Inventory)	
		Including Power Projects	Excluding Power Projects
1998	4,944	*0 (0%)*	*0 (0%)*
1999	4,882	*3.7 (0.08%)*	*3.7 (0.08%)*
2000	4,986	*3.7 (0.07%)*	*3.7 (0.07%)*
2001	5,311	*9.2 (0.17%)*	*3.7 (0.07%)*
2002	4,773	*278.4 (5.83%)*	*3.7 (0.08%)*
2003[3]	4,181	332.4 (7.95%)	3.7 (0.09%)
2005	4,468	461.4 (10.33%)	3.7 (0.08%)
2010	6,779	783.9 (11.56%)	3.7 (0.05%)
2015	6,934	1106.5 (15.96%)	3.7 (0.05%)
2020	7,853	1429.0 (18.20%)	3.7 (0.05%)

[1] ARB emissions inventory, CCOS Version 2.11 (December 19, 2003); average daily values multiplied by 365.

[2] From Tables II-6 and II-6A. Since program repeal has not "caused" emission reductions, any negative values (indicating unbanked shutdowns had exceeded new sources) were replaced with zero values.

[3] January-June 2003 from Tables II-6 and II-6A. July-Dec 2003 projected by applying one-half the 4.5-year average annual impact..

Table II-14
2004 Versus 1998 Projections of Cumulative VOC Emissions Impact of Program Repeal
As a Percentage of Annual Total Emissions Inventory (Tons/Year)

Year	*Actual* or Projected Impact		1998 Worst-Case Assessment	1998 Expected-Case Assessment
	Including Power Projects	Excluding Power Projects		
1998	*0%*	*0%*	0%	0%
1999	*0%*	*0%*	0.04%	0.00%
2000	*0%*	*0%*	0.08%	0.01%
2001	*0.06%*	*0.06%*	--	--
2002	*0.07%*	*0.06%*	--	--
2003	0.07%	0.06%	--	--
2005	0.07%	0.07%	0.32%	0.02%
2010	0.08%	0.07%	0.57%	0.03%
2015	0.08%	0.08%	--	--
2020	0.08%	0.08%	--	--

Table II-15
2004 Versus 1998 Projections of Cumulative NOx Emissions Impact of Program Repeal
As a Percentage of Annual Total Emissions Inventory

Year	*Actual* or Projected Impact		1998 Worst-Case Assessment	1998 Expected-Case Assessment
	Including Power Projects	Excluding Power Projects		
1998	*0.00%*	*0.00%*	0.00%	0.00%
1999	*0.00%*	*0.00%*	0.08%	0.00%
2000	*0.00%*	*0.00%*	0.16%	0.01%
2001	*0.01%*	*0.00%*	--	--
2002	*0.36%*	*0.00%*	--	--
2003	0.45%	0.00%	--	--
2005	0.66%	0.01%	0.68%	0.04%
2010	1.35%	0.01%	1.25%	0.07%
2015	2.39%	0.01%	--	--
2020	3.55%	0.01%	--	--

Table II-16
2004 and 1998 Projections of Cumulative VOC Emissions Impact of Program Repeal
As a Percentage of Annual Stationary-Source Inventory

Year	*Actual* or Projected Impact		1998 Worst-Case Assessment	1998 Expected-Case Assessment
	Including Power Projects	Excluding Power Projects		
1998	*0%*	*0%*	0.00%	0.00%
1999	*0%*	*0%*	0.17%	0.01%
2000	*0%*	*0%*	0.34%	0.02%
2001	*0.27%*	*0.26%*	--	--
2002	*0.26%*	*0.25%*	--	--
2003	0.26%	*0.24%*	--	--
2005	0.24%	*0.23%*	1.07%	0.05%
2010	0.22%	*0.20%*	1.49%	0.08%
2015	0.19%	*0.18%*	--	--
2020	0.18%	*0.17%*	--	--

Table II-17
2004 and 1998 Projections of Cumulative NOx Emissions Impact of Program Repeal
As a Percentage of Annual Stationary-Source Inventory

Year	*Actual* or Projected Impact		1998 Worst-Case Assessment	1998 Expected-Case Assessment
	Including Power Projects	Excluding Power Projects		
1998	*0%*	*0%*	0.00%	0.00%
1999	*0.08%*	*0.08%*	1.19%	0.07%
2000	*0.07%*	*0.07%*	2.51%	0.14%
2001	*0.17%*	*0.07%*	--	--
2002	*5.83%*	*0.08%*	--	--
2003	7.95%	0.09%	--	--
2005	10.33%	0.08%	10.57%	0.58%
2010	11.56%	0.05%	16.02%	0.88%
2015	15.96%	0.05%	--	--
2020	18.20%	0.05%	--	--

Table II-18
VOC Emissions Inventory for San Diego County
For the 2004 Assessment of the No-Net-Increase Repeal[1]
(Tons/Year)

Year	Stationary[2]	Area	Mobile	Total Inventory
1998	17,577	15,493	55,637	88,707
1999	18,235	15,651	52,550	86,436
2000	18,303	15,435	49,330	83,068
2001	18,658	15,571	46,439	80,668
2002	19,076	15,611	42,649	77,336
2003	19,545	14,840	39,507	73,892
2005	20,626	14,520	33,983	69,129
2010	23,439	15,225	25,591	64,255
2015	26,103	15,936	20,633	62,672
2020	28,520	16,840	17,725	63,085

[1] ARB emissions inventory, CCOS Version 2.11 (December 19, 2003); average daily values multiplied by 365.
[2] See 2004 Triennial RAQS Revision, "Emission Trends," for discussion of possible future refinements to stationary-source emissions inventory and projections.

Table II-19
VOC Emissions Inventory for San Diego County
For the 1998 Assessment of the No-Net-Increase Repeal[1]
(Tons/Year)

Year	Stationary	Area	Mobile	Total Inventory
1998	18,710	17,155	49,246	85,111
1999	18,900	16,863	44,771	80,534
2000	19,090	16,571	40,296	75,957
2005	20,973	17,411	30,003	68,387
2010	25,769	17,958	23,360	67,087

[1] 1998 and 1999 values interpolated from 1995 an 2000 values.

Table II-20
NOx Emissions Inventory for San Diego County
For the 2004 Assessment of the No-Net-Increase Repeal[1]
(Tons/Year)

Year	Stationary[2]	Area	Mobile	Total Inventory
1998	4,944	1,084	81,722	87,750
1999	4,882	1,088	80,287	86,257
2000	4,986	1,090	78,209	84,285
2001	5,311	1,092	75,567	81,970
2002	4,773	1,095	72,409	78,277
2003	4,181	1,098	69,227	74,506
2005	4,468	1,102	63,978	69,548
2010	6,779	1,117	50,153	58,049
2015	6,934	1,132	38,285	46,351
2020	7,853	1,149	31,218	40,220

[1] ARB emissions inventory, CCOS Version 2.11 (December 19, 2003); average daily values multiplied by 365.
[2] See 2004 Triennial RAQS Revision, "Emission Trends," for discussion of possible future refinements to stationary-source emissions inventory and projections.

Table II-21
NOx Emissions Inventory for San Diego County
For the 1998 Assessment of the No-Net-Increase Repeal[1]
(Tons/Year)

Year	Stationary	Area	Mobile	Total Inventory
1998	4,855	2,139	66,766	73,760
1999	4,599	2,183	62,729	69,511
2000	4,344	2,227	58,692	65,263
2005	3,614	2,409	50,042	56,065
2010	4,088	2,519	45,114	51,721

[1] 1998 and 1999 values interpolated from 1995-2000 values.

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