CHAPTER 4

EMISSION CONTROL MEASURES

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4. EMISSION CONTROL MEASURES

4.1 INTRODUCTION

This chapter addresses emission control measures adopted and proposed by the APCD, the California Air Resources Board (ARB), and the United States Environmental Protection Agency (U.S. EPA) to reduce ROC or NO_x emissions and identifies additional ***stationary source*** control measures for further study. This chapter also addresses the state triennial plan assessment and update requirements specified in Health and Safety Code Sections 40924 and 40925. Control measures that focus on reducing local transportation-related emissions are discussed in Chapter 5 – Transportation Control Measures.

The control measures presented in this chapter are founded on the following plans:

- 1989 Air Quality Attainment Plan
- 1991 Air Quality Attainment Plan
- 1993 Rate-Of-Progress Plan
- 1994 Clean Air Plan
- 1998 Clean Air Plan
- 2001 Clean Air Plan
- 2004 Clean Air Plan

Control measures are evaluated and classified as *adopted*, *proposed*, or *further study,* based on an analysis of the measures applicability to Santa Barbara County, potential emission reductions, and the implementation of similar measures in other areas of California. The following describes the control measure classes:

- ***Adopted*** control measures are those that the APCD has formally adopted as APCD rules for inclusion into the State Implementation Plan (SIP). These are also adopted for the purpose of attaining the state ozone standards. Table 4-1 lists the control measures adopted before 2004 and Table 4-2 identifies the control measures adopted or modified within the reporting period (2004 to 2006) for this 2007 Plan.
- ***Proposed*** control measures, as used in this 2007 Clean Air Plan, have a dual meaning. When related to attainment of the **state** one-hour and eight-hour ozone standards, *proposed* control measures are considered *proposed.* When related to maintaining the **federal** eight-hour ozone standard, *proposed* control measures are considered *contingency*. These measures are scheduled as either near-term (2007 - 2009)~~,~~ or mid-term (2010 - 2012) ~~or long-term (2013 - 2015)~~. Table 4-3 shows the proposed control measures for this 2007 Plan.
- ***Further study*** measures are emission reduction techniques that the APCD plans to investigate further before making a commitment to adopt them in our next triennial plan update and revision. Tables 4-4 and 4-5 identify the control measures for further study.

Through a public process, the APCD Board of Directors adopts control measures as local rules. Once the APCD Board adopts a rule, the APCD is responsible to ensure that the affected parties comply with the rule. Some rules impose emission limits and other requirements on businesses and industry. Other rules require manufacturers and retailers to comply with requirements that limit emissions.

The ARB and the U.S. EPA adopt emission control measures that apply throughout the state. These measures apply to a variety of sources including automobiles, consumer products, off-road equipment and others. Section 4.7 provides a summary of these measures.

4.2 EMISSION CONTROL MEASURE MANDATES

The air pollution control strategy identified in this chapter is proposed to meet both the federal and California Clean Air Act requirements. An area that the U.S. EPA has redesignated as an ozone attainment area must submit a "maintenance plan" that provides for the maintenance of the federal ozone standard for at least 10 years after redesignation.[a] This plan relies on measures adopted by the APCD, ARB, and the U.S. EPA to comply with this federal requirement. Section 4.7 summarizes the ARB and the U.S. EPA control measures.

Under the California Clean Air Act, ~~state requirements,~~ each district ~~in the state~~ that is nonattainment for the state ~~California one-hour~~ ozone standards must demonstrate a five percent reduction in emissions per year or adopt every feasible measure available to that district.[b] The APCD has taken the approach of evaluating and adopting every feasible measure since the 1991 AQAP failed to produce the state mandated five percent per year emission reductions and was approved by ARB under the every feasible measure option.[c]

To ensure that the APCD has adopted or has proposed to adopt every feasible measure, staff:

1. Compared the APCD's rules to rules of other California air districts using ARB's document titled, "Identification of Performance Standards," April 1999, which evaluates emission control measures adopted throughout the state.

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[a] Section 175A(a) of the federal Clean Air Act. Additionally, pursuant to a memo from Lydia N. Wegman (Director, Air Quality Strategies and Standards Division, USEPA), areas such as Santa Barbara must address the maintenance requirements in Section 110(a)(1) of the federal Clean Air Act.

[b] Health and Safety Code Section 40914(b).

[c] The Air Resources Board interprets *the adoption of every feasible measure* to mean that, at a minimum, a district consider regulations that have been successfully implemented elsewhere. The districts should also consider going beyond what has already been accomplished by evaluating new technologies and innovative approaches that may offer potential emission reductions. Further, districts should consider not only technological factors, but also social, environmental, economic (e.g., cost-effectiveness), and energy factors which prevail in the district, along with the resources realistically available to the district to adopt, implement, and enforce the measures.

2. Reviewed and considered information provided in the California Air Pollution Control Officer Association document titled, "Potential All Feasible Measures," September 2003.

4.3 EMISSION CONTROL MEASURES ADOPTED BEFORE 2004

Table 4-1 identifies the APCD emission control measures adopted before 2004.

TABLE 4-1
EMISSION CONTROL MEASURES ADOPTED BEFORE 2004

Rule	CAP Control Measure ID	Description	Rule Adoption Date	Full Implementation Date
316	R-PM-1	Gasoline Bulk Plants	November 1990	1992
316	R-PM-2	Gasoline Dispensing Phase I Vapor Recovery	November 1990	1992
316	R-PM-3	Gasoline Dispensing Phase II Vapor Recovery	November 1990	1992
320	R-SL-1	Petroleum Solvent Dry Cleaners	June 1979	1985
321	R-SL-2	Solvent Cleaning (Degreasers)	July 1997	1998
323	R-SC-1	Architectural Coatings	February 1990	1994
325	R-PT-2	Crude Oil Production and Separation	January 1994	1996
326	R-PT-2	Storage of Reactive Organic Compound Liquids	December 1993	1995
329	R-SL-3	Cutback and Emulsified Asphalt	February 1992	1992
330	R-SC-2	Surface Coating of Metal Parts and Products	November 1990	1992
331	R-PG-1	Fugitive Emissions I & M	December 1991	1992 (1995 OCS)
333[a]	N-IC-1	IC Engines (Gas-Fired)	December 1991	1994 (1995 OCS)
333[a]	N-IC-3	IC Engines (Diesel-Fired)	December 1991	1994 (1995 OCS)
337	R-SC-2	Surface Coating of Aircraft or Aerospace vehicle Parts and Products	July 1990	1992
339	R-SC-4	Motor Vehicle and Mobile Equipment Coating Operations	May 1994	1994

[a] EPA has not taken final SIP action to grant approval, disapproval, or limited approval/disapproval of Rule 333. The Federal Register of February 1, 1995 (60 FR 6049) indicates the EPA was considering the granting of limited approval and limited disapproval of the rule.

TABLE 4-1

EMISSION CONTROL MEASURES ADOPTED BEFORE 2004 (CONT.)

Rule	CAP Control Measure ID	Description	Rule Adoption Date	Full Implementation Date
341[a] / 901	R-GN-1	Landfill Gas Emissions	September 1997	2001
342	N-XC-4	Small Industrial and Commercial Boilers	March 1992	1996
342	N-XC-5	Large Industrial and Commercial Boilers	March 1992	1996
342	N-XC-6	Process Heaters	March 1992	1996
343	R-PT-1	Petroleum Storage Tank Degassing	December 1993	1995
344	R-PP-1	Petroleum Sumps, Pits, and Well Cellars	November 1994	1998
346	R-PP-9	Loading of Organic Liquid Cargo Vessels	October 1992	1995
349	R-SL-5	Polyester Resin Operations	April 1993	1994
351	R-SC-5	Surface Coating of Wood Products	August 1998	2005
352	N-XC-1	Residential Water Heaters	September 1999	2000
352	N-XC-3	Natural-Gas Fired Fan-Type Central Furnaces	September 1999	2000
353	R-SL-9	Adhesives and Sealants	August 1999	2000
354	R-SL-7	Graphic Arts – Rotogravure/Flexographic Printing	June 1994	1995
359	N-XC-8	Petroleum Flares & Relief Gas Oxidizers	June 1994	1999
360	N-XC-2	Large Water Heaters and Small Boilers	October 2002	2003

As seen in Table 4-1, the APCD has adopted a wide range of control measures that reduced ROC and NO_x emissions both onshore and on the outer continental shelf.

[a] The California Air Resources Board withdrew Rule 341 for SIP consideration on April 24, 2001 because the rule implements the requirements of 40 CFR Part 60, Section 111(d) and Rule 341 is already federally enforceable by EPA's approval of the 111(d) State Plan.

4.4 EMISSION CONTROL MEASURES ADOPTED DURING THE REPORTING PERIOD (2004 - 2006)

Rulemaking activities during the 2004 - 2006 period focused on the development of revisions to control measures N-IC-1 (Rules 202 and 333), N-IC-3 (Rules 202 and 333), R-SL-2 (Rule 321), and R-SC-2 (Rules 330 and 337). Due to delays experienced during these rule revisions and other rules and control measures described below, the development of the final packages for Rules 202, 333, 321, 330, and 337 experienced delays. We now anticipate that modifications of control measures N-IC-1, N-IC-3, R-SL-2, and R-SC-2 will occur in 2007.

In addition to the control measures identified for the 2004 – 2006 period, several other rulemaking projects and mandates displaced staff from working on revising the control measures originally scheduled in the 2004 Clean Air Plan. These include:

- Industry-requested revisions to Rule 331, Fugitive Emissions and Inspection and Maintenance,[a]
- Pursuant to Senate Bill 656 (SB 656, Sher), an assessment of the ambient particulate matter air quality, an evaluation of ARB's list of measures, identification of feasible and cost-effective measures, and the adoption of an implementation schedule for the locally-appropriate control measures.
- Revisions to Rule 102 (ROC definitions).
- Revisions to Rule 202 for implementation of the state Airborne Toxic Control Measure for stationary diesel-fired internal combustion engines.
- Revision to Rule 210 to recover costs for our Air Toxics Program based on the amount of air toxics produced by applicable permitted facilities.

Health and Safety Code Section 40924(b)(2) requires the APCD to identify the *expected* emission reductions that were in the 2004 CAP and the current *revised* emission reductions for each measure scheduled for adoption during the reporting period. Table 4-2 provides information on the rules proposed for adoption during the 2004 to 2006 reporting period of this plan to fulfill this requirement.

On the Rule 333 figures, changes to the NOx reduction estimates (and to the ROC increase estimates) are due to changing the baseline year from 2000 to 2002 and assuming offshore well drilling engines will be subject to permitting and the Rule 333 requirements. The solvent rules' ROC reductions estimates changed due to changing the baseline year from 2000 to 2002 and revising the exemption projections.

[a] The APCD eventually withdrew the proposed revisions to Rule 331 due to U.S. EPA concerns.

TABLE 4-2
EMISSION CONTROL MEASURES SCHEDULED FOR ADOPTION DURING THE REPORTING PERIOD (2004 - 2006)

Rule #	CAP Control Measure ID	Description	Rule Adoption Date	Full Implementation Date	Pollutant	2004 CAP EXPECTED EMISSION REDUCTIONS (Tons/Day)			REVISED EMISSION REDUCTIONS (Tons/Day)		
						2010	2015	2020	2010	2015	2020
202 & 333	N-IC-1 N-IC-3	Control of Emissions from Engines (Rev's to address ARB & U.S. EPA concerns.)	2007	2007	ROC	-0.0034	-0.0031	-0.0029	-0.0051[a]	-0.0047[a]	-0.0043[a]
202 & 333	N-IC-1 N-IC-3	Same as above.	2007	2007	NO_x	0.0152	0.0140	0.0129	0.0246[a]	0.0233[a]	0.0220[a]
321[b]	R-SL-2	Solvent Cleaning Machines and Solvent Cleaning	2007	2008	ROC	0.7745	0.8552	0.9359	0.6516	0.7204	0.7891
330 & 337	R-SC-2	Add Solvent Cleaning Requirements to These Existing Coating Rules	2007	2008	ROC	0.0586	0.0651	0.0717	0.0218	0.0238	0.0258
TOTALS FOR ROC						0.8297	0.9172	1.0047	0.6684	0.7395	0.8106
TOTALS FOR NO_x						0.0152	0.0140	0.0129	0.0246	0.0233	0.0220

[a] These emission reduction estimates are based on previously exempt engines needing to comply with Rule 333 (e.g., spark ignition engines rated > 50 but < 100 brake horsepower and offshore well drilling engines) and diesel engines being subject to a lower NO_x limit.

[b] These figures include the emission reductions from implementing new solvent cleaning requirements (e.g., wipe cleaning). In the 2004 Clean Air Plan, the solvent cleaning emission reductions were attributed to a proposed new Rule 362 (R-SL-10). Staff decided to integrate the proposed new "general" solvent cleaning requirements into Rule 321 (R-SL-2). The 2004 CAP estimate for Rule 321 shown above includes the previous emission reductions attributed to Rule 362.

4.5 PROPOSED EMISSION CONTROL MEASURES

The proposed control measures are summarized in Table 4-3. These control measures are scheduled as either near-term (2007 - 2009)~~,~~ or mid-term (2010 - 2012) ~~or long-term (2013 - 2015)~~.

TABLE 4-3
PROPOSED EMISSION CONTROL MEASURES

Rule (Status)	CAP Control Measure ID	Description	Adoption Schedule	Emission Reductions (Tons per Day) from the Control Measure When Fully Implemented (Unless Otherwise Specified)	
				ROC	NO_X
202 (Revised) & 333 (Revised)	N-IC-1 N-IC-3	Control of Emissions from Engines (Rev's to address ARB & EPA concerns.)	2007[a]	-0.0051	0.0246
321 (Revised)	R-SL-2	Solvent Cleaning Machines and Solvent Cleaning (Revisions to Revise Solvent Degreaser Requirements and Add New Solvent Cleaning Provisions)	2007[a]	0.6516	––
330 (Revised)	R-SC-2	Surface Preparation and Coating of Metal Parts and Products (Revisions to Include Solvent Cleaning Requirements)	2007[a]	0.0214	––
337 (Revised)	R-SC-2	Surface Preparation and Coating of Aircraft or Aerospace Vehicle Parts and Products (Revisions to Include Solvent Cleaning Requirements)	2007[a]	0.0004	––
339 (Revised)	R-SC-4	Motor Vehicle and Mobile Equipment Surface Preparation and Coating Operations (Revisions to Include Solvent Cleaning Requirements and the State Suggested Control Measure for Limiting Coating ROC Content)	Near-Term: 2007 – 2009	0.1404	––

[a] These rule revisions were delayed from their 2004 - 2006 timeframe and are expected to be completed in 2007.

TABLE 4-3

PROPOSED EMISSION CONTROL MEASURES (CONT.)

Rule (Status)	CAP Control Measure ID	Description	Adoption Schedule	Emission Reductions (Tons per Day) from the Control Measure When Fully Implemented (Unless Otherwise Specified)	
				ROC	NO_X
202 (Revised) & 361 (New)	N-XC-4	Small Industrial and Commercial Boilers, Steam Generators, and Process Heaters (> 2 MMBtu/hr to < 5 MMBtu/hr) (Revision to the Rule 202 Permitting Threshold and the New Rule 361 will Establish NOx Limits for the Previously Unregulated Range)	Near-Term: 2007 – 2009	––	0.0467[a]
351 (Revised)	R-SC-5	Surface Preparation and Coating of Wood Products (Revisions to Include Solvent Cleaning Requirements)	Near-Term: 2007 – 2009	0.0016	––
349 (Revised)	R-SL-5	Polyester Resin Operations (Revisions to Include Solvent Cleaning Requirements)	Near-Term: 2007 – 2009	0.0028	––
353 (Revised)	R-SL-9	Adhesives and Sealants (Revisions to Include Solvent Cleaning Requirements)	Near-Term: 2007 – 2009	0.0018	––
202 (Revised) & 354 (Revised)	R-SL-7	Graphic Arts (Revision to the Rule 202 to Eliminate Printing Exemptions and Revisions to Rule 354 to Include Solvent Cleaning and Additional Requirements for Rotogravure, Flexographic, Lithographic, Letterpress, and Screen Printing)	Mid-Term: 2010 – 2012	0.0577	––
352 (Revised)	N-XC-6	Residential Water Heaters; Residential and Commercial Space Heaters (Revisions to Reduce the NOx Limits on the Residential Water Heaters)	Mid-Term: 2010 – 2012	––	0.0397[b]

[a] This year 2020 figure is based on the requirement that all existing boilers, steam generators, and process heaters in the range of > 2 MMBtu/hr to < 5 MMBtu/hr will comply with the Rule 361 provisions by 2020.

[b] This is the NOx emissions reductions in year 2020 with 60 percent implementation.

TABLE 4-3

PROPOSED EMISSION CONTROL MEASURES (CONT.)

Rule (Status)	CAP Control Measure ID	Description	Adoption Schedule	Emission Reductions (Tons per Day) from the Control Measure When Fully Implemented (Unless Otherwise Specified)	
				ROC	NO_X
321 or 323 (Revised)	R-SC-1	Architectural Coatings (Revision to Regulate the Cleaning of Application Equipment used in Architectural Coating Applications)	Mid-Term: 2010 – 2012	0.0873	—
Total for the local control measures				0.9600	0.1238

The following is a summary of the changes to the control measures shown in Table 4-3. The revisions to Rules 102, 202, and 333 will affect definitions, engine permitting and exemption thresholds, and engine operating requirements (including emission limits). The rulemaking action is intended to address all deficiencies that were identified by the California Air Resources Board and by the U.S. Environmental Protection Agency regarding the permitting of and the emission limits for internal combustion engines. The revisions will also incorporate staff- and industry-requested revisions to permit exemptions and other changes to clarify the rules.[a]

The APCD plans to make changes to Rule 321 to 1) revise solvent cleaning machine requirements and 2) add new "general" solvent cleaning requirements to the rule. For rule clarification, new definitions will be added. In general, *solvent cleaning* means those activities, operations, and processes using a solvent that occur outside of a *solvent cleaning machine*.

The 2001 and 2004 Clean Air Plans indicate a new rule (362) similar to the South Coast AQMD Rule 1171, Solvent Cleaning Operations, would be adopted to implement the new "general" solvent cleaning control measure. However, preliminary work on the project showed that there

[a] For example, the APCD proposes to delete the construction engine and the OCS well drilling engine exemptions. The deletion of these exemptions is needed to facilitate the implementation of the State Airborne Toxic Control Measures for portable and stationary compression ignition engines. Other revisions include, but are not limited to, making the powder coating exemption more general, requiring permits for non-certified distributed generation units, adding a provision that the ratings of all engines or combustion equipment used in the same process be accumulated to determine exemption applicability, and modifying the gas turbine engine exemption to allow limited stacking under strict restrictions.

are advantages to integrating the solvent cleaning requirements within existing Rule 321 and the appropriate operation-specific rules. Thus, we will implement the new solvent cleaning control measure provisions and obtain the emission reductions committed to in the 2001 and 2004 plans by revising the existing rules and existing control measures.

After completing changes to Rule 321, the APCD intends to add new solvent cleaning requirements to several operation-specific rules. Staff anticipates that the order of the operation-specific rule revisions will be consistent with those shown in prior clean air plans:[a]

1. Rule 330, Surface Preparation and Surface Coating of Metal Parts and Products.
2. Rule 337, Surface Preparation and Surface Coating of Aircraft or Aerospace Vehicle Parts and Products.
3. Rule 339, Motor Vehicle and Mobile Equipment Surface Preparation and Coating Operations.[b]
4. Rules 351, Surface Preparation and Surface Coating of Wood Products.
5. Rule 349, Polyester Resin Operations.
6. Rule 353, Adhesives and Sealants.
7. Rule 354, Graphic Arts.[c]
8. Rule 321, Solvent Cleaning Machines and Solvent Cleaning, or Rule 323, Architectural Coatings, to implement a 25 grams of ROC per liter solvent ROC-content limit when cleaning application equipment (e.g., spray guns) used in architectural coating operations.[d]

For the new and revised solvent requirements, we plan to use terms, concepts, limits, control techniques, and other provisions gleaned from the following:

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[a] The actual sequence of the proposed rule revisions may change within their respective near- or mid-term timeframes.

[b] In addition to the new solvent cleaning requirements, the rule revisions will include changes recommended by the California Suggested Control Measure for Automotive Coatings (approved by the Air Resources Board on October 20, 2005). The state guidance includes limiting the cleaning solvents' ROC content to 25 grams of ROC per liter and revising the surface coating material ROC content limits.

[c] Besides incorporating the solvent cleaning requirements, the proposed changes will include ink, coating, adhesive, resists, wash primers, and fountain solution ROC-content requirements. The revised rule will include components or be modeled on provisions in the South Coast AQMD Rule 1130, Graphic Arts, and Rule 1130.1, Screen Printing Operations, San Joaquin Valley Unified APCD Rule 4607, Graphic Arts, and/or Ventura County Rule 74.19 Graphic Arts, and Rule 74.19.1 Screen Printing Operations. Rule 202 exemptions and Rule 354 exemptions, definitions, and rule requirements are planned to be revised for promulgating and implementing control techniques for gravure, flexography, lithography, letterpress, and screen printing methods.

[d] The SBCAPCD may add new state Suggested Control Measure provisions regarding Architectural Coatings during this rulemaking effort as well.

- For solvent cleaning machines:
  - 40 CFR, Part 63, Subpart T - National Emission Standards for Halogenated Solvent Cleaning (40 CFR §63.460 et seq.)
  - South Coast AQMD Rule 1122, Solvent Degreasers
  - San Joaquin Valley Unified APCD Rule 4662, Organic Solvent Degreasing Operations
  - Ventura County Air Pollution Control District Rule 74.6, Surface Cleaning and Degreasing, and Rule 74.6.1, Batch Loaded Vapor Degreasers

- For solvent cleaning:
  - South Coast AQMD Rule 1171, Solvent Cleaning Operations
  - San Joaquin Valley Unified APCD Rule 4663, Organic Solvent Cleaning, Storage, and Disposal
  - Ventura County Air Pollution Control District Rule 74.6, Surface Cleaning and Degreasing

Table 4-3 also includes control measures for combustion equipment (other than internal combustion engines). Staff anticipates the adoption of a new Rule 361 in the near-term, which will fill in a gap that currently exists in the water heater, boiler, steam generator, and process heater combustion rules. Rule 352 covers water heaters rated from 0 to less than (<) 75,000 British thermal units (Btu) per hour. Rule 360 regulates emission units from 75,000 to 2 million Btu per hour and Rule 342 applies to units 5 million Btu per hour and greater. Proposed new Rule 361 will provide combustion equipment requirements for the currently unregulated range of greater than (>) 2 million to < 5 million Btu per hour.[a]

The new Rule 361 requirements will include tune-ups for units that operate less than 1.8 billion Btu per year. Equipment not subject to the tune up provision will need to limit emissions to 400 parts per million of carbon monoxide at 3 percent oxygen and 30 parts per million of NO_x by volume at 3 percent oxygen or 0.037 pounds of NOx per million Btu of heat input.

Concurrent with the adoption of Rule 361, the APCD will revise the Rule 202.G.1 permitting threshold to require permits for equipment rated ~~at~~ greater than 2 million Btu per hour ~~or greater~~. Currently, Rule 202.G.1 requires combustion equipment rated at 5 million Btu per hour or greater to be permitted.[b] Rule 361 requirements will apply to equipment with ratings < 5 million Btu per hour (but > 2 million Btu per hour). Thus, permitting these units will facilitate the implementation of Rule 361. The South Coast AQMD presently requires permits for combustion

[a] All of these ratings are on a heat input basis.

[b] Units that burn natural gas or produced gas not meeting PUC standards or LPG not meeting the Gas Processors Association Standards (e.g., diesel fuel, landfill gas, digester gas, etc) are not exempt under the Rule 202.G provision regardless of the equipment size.

equipment rated > 2 million Btu per hour and the Ventura County APCD current permitting threshold is 1 million Btu per hour.

Rule 361 information in the 2001 and 2004 Clean Air Plans indicated that the APCD will decide to adopt Rule 361 as a point-of-sale or a retrofit rule during the rulemaking process. We have decided to eliminate the point-of-sale rule option for several reasons. If we adopted a point-of-sale rule:

- The emission reductions would be achieved in small increments over a long timeframe.
- We would need to oversee an equipment certification program and dedicate significant resources to ensure compliance with no mechanism to generate revenue necessary to pay the costs of the effort.

Also, ~~all~~ most of the other air districts in California that regulate combustion equipment rated between 2 and 5 million Btu per hour require compliance by the equipment owner (not the manufacturer). Thus, there is ~~no~~ a minimal existing point-of-sale certification infrastructure in place to rely on for units to be regulated by Rule 361. Rule 352 and Rule 360 for the smaller sized units are acceptable (and SIP-approved) rules because other air districts take the point-of-sale approach and a significant certification infrastructure currently exists.

The APCD now envisions that Rule 361 (> 2 million Btu per hour to < 5 million Btu per hour combustion equipment) will be adopted with the following provisions regarding applicability:

1. The requirements (e.g., ~~oxygen trim tune up or~~ compliance with emissions limits) will apply to new boilers, steam generators, and process heaters (i.e., ~~boilers~~ units for which installation commences on or after the date of Rule 361 adoption).

2. For boilers, steam generators, and process heaters existing as of the date of Rule 361 adoption ~~that have an annual fuel feed rate of 1.8 billion Btu per year or greater (on the fuel's higher heating value basis)~~, the requirement to comply with the rule ~~the emissions limits~~ will become effective upon:

   A. replacement of the boiler, steam generator, or process heater, or
   B. replacement of the boiler's, steam generator's, or process heater's burner; or
   C. January 1, 2020; whichever occurs first.

On the Rule 352 revision, the APCD proposes that the natural gas-fired water heater NO_x limit be lowered to 30 parts per million by volume of NO_x at 3 percent oxygen (0.035 pounds of NO_x per million Btu on a heat input basis). The rule will remain a *point-of-sale* rule and the emission limits for the central furnaces would remain unchanged.

4.6 EMISSION CONTROL MEASURES FOR FURTHER STUDY

Additional potential control measures and existing control measures that merit further study are shown in Table 4-4 (Further Study – New Rules) and Table 4-5 (Further Study – Existing Rules).

TABLE 4-4
FURTHER STUDY - NEW RULES

Description	Comments	APCD/AQMD Rule that could be used to model a SBCAPCD Rule
Gas Turbines	Staff reclassified this category from *proposed* (as listed in the 2001 CAP) to a *further study* control measure. This action is based on the 2001 CAP showing no emission reductions from adopting gas turbine control requirements and the need for more analyses to determine the potential onshore and offshore gas turbine emission reductions to be realized through the adoption of an *all feasible* control measure.	Ventura Rule 74.23 and San Joaquin Rule 4703
Natural Gas Fuel Specifications	The SBCAPCD may set a *higher heating value*[a] limit on natural gas to eliminate: 1) potential equipment problems associated with engines designed for low-Btu gas that are fueled by "hot gas," and 2) to prohibit increased emissions from the use of or disposal of "hot gas." The South Coast AQMD included this control measure in their 2003 AQMP.	Future South Coast AQMD rule
Pleasure Craft Fuel Transfer	According to ARB, this measure should be retained pending technology development and ARB action in this category.	None

[a] "Higher Heating Value" means the total heat liberated per mass of fuel burned (British thermal unit per pound), when fuel and dry air at standard conditions undergo complete combustion and all resulting products are brought to their standard states at standard conditions.

TABLE 4-4

FURTHER STUDY - NEW RULES (CONT.)

Description	Comments	APCD/AQMD Rule that could be used to model a SBCAPCD Rule
Wineries and Breweries	Carried forward from the 2004 CAP.	San Joaquin Valley APCD, Rule 4694 Wine Fermentation and Storage Tanks (Adopted December 15, 2005)

Table 4.5 shows APCD rules currently in the rulebook that have been implemented in a more stringent fashion elsewhere in the state.

TABLE 4-5
FURTHER STUDY – EXISTING RULES

Rule	CAP Control Measure ID	Description	Comments	APCD/AQMD Rule that could be used to model a SBCAPCD Rule
342	N-XC 4 and N-XC-5	Boilers, Steam Generators and Process Heaters ≥ 5 MMBtu/hr	Revisions to Reduce the NOx Limits. [a]	San Joaquin Valley APCD Rule 4306, Sacramento Metropolitan AQMD Rule 411, and/or South Coast AQMD Rule 1146
331	R-PG-1	Fugitive Emissions Inspection and Maintenance	This is an ARB-identified performance standard and a CAPCOA-identified all feasible measure category. The South Coast AQMD and Bay Area AQMD rules have lower thresholds for leaks.	South Coast AQMD Rule 1173 and Bay Area AQMD Reg. 8, Rule 18
333	N-IC-3	IC Engines (Diesel-Fired)	Possibly change NOx limit for compression ignition internal combustion engines (ICEs) to 600 ppmv (or less).	San Joaquin Valley APCD Rule 4702 and South Coast AQMD Rule 1110.2
333	N-IC-1	IC Engines (Gas-Fired)	Possibly change NOx limit for cyclically-loaded ICEs from 300 to 50 ppmv.	San Joaquin Valley APCD Rule 4702
320	R-SL-1	Petroleum Solvent Dry Cleaners	Carried forward from the 2001 CAP. The South Coast rule requires the phase-out of transfer-type machines.	South Coast AQMD Rule 1102

[a] If the SBCAPCD does not receive an application for emission reduction credits that are to be generated by retrofitting low- NO_x technology (e.g., a burner designed to emit 9 ppmv NOx at 3% O2 or less or a selective catalytic convertor designed to emit 5 ppmv NO_x at 3% O2 or less) on combustion equipment subject to Rule 342 by July 1, 2009 and Santa Barbara County is nonattainment for the state one-hour or eight-hour ozone standard, the next Clean Air Plan will list this as a near-term proposed control measure.

TABLE 4-5

FURTHER STUDY – EXISTING RULES (CONT.)

Rule	CAP Control Measure ID	Description	Comments	APCD/AQMD Rule that could be used to model a SBCAPCD Rule
362	R-SL-10	Solvent Cleaning Operations	This is a CAPCOA-identified AFM category that the SBCAPCD needs to revise to be an all feasible measure. That is, we would need to change the rule limit from 50 to 25 grams per liter.	South Coast AQMD Rule 1171 and Ventura County APCD Rule 74.6
321	R-SL-2	Solvent Degreasers	This is a CAPCOA-identified AFM category that the SBCAPCD needs to revise to be an all feasible measure. That is, we would need to change the rule limit from 50 to 25 grams per liter.	South Coast AQMD Rule 1122 and Sacramento Metropolitan AQMD Rule 454
326	R-PT-2	Storage of Reactive Organic Compound Liquids	The Bay Area Rule 8-5 applies to tanks 264 gallons or greater and the San Joaquin Rule 4602 applies to tanks 1,100 gallons or greater, whereas the SBCAPCD rule exempts tanks that are less than or equal to 5,000 gallons capacity.	Bay Area AQMD Reg. 8, Rule 5 and San Joaquin Valley APCD Rule 4602

4.7 CALIFORNIA AIR RESOURCES BOARD AND U.S. EPA EMISSION CONTROL MEASURES

The ARB and the U.S. EPA have adopted numerous regulations that reduce pollution from motor vehicles, off-road equipment, consumer products and fueling operations. Emission reductions from these adopted control measures will help maintain attainment with the federal eight-hour ozone standard and help make progress toward the state ozone standards in Santa Barbara County. In addition, emission reductions from some of these measures will also reduce the precursors of secondary particulate, helping make progress toward attaining the state PM10 standard.

Some of the mobile source control measures and consumer product were initially presented in California's 1994 State Implementation Plan (SIP) for Ozone, adopted by the Air Resources Board (ARB or Board) on November 15, 1994. Since 1994, ARB has adopted many of the SIP measures, and also identified and adopted additional measures to further reduce emissions. Table 4-6 lists the adopted state and federal control measures that apply to Santa Barbara County. Additional details on the "2003 State and Federal Strategy for the California SIP" are available at this link: http://www.arb.ca.gov/planning/sip/stfed03/stfed03.htm .

TABLE 4-6
STATE AND FEDERAL MEASURES ADOPTED SINCE 1994 SIP

Description of Control Measure	Responsible Agency	Adopted
Defined Measures in 1994 Ozone SIP		
M1: Light-duty vehicle scrappage	ARB	1998
M2: Low Emission Vehicle II program	ARB	1998
M3: Medium-duty vehicles	ARB	1995
M4: Incentives for clean engines (Moyer Program)	ARB	1999
M5: California heavy-duty diesel vehicle standards	ARB	1998
M6: National heavy-duty diesel vehicle standards	U.S. EPA	1998
M7: Heavy-duty vehicle scrappage	ARB	Replaced with M17
M17: In-use reductions from heavy-duty vehicles	ARB	No
M8: Heavy-duty gasoline vehicle standards	ARB	1995
M9: CA heavy-duty off-road diesel engine standards	ARB	2000
M10: National heavy-duty off-road diesel engine standards	U.S. EPA	1998
M11: CA large off-road gas/LPG engine standards	ARB	1998
M12: National large off-road gas/LPG engine standards	U.S. EPA	2002
M13: Marine vessel standards	U.S. EPA	1999
M14: Locomotive engine standards	U.S. EPA	1997
M15: Aircraft standards	U.S. EPA	No
M16: Marine pleasurecraft standards	U.S. EPA	1996
CP2: Consumer products mid-term measures	ARB	1997/1999
CP3: Aerosol paint standards	ARB	1995/1998
Enhanced I/M (Smog Check II)	BAR[a]	1995
DPR-1: Emission reductions from pesticides	DPR[b]	Voluntary
Adopted measures not originally included in 1994 Ozone SIP		
Clean fuels measures	ARB	Multiple
Marine pleasurecraft (reductions beyond M16)	ARB	1998/2001
Motorcycle standards	ARB	1998
Urban transit buses	ARB	2000
Enhanced vapor recovery program	ARB	2000
Medium/heavy-duty gasoline standards (beyond M8)	ARB	2000
2007 heavy-duty diesel truck standards (beyond M5 and M6)	ARB/U.S. EPA	2001
Small off-road engine standard revisions	ARB	1998

[a] Bureau of Automotive Repair.

[b] Department of Pesticide Regulation.

4.8 CONCLUSION

The APCD, SBCAG, county, cities, and ARB have developed a comprehensive air pollution control strategy for Santa Barbara County. This strategy is updated in this 2007 CAP and identifies every feasible measure available to make progress toward attainment of the state ozone standards and maintenance of the federal eight-hour standard. Staff considered the ARB-identified performance standards, the CAPCOA-identified potential all feasible measures, the commitments in the 2004 CAP, and other APCD and AQMD rules to derive the proposed control measures and control measures for further study.

The 2007 CAP control measures include controls on all inventory categories contributing ROC and NO_x emissions: industrial processes, combustion sources, petroleum handling, solvent use, consumer products, waste burning, and mobile sources. The control measures evaluated and identified in this chapter, combined with the emissions reductions expected from on-road mobile sources in Chapter 5, show that Santa Barbara County is making significant progress in reducing emissions from sources subject to our control.