California Air Pollution Control Officers Association

Best Available Control Technology Clearinghouse

The CAPCOA BACT Clearinghouse Resource Manual: Information on Control Technology and Air Permitting Processes in California

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This document has been prepared by the staff of the California Air Resources Board (CARB) and is a joint publication of both CARB and the California Air Pollution Control Officers Association (CAPCOA). Its publication does not signify that the contents necessarily reflect the views or policies of either organization, nor does mention of trade names or equipment vendors constitute endorsement or recommendation for use.

PREFACE

The information in this document is meant for use by those involved in determining control technology requirements for stationary sources undergoing new source review. A list of such parties includes California air pollution control and air quality management districts (APCDs and AQMDs, respectively), public agencies, applicants, and consultants. The layout of this document is meant to complement the Best Available Control Technology Guideline published by the South Coast Air Quality Management District (SCAQMD). Much attention was given to using consistent source categories. Where the SCAQMD guideline catalogs current information on potential best available control technology (BACT) requirements, this document provides a tabulation of information on previous determinations.

Down through the years, the BACT clearinghouse has become increasingly computerized. One may now download this document or its future revisions using the California Air Resources Board Information System (CARBIS) by accessing the worldwide website at http://www.arb.ca.gov/bact/bact.htm. A searchable electronic database is also available at the same website. In the future, we wish to also have remote computer entry for submittal of BACT determination forms to the clearinghouse. Currently, however, forms may be submitted on hardcopy forms. If you wish, we can provide a forms and a manual explaining how to submit information to the BACT clearinghouse.

We wish to thank member APCDs of CAPCOA that have made this document possible through their contribution of information on BACT and lowest achievable emission rate (LAER) determinations. Without their efforts, the clearinghouse could not exist. Furthermore, we encourage the participation of APCD personnel in providing the CAPCOA BACT clearinghouse with new information on determinations when available. In addition, any suggestions regarding submittal procedures or publication of determination information can be addressed to Bob Giorgis of the Project Support Section, California Air Resources Board by phone at (916) 327-5601, by e-mail at rgiorgis@arb.ca.gov, or by mail to the following address:

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LIST OF ACRONYMS AND ABBREVIATIONS USED IN AIR POLLUTION CONTROL

Acronym	Acronym Meaning
AB1807	California Assembly Bill 1807
A/C	authority to construct
AFC	application for certification
APCD	air pollution control district
APCO	air pollution control officer
ARB	California Air Resources Board
AQMD	air quality management district
ATCM	airborne toxics control measure
BACT	best available control technology
BARCT	best available retrofit control technology
bhp	brake horsepower
CAA	Federal Clean Air Act
CAAA	Federal Clean Air Act Amendments
Cal/EPA	California Environmental Protection Agency
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCR	California Code of Regulations
CEC	California Energy Commission
CEM	continuous emission monitor
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations (40 CFR 51 is the same as Title 40, Part 51 of the CFR)
CI	compression ignition
CO	carbon monoxide
CTG	control technology guideline
DEIR	draft environmental impact report
DOC	determination of compliance
dscf	dry standard cubic foot
EIR	environmental impact report
EIS	environmental impact statement

ERC	emission reduction credit
GACT	generally achievable control technology
H&S Code	Health and Safety Code
HAP	hazardous air pollutant
HC	hydrocarbon
hp	horsepower
hr	hour
IC	internal combustion
ISR	indirect source review
LAER	lowest achievable emission rate
lb	pounds
lbm	pounds mass
LNG	liquified natural gas
LORS	laws, ordinances, rules, and standards
MACT	maximum achievable control technology
MM	prefix used for million
Acronym	Acronym Meaning
MMBtu	million British thermal units
MMscf	million standard cubic feet
MMscfm	million standard cubic feet per minute
MWe	megawatts electricity
NAAQS	national ambient air quality standard
NAP	nonattainment plan
NEPA	National Environmental Policy Act
NESHAP	national emission standard for hazardous air pollutants
NOI	notice of intent
NOx	oxides of nitrogen as nitrogen dioxide
NSPS	new source performance standard
NSCR	nonselective catalytic reduction
NSR	new source review
OSHA	Occupational Safety and Health Administration
PM	particulate matter
PMPD	presiding member's proposed decision
PM2.5	particulate matter with an aerodynamic diameter of 2.5 microns or less
PM10	particulate matter with an aerodynamic diameter of 10 microns or less

P/C	permit to construct
P/O	permit to operate
ppm	parts per million
ppmv	parts per million volume
ppmvd	parts per million dry volume
PCB	polychlorinated biphenyls
PSD	prevention of significant deterioration
PSI	pollutant standards index
RACM	reasonably available control measure
RACT	reasonably available control technology
RHC	reactive hydrocarbons
ROG	reactive organic gas
RVP	Reid vapor pressure
SB1731	California Senate Bill 1731
SCC	source classification codes
scf	standard cubic foot
scfm	standard cubic feet per minute
scfd	standard cubic feet per day
SCM	suggested control measure
SCR	selective catalytic reduction
SI	spark ignition
SIP	state implementation plan
SNCR	selective noncatalytic reduction
SOx	oxides of sulfur as sulfur dioxide
TAC	toxic air contaminant
T-BACT	toxics best available control technology
TEOR	thermally enhanced oil recovery
THC	total hydrocarbons
Title V	Title V of the Federal Clean Air Act
TPD	tons per day
TPY	tons per year
Acronym	Acronym Meaning
TRS	total reduced sulfur
TSP	total suspended particulate matter
VOC	volatile organic compounds

U.S. EPA	U. S. Environmental Protection Agency
yr	year

I. Introduction

The primary purpose of this document is to assist district personnel, applicants, and consultants in the process of determining control technology requirements for given stationary source categories. Secondarily, this manual provides other types of assistance in the permitting process. By control technology, we refer to best available control technology (BACT) and lowest achievable emission rate (LAER). Most districts in California have not adopted BACT or LAER definitions directly out of the federal Clean Air Act or Code of Federal Regulations. An explanation of these differences is given in Sections VII and VIII. A tabulation of current BACT and LAER definitions used by California districts is provided in Section XI.

In preparing this document, a large amount of effort went into making it user friendly, especially to those unfamiliar with the California air pollution permitting program. In addition to information on control technology requirements for new and modified sources, this edition provides information on the California air pollution permitting program structure and permitting process. Such information may not be necessary to those familiar with the permitting process and the nuances of BACT and its application in California. It is important, however, that even knowledgeable users read Sections I through III before proceeding to use the compilation of determination information provided in Sections XIII and XIV.

To aid the less informed user, a glossary is provided in Section XII for terms commonly used in air pollution control. In addition, a list of acronyms and abbreviations is provided in the front section of the document.

II. The CAPCOA BACT Clearinghouse

A. Original Goals

The California Air Pollution Control Officers Association (CAPCOA) BACT Clearinghouse was established by CAPCOA in 1983. It is administered by the California Air Resources Board (CARB) through the guidance of the CAPCOA Engineering Managers Committee. The clearinghouse was originally designed to:

1. Provide a centralized information processing center for BACT and LAER determinations made in California.
2. Promote consistency of BACT and LAER determinations between air pollution control districts (APCDs) by distributing statewide BACT information and providing assistance to

APCDs in accessing control technology information.

3. Provide transmittal of BACT and LAER information between districts and the EPA RACT/BACT/LAER Clearinghouse.

As time proceeds, other goals may be added to this list, including the processing of information on control technology performance, such as source tests.[1] In addition, it is now expanded to compile T-BACT determinations.

B. Hardcopy and Electronic Data Availability

Historically, information on BACT and LAER determinations in the clearinghouse has been provided through the issuance of quarterly summaries, which were sequentially added to a chronological listing of determinations. Since the use of a chronological listing is sometimes awkward and of limited usefulness, the CAPCOA Engineering Managers Committee suggested that an alternative format for determinations be provided based on stationary source category. This document, and more specifically the tables in Section XIV, was originally prepared in response to that and other related suggestions.

Traditionally, BACT and LAER determinations have applied to larger sources. However, changes pursuant to the California Clean Air Act of 1988 have reduced the level of emissions required to trigger BACT requirements. As a result, information on BACT and LAER is now needed for both small and large sources. Unfortunately, many small sources are permitted much more frequently than larger sources. As a result, we did not believe requesting documentation from districts for small sources on individual determination forms would be efficient. Instead, we have asked several of the larger districts to submit generic information on small-source BACT directly for given small-source categories.[2] This information is now published on the small-source BACT tables contained in Section XIII of this document. BACT determinations for larger sources are still handled on an application-by-application basis and segregated into source categories, although the categories used for the two sets of tables may be congruent.

A recent addition to the clearinghouse is online access to the electronic database. One can reach this database on the world wide web at http://www.arb.ca.gov/ under "Search

[1]Currently, one may submit such data to the BACT clearinghouse on the BACT implementation form. Once received, such data can be included in the BACT tables.

[2]The South Coast was not among these districts since it publishes a very complete volume that is available for purchase from the district.

Programs/Topics." This is a searchable database which we expect to improve upon as time proceeds. The record display is similar to that found in the tables of this document. In the future, we expect that one will be able to conduct custom searches of a more flexible form of the database. There will also be modifications to allow direct electronic submittal of information to the clearinghouse.

C. Other Information

In addition to information provided in the previous edition of this publication, this new edition has an expanded discussion on the structure of the California stationary source control program. This discussion augments information on control technology requirements for proposed new or modified units in California.

Finally, listings of district permitting contacts plus definitions of BACT and LAER have been revised so as to be current. Along with current definitions, historic definitions have been retained. Hopefully, this information will be useful in precisely assessing the BACT requirements at the time of each determination, no matter how old the determination.

III. General Guide to Use of this Document

BACT determinations for individual applications are listed by industrial equipment and process categories. With a few exceptions and modifications, these categories used in Section XIV are identical to those used in the Best Available Control Technology Guideline published by the South Coast Air Quality Management District (SCAQMD). Each grouping is given on individual pages listed in alphabetical order. Within each grouping, the determinations are listed in reverse chronological order according to when they were received by the clearinghouse.

Regarding the accuracy and completeness of information for individual BACT determinations, the user should be cautious and consult with the district contact before using information in this manual as a basis for BACT or LAER determinations in permitting actions. The clearinghouse receives summary information at the time an authority to construct is issued by a district. Although substantial time has been invested into evaluating the accuracy of determinations when received by the clearinghouse and during any transcription of information, the information received is not always sufficiently complete. In some cases, completed forms may not be totally accurate, and, in other instances, clearinghouse staff may misinterpret information submitted by districts. Furthermore, districts may modify determinations subsequent to submittal and without the knowledge of clearinghouse staff. As a result, when using information as a basis for a new BACT or LAER determination, the information should be cross-checked

with the district contact. Where the contact information provided is outdated, we suggest one use the alternative contact provided in Section X. However, your inquiries to district personnel about BACT determinations should be brief and to the point. Remember, district personnel have many demands on their time and are being gracious by taking time to answer your inquiries.

Finally, there is no pretension that the information in this document provides a comprehensive compilation of BACT and LAER decisions conducted by California districts. Determinations are submitted to the clearinghouse by California APCDs on a voluntary basis. With a few exceptions, the document only contains determinations submitted since 1985. Therefore, although this guide is a resource of BACT and LAER information, it should not be referenced as being an exhaustive listing of BACT determinations made in California.

If the readers primary interest is source-siting information, this document provides a description of both federal and state permitting programs followed by descriptions of individual siting processes. Table 1 provides an permitting roadmap for permit programs and processes covered in this document. Less informed users are advised to proceed sequentially through the document.

IV. The Regulation of Stationary Sources

A. Regulatory Authority

Most of the authority to regulate air pollution springs from the federal Clean Air Act. The federal Clean Air Act is a set of federal statutes that are implemented by the U.S. Environmental Protection Agency (U.S. EPA) via the Code of Federal Regulations (CFR). The original federal Clean Air Act was passed in 1970, but the act has been incrementally amended in 1973, 1977, and 1990. Currently, the federal Clean Air Act is composed of several titles, which are in turn divided into parts.

The structure of the federal Clean Air Act is shown in Table 2. Note that the table shows components of the act with corresponding parts from the CFR. The CFR serves as the body of regulations enforceable by the U.S. EPA. It is the body of regulations that implement the federal Clean Air Act statutes. From the state viewpoint, the CFR defines the criteria and constraints which the state program must meet to conform with federal requirements.

B. Delegation of Authority and Regulatory Structure

The regulation of stationary sources is conducted at three levels of government in California:

federal, state, and local government. Section 110(a)(1) of the Federal Clean Air Act requires states to directly regulate both stationary and mobile sources through a state implementation plan (SIP) in such a way as to provide "for implementation, maintenance and enforcement" of national ambient air quality standards (NAAQSs). For the purposes of stationary source regulation, Sections 110(a)(2)(A), (C) and (D) are especially important in specifying responsibilities of states:

> (2) Each implementation plan submitted by a State under this Act shall be adopted by the state after reasonable notice and public hearing. Each such plan shall--
>
> > (A) include enforceable emission limitations and other control measures, means, or techniques . . . , as well as schedules and timetables for compliance, as may be necessary or appropriate to

Table 1

Roadmap to Permit Programs and Processes Covered in this Document[3]

Potentially Regulated Entity	Potential Requirements	Governing Federal, State, and Local Statutes and Regulations	Regulating Agency	Sections Addressing Require-ments
Sources with Adverse Environmental Impacts		NEPA		V.B & G VI.B
	Environmental Document (i.e., negative declaration, mitigated negative declaration, or environmental impact report)	Public Resources Code 21000 et seq. and California Environmental Quality Act Guidelines	Lead Agency (usually local land-use planning agency)	
General Sources of Emission	Preconstruction permit; Compliance with nuisance regulations; State H&S Code prohibitions district prohibitory rules; New Source Performance Standards; Operating permit	Part A, Title I of the CAA; 40 CFR 50 and 60	District	IV.D-G V.C VI.A & C-E
		Part 4 of Division 26 of the California H&S Code		
		District rules and regulations		
Sources of Toxic Air Contaminants	Health Risk Assessment; T-BACT; National Emission Standards for Hazardous Air Pollutants (NSPS, GACT, & MACT); Airborne Toxic Control Measures; Compliance with AB2588 requirements	Section 112 of the CAA; 40 CFR 61 and 63	District	IV.H V.F VI.C & E
		Part 2 and 6 of Division 26 of the California H&S Code; Subchapter 7.5, Ch. 1, Div. 3, Title 17 of the CCR		
		District TAC source siting policies or siting rule		
Sources of Attainment Pollutants	Prevention of Significant Deterioration (PSD) permit from U.S. EPA or PSD review under district rule	Part C, Title I of the CCA; 40 CFR 52	District, if authorized, or U.S. En-vironmental	IV.D-F
		District rules and regulations		

[3]Acronyms used in this table are included in the list of acronyms near the front of the document.

			Protection Agency	
Sources of Nonattainment Pollutants	Compliance with New Source Review provisions	Part D, Title I of the FCCA; 40 CFR 5; Ch. 10 of Part 3 and Ch. 1, 2, and 4 of Part 4 of the California H&S Code District rules and regulations	District	IV.E & F V.C-E VI.C-E
Facilities Producing 50 MWe or More	Power Plant License	California Public Resources Code Division 15, Chapter 1, 2500 et seq.; Ch. 1, 2, and 5 plus Appendices A, B, C, and F of Title 20 of the California Code of Regulations	California Energy Commission	V.H VI.F

Table 2

Structure of the Federal Clean Air Act and Corresponding Parts of the Code of Federal Regulations Affecting the Permitting and Control of Emissions from Stationary Sources

Federal Clean Air Act Component			Some Corresponding Parts of Title 40 of the Code of Federal Regulations Related to Stationary Source Permitting and Control	
Title	Part	Topic	Part	Topic
I		Air Pollution Prevention and Control		
	A	Air Quality and Emission Limitations	50	National Primary and Secondary Air Quality Standards
			53	Ambient Air Monitoring Reference and
			58	Equivalent Methods
			60	Ambient Air Quality Surveillance
				Standards of Performance for New
			61	Stationary Sources
				National Emission Standards for Hazardous
			63	Air Pollutants (Pre-1990)
				National Emission Standards for Hazardous Air Pollutants for Source Categories (MACT & GACT)
			72	Permits Regulation
	B	Ozone Protection (repealed)		
	C	Prevention of Significant Deterioration of Air Quality (PSD)	51	Requirements for Preparation, Adoption, and Submittal of Implementation Programs
	D	Plan Requirements for Nonattainment Areas (Contains NSR)	52	Approval and Promulgation of Implementation Plans
			81	Designation of Areas for Air Quality Planning Purposes
II		National Emission Standards Act		
	A	Motor Vehicle Emission Standards		
	B	Aircraft Emission Standards		
	C	Clean-Fuel Vehicles		

III		General		
IV		Acid Deposition	72 73 76 78	Permits Regulation (Acid Deposition) Sulphur Dioxide Allowance System Acid Rain Nitrogen Oxides Reduction Program Appeal Procedures for Acid Rain Program
V		Permits (Operating Permits)	70	State Operating Permit Programs
VI		Stratospheric Ozone Protection	82	Stratospheric Ozone Protection
VII		Provisions Relating to Enforcement	64	Compliance Assurance Monitoring
VIII		Miscellaneous Provisions		
IX		Clean Air Research		
X		Disadvantaged Business Concerns		
XI		Clean Air Employment Transaction Assistance		

meet applicable requirements of this act;

B) . . .
(C) include a program to provide for the enforcement of the measures described in subparagraph (A), and regulation of the modification and construction of any stationary source
within the areas covered by the plan as necessary to assure that NAAQSs are achieved, including a permit program as required by parts C[4] and D[5];
(D) contain adequate provisions--
(i) prohibiting, consistent with the provisions of this title, any source or other type of emissions activity within the State from emitting any air pollutant in amounts which will-
(I) contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to any such national primary or secondary ambient air quality standard, or
(II) interfere with measures required to be included in the applicable implementation plan for any other State under part C to prevent significant deterioration of air quality or to protect visibility,

The State of California, in turn, conditionally delegates some of this authority to the county and regional air pollution control districts. According to California Health and Safety Code Section 39002:

> Local and regional authorities have the primary responsibility for control of air pollution from all sources other than vehicular sources. The control of vehicular sources, except as otherwise provided in this division, shall be the responsibility of the State Air Resources Board. . . . However, the state board shall, after holding public hearings as required in this division, undertake control activities in any area wherein it determines that the local or regional authority has failed to meet the responsibilities given to it by this division or by any other provision of law.

This state-to-local delegation of authority carries with it the responsibilities for permitting, enforcement, collecting data associated with emissions inventory, and the preparation of local air quality plans. Districts may obtain authority from the U.S. EPA to be the primary implementing and enforcing agency for certain federal requirements, such as, new source performance standards (NSPSs), national emission

[4]Requirements for areas which comply with national ambient air quality standards.

[5]Requirements for air quality plans in areas which violate a national ambient air quality standard.

standards for hazardous air pollutants (NESHAPs), and the prevention of signification deterioration (PSD) program. Note, however, that the last portion of the Section 39002 provides the Air Resources Board with the ability to take corrective action if the districts are unable to comply with state or federal requirements.

The Air Resources Board is part of a larger state umbrella agency called the California Environmental Protection Agency, or Cal-EPA. The board has eleven members that govern the agency and an executive officer who serves at the board's pleasure. The mission of the board members is to "exercise their independent judgement as officers of the state on behalf of the interests of the entire state in furthering the purposes of" Division 26 of the Health and Safety Code (Air Resources). The chairman assists the governor in establishing major policy and program matters on environmental protection and communicates the governor's direction to the agency. In reality, Cal-EPA now interfaces between the chairman of the Air Resources Board and the governor, with the Cal-EPA director serving as the Secretary for Environmental Protection.

Directives in the form of air pollution statutes from the state legislature are normally added to Division 26 of the California Health and Safety Code. The Air Resources Board may adopt regulations required to implement statutes. These regulations are then incorporated in the California Code of Regulations. The board also adopts guidance in terms of model rules and regulations which districts may in turn adopt in amended or unamended form. It is now more often, however, that the board interacts with districts in the development of such model rules and regulations through a statewide air pollution control organization called CAPCOA.

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State law also allows a regional air pollution control district to be formed when two or more counties to merge their air pollution regulatory functions. Currently, there are 35 districts in California, 10 of which are regional. Figure 1 shows a map of California that outlines each district. Each district has a governing board referred to as the district board. The district board is usually the board of supervisors for single county districts. Multicounty districts normally contain appointed members from county boards of supervisors and members of city councils from within the districts area of jurisdiction. The district boards further appoint the air pollution control officer and district hearing board members. The air pollution control officer is responsible for the day-to-day administration of the district. Each district also has a hearing board which is responsible for hearing appeals for temporary relief from either state visible emission requirements or rules and regulations of the district.[6]

[6]But not from the permit conditions of a preconstruction permit.

Summarizing in simple terms, the primary responsibilities for the stationary source control program and air quality planning are assigned to the local level within the three-tier structure (see Table 3). The California Air Resources Board (CARB), however, is still responsible for submitting plans and maintaining a program that is in compliance with Title 40 of the CFR, should any district fail to meet its responsibilities. As a result, CARB has an oversight role in assuring district compliance with CFR requirements, and may assume the powers of a district where the district has failed to meet federal or state requirements. In addition, the State of California adopts statutes into Division 26 of the California Health and Safety Code which provide criteria, requirements, and constraints that districts must meet in conducting their duties and maintaining their programs. District programs are documented in district rules and regulations as well as local air quality plans. The air quality plans are adopted by the districts in order to meet state and federal requirements. Those portions of the plans which are federally required are then approved by CARB and subsequently the U.S. EPA before becoming part of the federally-required State Implementation Plan (SIP). The U.S. EPA does not have to fully approve or reject required plans, measures, and rules. Partial or conditional approval may also be granted.

District requirements for stationary sources primarily fit into three categories. The first category of requirements are rules which every source or every source in a certain category of sources must meet. We often refer to such rules as prohibitory rules. They apply whether or not a source is new or existing. A second category of rules applied to stationary sources are permitting rules for the siting and operating of new and modified stationary sources. These rules can be divided into:

1. Rules which address the review of the design of a new project; and
2. Rules which address the proper operation of a unit or facility.

Rules addressing the review and design of new projects generally provide procedures and standards for granting preconstruction permits. Rules addressing proper operation provide the same for granting operating permits. Operating permits are granted after a new unit is constructed or an existing unit is modified in accordance with the constraints of a preconstruction permit and is ready for online operation.[7] The third category of rules are fee regulations. Fee regulations allow the districts to collect revenues for permits and perhaps emissions in order to augment their funding for their programs and services.

[7]Some rules would govern these activities for the facility rather than a unit. This is especially true for rules closely patterned after federal regulations.

Figure 1

California Air Pollution Control and Air Quality Management Districts

Table 3

Regulatory Matrix for Air Pollution Control in California

Government Level	Legislative Body	Statutes	Administrative Agency	Administrative Board/Entity	Regulations
Federal	U.S. Congress	Clean Air Act	Environmental Protection Agency	Agency Administrator	Title 40 of the Code of Federal Regulations
State	California Legislature	Division 26 of the Health and Safety Code	Air Resources Board Component of Cal-EPA	Eleven-Member Air Resources Board	Title 13 (Mobile Source) and Title 17 (Stationary Source) of the California Code of Regulations
Local	-	-	District	District Board	District Rules and Regulations

C. Exposure Tolerance and Standards

In general, an air pollutant which has an acceptable human exposure level can be assigned an ambient air quality standard. These standards are developed with the aid of studies which provide health-based criteria for the standard. As a result, pollutants having air quality standards are referred to as criteria pollutants. On the other hand, toxic air contaminants (TACs) are not generally recognized as having acceptable human-exposure levels.[8] These include carcinogens, mutagens, and teratogens.

There is a difference in strategy to achieve acceptable air quality as a result of the difference in the type of harm caused by criteria pollutants and TACs. Acceptable criteria for unharmful exposure to

[8]According to Section 39655 of the California Health and Safety Code, a toxic air contaminant is " an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose present or potential hazard to human health." Section 39655 also incorporates all federal hazardous air pollutants (HAPs) as toxic air contaminants by reference.

criteria pollutants may be stated in terms of air pollutant concentrations. In contrast, the acceptable level of exposure to TACs (of which federal HAPs are a subset) is typically based on dosages for carcinogens that are correlated with cancer risk. When combined with source and receptor exposure configuration, the effect of carcinogens can be modeled and expressed as excess cancers (above baseline). It is important to note that the level of excess cancers may depend on not only the concentration and toxicity of the pollutant, but the specific areal distribution of sensitive receptors around the source in terms of human exposure. Furthermore, noncarcinogenic effects resulting from TAC exposure can be evaluated using acute and chronic reference exposure levels.

National and California ambient air quality standards for criteria pollutants are listed in Table 4. Note that federal standards are divided into primary and secondary standards. Primary standards are air quality levels which are necessary to maintain an adequate margin of safety for the protection of public health.

Table 4

Federal and California Ambient Air Quality Standards (Reference: ARB Fact Sheet 39)

Regulated Pollutant	Averaging Time	National Standards			California Standards	
		Primary	Secondary	Method of Measurement	Concentration	Method of Measurement
Ozone	8 hour	0.08 ppm	0.08 ppm	Ethylene chemiluminescence	0.09 ppm (180 $\mu g/m^3$)	Ultraviolet photometry
	1 hour	0.12 ppm	0.12 ppm		-	-
Carbon monoxide	8 hour	9.0 ppm (10 $\mu g/m^3$)	-	Non-dispersive infrared spectroscopy (NDIR)	9 ppm (10 $\mu g/m^3$)	Non-dispersive infrared spectroscopy (NDIR)
	1 hour	35 ppm (40 $\mu g/m^3$)	-		20 ppm (23 $\mu g/m^3$)	
Nitrogen dioxide	Annual average	0.053 ppm (100 $\mu g/m^3$)	-	Gas phase chemiluminescence	-	Gas phase chemiluminescence
	1 hour	-	-		0.25 ppm (470 $\mu g/m^3$)	
Sulfur dioxide	Annual average	80 $\mu g/m^3$ (0.03 ppm)	-	Paraosoaniline	-	Ultraviolet fluorescence
	24 hour	365 $\mu g/m^3$ (0.14 ppm)	-		0.04 (105 $\mu g/m^3$)	
	3 hour	-	1300 $\mu g/m^3$ (0.5 ppm)		-	
	1 hour	-	-		0.25 ppm (655 $\mu g/m^3$)	
PM2.5	Annual arithmetic mean	15 $\mu g/m^3$	15 $\mu g/m^3$	Inertial separation and gravimetric analysis	-	
	24 hour	65 $\mu g/m^3$	65 $\mu g/m^3$		-	
PM10	Annual arithmetic mean	50 $\mu g/m^3$	50 $\mu g/m^3$	Inertial separation and gravimetric analysis	-	Size selective inlet high volume sampler and gravimetric analysis
	Annual geometric mean	-	-		30 $\mu g/m^3$	
	24 hour	150 $\mu g/m^3$	150 $\mu g/m^3$		50 $\mu g/m^3$	
Sulfates	24 hour	-	-	-	25 $\mu g/m^3$	Turbidimetric barium sulfate
Lead	30-day average	-	-	Atomic absorption	1.5 $\mu g/m^3$	Atomic absorption
	Calendar quarter	1.5 $\mu g/m^3$	1.5 $\mu g/m^3$		-	
Hydrogen sulfide	1 hour	-	-	-	0.03 ppm (42 $\mu g/m^3$)	Cadmium hydroxide STRactan
Vinyl chloride	24 hour	-	-	-	0.010 ppm (26 $\mu g/m^3$)	Tedlar bag collection, gas

						chromatography
Visibility reducing particles	8 hour (From 10 AM to 6 PM, PST)	-	-	-	Extinction coefficient of 0.23 per kilometer when the RH <70 %	ARB Method V
Standards applicable in the Lake Tahoe Air Basin Only						
Carbon monoxide	8 hour	-	-	-	6 ppm (7 $\mu g/m^3$)	Non-dispersive infrared spectroscopy (NDIR)
Visibility reducing particles	8 hour (From 10 AM to 6 PM PST)	-	-	-	Extinction coefficient of 0.07 per kilometer when the RH <70 %	ARB Method V

Secondary standards are established at air quality levels necessary to protect public welfare from the adverse effects of criteria pollutants. Such adverse effects may include damage to crops, building materials, and the environment. In contrast federal standards, state standards are not divided into primary and secondary standards. However, they are usually more stringent than national standards.

The federal and state air quality programs are primarily aimed at protecting citizens and secondarily property and the general environment from air pollution. In further presenting the statutory and regulatory relationships, the programs for criteria pollutants and TACs will be kept separate both to simplify the relationships and because the regulations of the two categories of pollutants are different.

Figures 2 and 3 are regulatory road maps that can help to facilitate the reader's understanding of the interrelationships between the federal, state, and local air quality laws, regulations, and programs in California. In order to more easily understand the following discussion on programs, it is to one's benefit to closely inspect Figures 2 and 3 before proceeding and to refer back to these figures periodically while reading through the text. While reading and interpreting these regulatory roadmaps, keep in mind the relationships between statutes, programs, and regulations (see the left column in the Figures). At the federal level, statutes are passed by Congress that provide the U.S. EPA with the authority to establish programs and publish regulations initiate requirements of the statutes. From the state perspective, the state has to design programs to carry out requirements mandated by federal regulations and any applicable state statutes. State and federal assistance is then provided to local districts in carrying out federal and state requirements at the local level through local programs and/or local rules and regulations. As a result, there is a web of relationships between statutes, programs, and regulations.

D. Federal Regulation of Criteria Pollutant Emissions from Stationary Sources

The stringency of both prohibitory and permitting rules depends on the type of pollutants emitted and the existing air quality problem. The federal Clean Air Act is structured to deal with air quality problems based on their severity. With regard to pollutants with national ambient air quality standards (i.e., criteria pollutants), it provides for more stringent control of criteria-pollutant emissions that potentially contribute to a violation of a national ambient air quality standard than those which do not.[9] Such emission control covers both those pollutants that contribute with direct emissions (i.e., primary pollutant emissions) and emissions of pollutants which participate in the secondary formation of criteria pollutants (i.e., recognized precursor emissions).[10] For instance, PM10 can be directly emitted into the atmosphere as a primary pollutant. In addition, it can be formed in the atmosphere largely from pollutants emitted by gases, such as oxides of nitrogen and oxides of sulfur, chemically converted to solid forms or absorbed onto ambient aerosols. Aerosol formed by chemical conversion or absorption onto existing aerosols are referred to as secondary PM10. Commonly, reactive organic compounds, oxides of nitrogen, and oxides of sulfur are considered precursors of PM10.

[9]In general, criteria pollutants are those pollutants for which there is a national ambient air quality standard. In California, the list of criteria pollutants is expanded to also include pollutants regulated by state ambient air quality standards.

[10]Precursors are primary emissions that contribute to the formation of secondary pollutants, i.e., a pollutant formed in the atmosphere. In theory, a pollutant could have many precursors and it may be debatable as to what primary emissions contribute to the formation of a secondary pollutant. Even the degree of contribution may be debatable. As a result, it is necessary to legally define precursor relationships in regulations. In California, new source review rules usually list such relationships in the definition sections of rules under the term "precursor."

To distinguish between areas with different levels of air quality problems, air quality jurisdictions are classified with respect to their compliance status for each national ambient air quality standard. In other words, for any given air quality jurisdiction in the United States, there are status designations for each criteria pollutant. For instance, areas where the carbon monoxide standard is violated are designated carbon monoxide nonattainment areas. On the other hand, if sufficient air quality monitoring indicated the area was in compliance with the carbon monoxide air quality standard, the area would be designated a carbon monoxide attainment area. If there are no violations and there is insufficient air quality monitoring data to make a determination, the area would be assigned unclassified status. It is important to note that the same area that is classified as attainment for carbon monoxide may be nonattainment for some other criteria pollutant, such as ozone.

Federal ozone nonattainment areas are further classified as marginal, moderate, serious, severe, or extreme based on the extent to which a national ambient air quality standard is violated.[11] Authority to regulate nonattainment pollutants is largely provided by Part D of Title I of the federal Clean Air Act (Plan Requirements for Nonattainment Areas). Authority to regulate an area designated as attainment or unclassified for a pollutant is largely provided by Part C of Title I (Prevention of Significant Deterioration of Air Quality). Part D generally requires that air quality plans achieve sufficient emission reductions to bring about compliance with any violated national ambient air quality standards within a given air quality jurisdiction. Such plans are part of and augment the SIP components otherwise required by Section 110 of the Clean Air Act.

E. Stationary Source Strategies in Nonattainment Area Plans

In terms of stationary source control for nonattainment pollutants, emissions are reduced through the application of technically- and economically-reasonable retrofit control technologies on existing sources. Such technology is referred to as reasonably available control technology (RACT). Measures incorporating RACT are referred to as reasonably available control measures (RACMs). To simultaneously prevent counteracting growth of the emission inventory due to siting new sources or modifying existing sources, new source review (NSR) rules are applied to new major sources and major modifications associated with significant increases in criteria-pollutant emissions. In California, most districts extend NSR requirements to some minor sources.

The U.S. EPA documents the regulatory application of RACT as RACMs with control technology guidelines (CTGs). A similar process of adapting potential control technologies for application in control

[11] For classification criteria, see Table 1 in Section 181 of the Federal Clean Air Act. Nonattainment area plan requirements can be found in Section 182.

measures was formerly conducted in California. In the late 1970's, CARB wrote guidelines in the form of model rules for control measures to be used in California air quality plans. This process was later replaced by a suggested control measure (SCM) process. The SCM process was a joint effort between CARB and the California Air Pollution Control Officers Association (CAPCOA). Districts may adopt these measures, often with some modifications, and then incorporate them into their respective local air quality plans. The plans are then submitted to ARB and subsequently the U.S. EPA for approval and incorporation into the SIP.

F. Federal Programs for Preconstruction Permits

The federal Clean Air Act has several programs that regulate the siting of new sources and modification of existing stationary sources. The most important of these programs is NSR and prevention of significant deterioration (PSD). NSR applies to sources emitting nonattainment pollutants. PSD applies to sources emitting attainment pollutants. Since it is easily possible that a given stationary source can emit both classes of pollutants, i.e., pollutants for which an area is classified for either attainment or nonattainment, the NSR and PSD rules may apply simultaneously to the same source for different pollutants.[12] The requirements of these programs apply to major sources and major modifications[13], although the definitions of "major source" and "major modification" differ between the two programs. The requirements of NSR or PSD vary depending on the particular local or state siting program, especially in California.

In most cases, major sources in nonattainment areas are those sources over 100 tons/year of any criteria pollutant, but may spread down to 10 tons/year depending on severity of a nonattainment area (see definition in Table 5). NSR would apply to these sources. A similar emission threshold level for attainment areas is 250 tons per year of an attainment pollutant, with exception of 28 listed sources.

[12]In some cases, a district NSR may be written to apply to all pollutants emitted from the source. As a result, emissions of attainment pollutants may be regulated by both NSR and PSD rules. In addition, a pollutant which is a precursor to a criteria pollutant and is simultaneously regulated directly as primary pollutant by another standard may be subject to simultaneous review by both programs. This is because the air quality jurisdiction may be attainment for one of the criteria pollutants while being nonattainment for the other. An example would be oxides of sulfur which are regulated as a primary pollutant with a sulfur dioxide standard and as a precursor to PM10.

[13]The terms "major source" and "major modification" apply at the facility level. In California, federal requirements have been adapted to apply at the unit level, a unit being a distinguishable entity within the stationary source usually referred to as "any article, machine, equipment or other contrivance or multi-component system, the use of which may cause the issuance of air contaminants, or which may eliminate, reduce or control the issuance of air contaminants." This definition is similar to what federal regulations refer to as an emissions unit.

These later 28 sources would be subject to PSD permitting requirements at 100 tons per year. More specifically, Table 5 shows the various definitions of "major source" used in the federal programs not only for PSD and NSR, but also HAPs and Title V. Stationary sources smaller than major sources are referred to as minor sources. As mentioned earlier, NSR requirements commonly extend to minor sources in California. Most California districts use relatively lower emission levels than those used at the federal level for triggering local NSR requirements.

As alluded to earlier, the NSR program addresses siting requirements for sources which directly emit criteria pollutants (or precursors to criteria pollutants) and have the potential to aggrevate air quality in a local air quality jurisdiction in violation of a national ambient air quality standard. As far as federal requirements go, this program only applies to nonattainment pollutants and specified precursors. NSR rules are intended to require appropriate levels of emission control and mitigation of any increase in emissions that would hinder progress towards compliance of the air quality jurisdiction with national ambient air quality standards.

For the purposes of federal NSR requirements, the appropriately stringent emission control for sources emitting nonattainment pollutants and their precursors is considered LAER. One can find the definition of LAER in the federal Clean Air Act[14], and it will be discussed later in detail. Other requirements may also include an air quality analysis to determine if a standard will be violated due to a permitting action, and, if triggered, mitigation of the emission increases with a resulting positive net air quality benefit.

In terms of mitigation requirements for nonattainment pollutants, NSR may require that significant emission increases from any given major source be mitigated by decreases from other sources in the area of impact.

[14] Often called best available control technology in California. Most California districts do not use the term "lowest achievable emission rate," but have a best available control technology definition that is similar, if not equivalent, to the federal definition of lowest achievable emission rate.

Table 5

Major Source Definitions for Various Programs of the Federal Clean Air Act[15]

Clean Air Act Program and Federal Regulation	Paraphrased or Abbreviated Major Source Definitions for Each Program
PSD 40 CFR 52.21(b)(1)(I)	(I) Major stationary source means: (a) Any of the 28 specifically listed stationary sources that emits more than 100 tons per year or more of any pollutant subject to regulation under the Act; (b) Notwithstanding the stationary source size specified above, any stationary source which emits or has the potential to emit 250 tons per year or more of any air pollutant subject to regulation under the Act; or (c) Any physical change that would occur at a stationary source not otherwise qualifying under this definition as a major source, if the changes would constitute a major stationary source by itself.
NSR Title III of the Federal CAA, Section 302(j)	(j) Except as otherwise expressly provided, the terms "major stationary source" and "major emitting facility" mean any stationary facility or source of air pollutants which directly emits, or has the potential to emit, one hundred tons per year or more of any air pollutant (including any major emitting facility or source of fugitive emissions of any such pollutant, as determined by rule by the Administrator). Note: The emission threshold level varies, in some cases, by pollutant and classification of the nonattainment area. The threshold level drops to 70 tpy for PM10 and 50 tpy for oxides of nitrogen, VOC, and carbon monoxide in serious areas, 25 tpy for oxides of nitrogen and VOC in severe areas, and 10 tpy in extreme areas. See Section 182 of the Federal Clean Air Act for requirements associated with each nonattainment classification.
Hazardous Air Pollutant Sources Title I Section 112(a)(1)	(a) MAJOR SOURCE.--The term "major source" means any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants. The Administrator may establish lesser quantity, or in the case of radionuclides different criteria, for a major source than that specified in the previous sentence, on the basis of the potency of the air pollutant, persistance, potential for bioaccumulation, other characteristics of the air pollutant, or other relavant factor.
Title V 40 CFR 70.2	Major source means any stationary source (or group of stationary sources that are located on one or more contiguous or adjacent properties, and are under common control of the same person (or persons under common control)) belonging to a single major industrial grouping and that are described in paragraph (1), (2), or (3) of this definition. For the . . . (1) A major source under section 112 of the Act; (2) A major stationary source of air pollutants, as defined in section 302 of the Act, that directly emits or has the potential to emit 100 tpy or more of any air pollutant . . .

[15]Note that some provisions in these definitions have been ignored since they are very lengthy and contribute mostly as exceptions to general rules.

	(3) A major stationary source as defined in part D of title I of the Act, including: (i) For ozone nonattainment areas, sources with the potential to emit 100 tpy or more of volatile organic compounds or oxides of nitrogen in areas classified as "marginal" or "moderate," 50 tpy or more in areas classified as "serious," 25 tpy or more in areas classified as "severe," and 10 tpy or more in areas classified as "extreme"; . . . (ii) For transport regions established pursuant to section 184 of the Act, sources with the potential to emit 50 tpy or more of volatile organic compounds; (iii) For carbon monoxide nonattainment areas: (A) That are classified as "serious," and (B) in which stationary sources contribute significantly to carbon monoxide levels as determined under rules issued by the Administrator, sources with the potential to emit 50 tpy or more of carbon monoxide; and (iv) For particulate matter (PM-10) nonattainment areas classified as "serious" sources with the potential to emit 70 tpy or more of PM-10.

When required, mitigation is usually provided in the form of emission reductions either from units already at the facility (if the facility is being modified) or other facilities within the district. If the emission reductions are contemporaneous[16] with the emission increases, emission reductions may be credited from one facility to the other.[17]

Emission reductions from the modification of a stationary source can be banked if the air quality jurisdiction has a banking rule. Such rules preserve emission reductions for use as credit against subsequent emission increases. They also provide for a more formal review of emission reductions and include criteria for determining what is a creditable emission reduction.

If an air quality jurisdiction has an emission banking rule, emission reductions may have to meet more stringent requirements imposed by the emission banking rule.[18] In most California banking rules, for example, emission reduction credits would have to be real, quantifiable, permanent (or at least be valid for the life of the emission increase), surplus, enforceable, and, sometimes, adjusted to a value that coincides with an emission rate (i.e., pounds per day, pounds per calendar quarter, or tons per year).[19] In addition, the ratio of emission reductions to new emissions (i.e., the emission offset ratio)

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[16]Or, to different degrees depending on district rules, before the increase due to the siting of the source to be offset.

[17]That is, the reductions will occur on or before the time when the new emissions units begin operation, or within an allowed time interval as specified in the NSR rule.

[18]However, the emission reductions used to offset new emissions will not have to be contemporaneous with the emission increase to be offset. That is, a banking rule allows emission reduction credits to be banked for use in offseting a future emission increase.

[19]Simple, informal explanations of emission reduction credit criteria are as follows:

1. Real: This criterion indicates that the emissions actually occurred.
2. Quantifiable: This criterion refers to the ability to assess the actual amount of emissions within reasonable certainty by following accepted methods of derivation and verifiable history of operation.
3. Surplus: The emission reductions are surplus if they are not required in any other way by an air quality plan to achieve an air quality standard.
4. Enforceable: This criterion refers to the ability to assure the reduction will occur.
5. Permanent: This criterion refers to the ability to retain the reduction so that it will not be diminished in the future. This requirement is not necessary if the emission increase has a definite life time. In such a case, the reduction can be temporary as long as the

may be offset at a ratio greater than 1:1.

One may ask how an NSR rule prevents emission growth if only major sources are required to offset emission increases. New non-major sources, i.e., minor sources, can be responsible for significant increases in a district's emissions inventory. The theoretical approach to this problem was to require more than 1:1 offset ratios for major sources. The thought was that the additional offsets would provide for mitigation of minor sources. In fact, the results of such a strategy were never realized, at least in California. Since there is no abundance of potential offset sources, relatively few sources were built large enough to trigger offsets, or they were built with very efficient control technologies that prevented sources from triggering NSR emission offset requirements. The result is that NSR rules tend to protect against excessive air quality declines, but do not live up to their billing as a maintenance measure. Later attempts at the state level to require offsets for all stationary sources in areas having serious air quality problems may have seemed unacceptably stringent to the regulated community, resulting in attempts to relax the no-net-increase requirements.

In attainment areas, the concern goes beyond protecting against new violations of a national ambient air quality standard. The PSD program is designed to prevent significant deterioration of air quality due to the siting of new or modification of existing sources in areas which comply with national ambient air quality standards. The federal Clean Air Act provides for establishing baseline air quality[20] in any PSD area where a new or modified facility is to be sited. The emissions of a given criteria pollutant from a new or modified facility are not to degrade the air quality by more than certain air quality increments above air pollutant concentrations existing on the date of PSD baseline air quality[21] or up to ambient concentrations corresponding to the national ambient air quality standards, whichever is more stringent. The size of the air quality increment depends on the classification of the area and air pollutant. At this time, however, not all criteria pollutants have listed air quality increments. Only sulfur dioxide, nitrogen dioxide, and particulate matter currently have listed air quality increments. If all goes as planned, there may also be a new increment for PM10 in the future.

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reduction lasts as long as the life of the increase it offsets.

[20]The baseline air quality is defined as the air quality for a criteria pollutant being reviewed under PSD that existed on August 7, 1977, i.e., the adoption date of the 1977 federal Clean Air Act Amendments. If the air quality at that time can not be established with historic air quality monitoring, a monitoring study of current air quality is usually required before an applicant submit an application for a PSD permit.

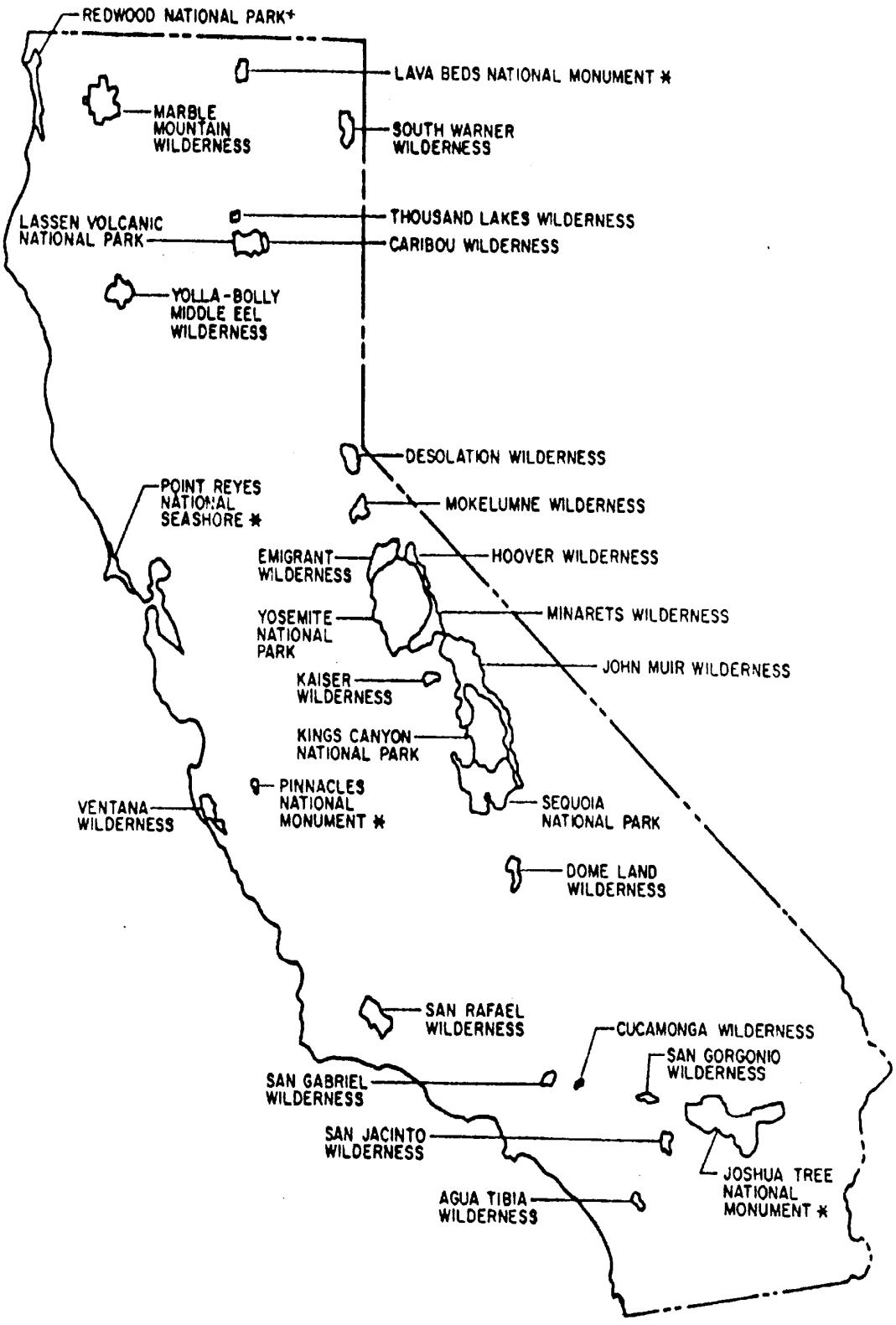
[21]January 6, 1975 for oxides of sulfur and particulate matter, or February 3, 1988 for oxides of nitrogen. The air quality existing on this date is often referred to as the air quality baseline.

All PSD areas were initially established as Class II areas, except areas of scenic value, such as international parks, national parks which exceed 6,000 acres, and national wilderness areas plus national memorial parks which exceed 5,000 acres. These later areas were assigned Class I status, which has smaller air quality increments to protect their natural state (see Figure 4, but note that Figure 4 only contains the original California Class I areas). If jurisdictions with Class II status wish to not comply with Class II air quality increment, they may redesignate to Class III, which has no increments. Exceptions are any of the following which exceed 10,000 acres: national monuments, national primitive areas, national preserves, national recreation areas, national wild and scenic rivers, national wildlife refuges, national lakeshores, national seashores, and national parks and wilderness areas established after the date of enactment of the CAA. These exceptions may redesignate only to Class I or II.

Table 6 provides a summary of area designations and the applicability of permitting programs and requirements. When inspecting Table 6, it is important to also remember that the NSR, PSD, and Title V programs all have different definitions of the term "stationary source" (see Table 5).

When siting a major source or conducting a major modification of an existing major source that emits an attainment or unclassified pollutant (i.e., a PSD pollutant), one must obtain a PSD permit. In addition to addressing emissions of criteria pollutants for national ambient air quality standards which are not violated in the air quality jurisdiction, the program also addresses several "noncriteria pollutants."[22] PSD permits may be issued by the U.S. EPA. However, in some cases, a state or local air quality agency will have an SIP-approved PSD rule or the U.S. EPA may have delegated such permitting authority to such an agency. In such cases, the siting or modification of pollutant-emitting facilities is conducted in accordance with the requirements of a state agency or district rule. Tasks conducted in the permitting effort include establishment of the emission increase, the air quality baseline, control technology requirements; assessment of the air quality impact on standards and air quality related values; assessment of compliance with increments in any nearby Class I areas, and, if needed, mitigation of the air quality impact. Establishment of the air quality baseline may require monitoring prior to submittal of an application.

[22]In addition to criteria pollutants, the emissions of several other air pollutants are also regulated by PSD rules. These include elemental lead, fluorides, sulfuric acid mist, total reduced sulfur compounds, hydrogen sulfide, chlorofluorocarbon, halons, acid gases, metals, furans, and dioxins from municipal waste combustors.



* ONLY THE WILDERNESS PORTIONS ARE DESIGNATED CLASS I.

Table 6. Federal Area Designations for Criteria Pollutants and Corresponding Federal Stationary Source Requirements

Designated Air Quality Status of Air Quality Planning Area with Respect to an NAAQS		Areas in Compliance (Attainment or Unclassified Area)			Areas in Violation (Nonattainment Area)
Governing Federal Clean Air Act Part		Title I, Part C: Prevention of Significant Deterioration (PSD) of Air Quality			Title I, Part D: Plan Requirements for Nonattainment Areas
Criteria for Designating Air Quality Planning Areas and Associated Requirements by NAAQS Compliance Status	Targeted Areas of Regulation	Wilderness Areas, Parks, and Areas of Scenic Beauty	Areas Retaining Air Quality Better than NAAQS	Areas that Wish to Develop within the Constraints of the Federal Clean Air Act	Areas Currently Violating the NAAQS
	Desired Air Quality Goal	Pristine Air Quality	No Significant Deterioration of Current Air Quality	To protect against violation of an NAAQS	Not Allow any New Violations or Exacerbation of the Existing Violations of NAAQS and to Bring Air Quality into Compliance with NAAQS
	Area Designation for NAAQS	Class I Area	Class II Area	Class III Area	Nonattainment Area
	Maximum Level of Air Quality Degradation Allowed	The More Stringent of Any Applicable PSD Air Quality Increments or NAAQS		NAAQS	
	Federal Planning Requirements	Visibility Protection Plan by Federal Land Manager in addition to SIP	SIP for each Criteria Pollutant in Accordance with Section 110 of the CAA and 40 CFR 166(a). Permit system requirements in Section 110.		District Amends SIP with Nonattainment Area Plan to Achieve and Maintain NAAQS by the Federal Clean Air Act Deadlines. Plan Incorporates RACMs and NSR.
Potential Federal Control Technology Requirements for Existing Sources		Best Available Retrofit Control Technology	Emission limitations and other measures as needed.		Reasonably Available Control Technology in the form of Reasonably Available Control Measures
Applicable Federal Preconstruction Permit Program and Requirements for the Given Criteria Pollutant Emitted from a New and Modified Stationary Source for the Corresponding Type of Area Designation	Minor Sources	No Permit Required if No Emissions of Any Criteria Pollutant and Certain Noncriteria Pollutants Meet PSD Major Source Criteria			No Permit Required If No Criteria Pollutant Emission Meets NSR Major Source Criteria
	Major Sources	PSD Requirements for Any Criteria Pollutant or Certain Non-criteria Pollutant Triggering Major New Source or Major Modification Criteria			NSR Requirements Apply for Any Criteria Pollutant Meeting Major New Source or Major Modification Criteria
	Federal Requirements for New Major Sources or Major Modifications	1. Determine Baseline Air Quality (with Monitoring, if necessary); 2. Apply Federal BACT and any Applicable NSPS to Control Emissions; 3. Offset Net Emission Increase (May Be Exempt by Satisfying Condition 4); & 4. Demonstrate Positive Net Air Quality Benefit via AQ Modeling that Applicable PSD Air Quality Increment Will not We Violated in Area or nearby Class I Areas and that NAAQS Will not Be Violated in Adjacent Nonattainment Areas			1. Demonstrate that Permitting Action Will Not Contribute to a New Violation of an NAAQS; 2. Apply Federal LAER and any Applicable NSPS to Control Criteria-Pollutant Emission; & 3. Offset Net Emission Increase; 4. Demonstrate a Positive Net Air Quality Benefit
Applicable	Minor Sources	No Operating Permit Required			

Federal Operating Permit Requirements for a Given Criteria Pollutant	Major Sources	Title V Permit

In addition to the above requirement for NSR and PSD, some requirements will apply no matter what the status of the criteria pollutant. For instance, NSPS will apply to certain major sources. For districts which have adopted NSPS requirements in the SIP or received delegation for the NSPS program, NSPS requirements are usually incorporated into district prohibitory rules by reference.

G. Federal Operating Permit Requirements

Up until 1990, the federal Clean Air Act did not address the need for an operating permit program. Finally, the 1990 Clean Air Act Amendments added an operating permits program under Title V. It is interesting to note that all the preconstruction permit programs (i.e., NSR, and PSD, and Section 112(g)) are under Title I and that NSR and PSD are an SIP requirement if districts receive delegation from the U.S. EPA.[23] In contrast, Title V is not to be incorporated into the SIP. Also, unlike federal preconstruction permit programs, the Title V operating permit program addresses all federally-regulated air pollutants, including HAPs and criteria pollutants.

There are several reasons for the adoption of Title V. Some are much more obvious than others. But underlying much of the U.S. EPA effort is an endeavor to gain greater influence in the permitting process and enforceability of conditions required by federal regulations. The six main reasons for adopting the program appear to be to:

1. Establish a uniform, national operating permit program;
2. Consolidate all of a facility's applicable federal requirements into one permit;
3. Provide for greater U.S. EPA participation in the permitting process, including the ability to object to the issuance of permits, and, if necessary, to issue permits that meet CAA requirements;
4. Allow for meaningful public participation in the permitting process.
5. Provide a mechanism for implementing other federal air quality programs, including Section 112 (HAPs) and Title IV (acid rain).
6. Provide more stringent criteria for permit conditions governing the enforceability of the permit, e.g., monitoring, recordkeeping, reporting, and record preservation.

Title V generally does not require additional emission controls. Instead, much of Title V is directed at providing a mechanism for enforcing existing federal requirements. Additional Title V requirements relate

[23]District Section 112(g) programs will not be included in the SIP. Major sources of HAPs sited after June 29, 1998 will be required to reviewed under a Section 112(g) program. Much of the Section 112 program for both new and existing sources will be implemented via Title V operating permits.

largely to permitting procedures, and requirements for monitoring, recordkeeping, and reporting. Its requirements affect existing major sources and some nonmajor sources as well as new and modified major sources. Existing sources subject to Title V must be reviewed for Title V compliance and issued a permit within three years of U.S. EPA approval of local Title V rules. Also, a permit review is required every five years or when a facility modifies. Unfortunately, Title V and its corresponding regulation, 40 CFR Part 70, are sometimes difficult to interpret. Title V program requirements have been challenged by industry and environmentalist, and the U.S. EPA proposes revisions to 40 CFR Part 70.

H. Federal Regulation of HAPs Emissions from Stationary Sources

Along with criteria pollutant emissions, the federal Clean Air Act provides authority to regulate HAPs, largely through Section 112 in Part A of Title I. Federal regulation of HAPs is mostly through NESHAPs. NESHAPs promulgated before 1990 are risk-based restrictions on the emission of HAPs. These NESHAPs are still in effect, but the federal structure for regulating HAPs has significantly changed with the passage of the 1990 amendments to the federal Clean Air Act. Both new and existing sources are now subject to a set of category-specific, technology-based NESHAPs, often called maximum achievable control technology (MACT) standards.[24] Similar but less stringent requirements aimed more at smaller, more dispersed sources are referred to as generally available control technology (GACT).[25]

New and modified source requirements are in the NESHAP general provisions and MACT standards. Section 112 also requires the U.S. EPA to develop requirements for new and modified major sources of HAPs that are not yet subject to MACT standards. New regulations promulgated in the CFR pursuant to Section 112(g) now require that no major source of HAPs can be constructed[26] or reconstructed[27] after June 29, 1998 without MACT, unless the control requirement is at least as stringent

[24]Actually, the term NESHAP refers to all emission standards promulgated under Section 112 of Title I. But often, HAP emission standards promulgated before July 21, 1992 are referred to as NESHAPs, while those promulgated after that date are often referred to as MACT standards.

[25]In an informal way, new-source MACT is similar to BACT, and GACT and existing-source MACT are similar to RACT. That is, they are applied on a category or source basis and can be revised to be more stringent when new control technologies become available. Unlike BACT and LAER, MACT is defined for existing as well as new and modified sources.

[26]In this regulatory context, a source undergoing construction can either be a new source or an addition at an existing facility that would constitute a major source of HAPs by itself.

[27]In this case, if a modified source has a fixed capital cost exceeding 50 percent of the fixed capital cost to

or more stringent as the best controlled similar source. Furthermore, California districts will have to adopt and implement programs that meet the requirements of this new regulation. A district that does not have a program in place by June 29, 1998 may, for a limited one-year period, have the U.S. EPA approve the district's case-by-case MACT determinations or request that the U.S. EPA conduct case-by-case MACT determinations for the district.

V. Stationary Source Regulation in California

A. Additional Planning Requirements in California

As a result of delays until 1990 in updating the federal Clean Air Act, the California legislature passed legislation to put a more stringent air quality planning program into effect with the California Clean Air Act of 1988 (CCAA). The CCAA required compliance with state ambient air quality standards. The stringency of planning and emission control requirements varied with extent to which a standard is violated. In addition, the SCM process was generally replaced by a process which generates measures incorporating best available retrofit control technologies (BARCT). BARCT is a state version of RACT, although it has a stringency more akin to BACT as defined by the federal Clean Air Act.[28] BARCT is required under certain conditions in California districts having moderate, serious, severe, or extreme air pollution as defined by Section 40921.5, Chapter 10, Part 1, Division 26 of the Health and Safety Code. The CCAA provided for BARCT along with other requirements, such as: reasonably available transportation control measures, provisions for no net increase of precursor or direct emissions of nonattainment pollutants from new or modified sources, measures promoting the use of low emission vehicles, and provisions for programs addressing area-wide and indirect sources. The additional planning requirements imposed by the CCAA were to be addressed in local air quality plans which were separate from the nonattainment area plans required by the federal Clean Air Act.[29]

B. Structure of the California Regulatory System

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construct, it is considered a reconstructed source.

[28]As defined by Sections 404406 and 40952, Chapter 10, Part 1, Division 26 of the Health and Safety Code, BARCT "means an emission limitation that is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of source."

[29]Information on state requirements for district ozone plans to attain state ambient air quality standards can be found in Chapter 10, Part 3, Division 26 of the California Health and Safety Code, particularly Sections 40918 through 40920.6.

Normally, states have the direct responsibility to meet requirements of the federal Clean Air Act and corresponding federal regulations. As stated earlier, however, California is different. As authorized by Division 26 of the California Health and Safety Code, the state (i.e., CARB) is directly responsible for regulating mobile source emissions. State law provides for delegation of permitting activities to the local and regional districts which meet certain state requirements found in Division 26 of the California Health and Safety Code. All California districts have taken advantage of the opportunity to conduct their own permitting program, at least for general permitting authority and NSR. The state still has oversight authority to monitor the performance of district programs and can even assume authority to conduct district functions if the district fails to meet certain responsibilities.

District permit programs for stationary sources are conditionally authorized by Section 42300 of the California Health and Safety Code. Regulations which just follow Section 42300 provide the minimum standards and constraints of any district permit program. Each district has its own set of regulations consistent with state requirements that will govern the siting process. These regulations govern both the siting of new stationary sources as well as the modification of existing stationary sources. Where applicable, district permit programs incorporate federal PSD, NSR, and Title V permit program requirements.

With regard to permitting sources of PSD pollutants, many California districts have neither adopted a PSD rule nor received delegation from the federal government for the PSD program. The only California districts which have authority to issue PSD permits are:

1. Bay Area Air Quality Management District
2. Mendocino County Air Quality Management District
3. Monterey Bay Unified Air Pollution Control District
4. North Coast Unified Air Quality Management District
5. Northern Sonoma County Air Pollution Control District
6. Sacramento Metropolitan Air Quality Management District
7. San Diego County Air Pollution Control District
8. Santa Barbara County Air Pollution Control District
9. Shasta County Air Quality Management District
10. South Coast Air Quality Management District

Where districts have not received authority to issue PSD permits, the program is administrated by the U.S. EPA. Federal permitting requirements are contained in the Code of Federal Regulations and enforced by the federal government.

In addition to district permitting, there are a few other programs that directly affect the siting of stationary sources in California. The California Environmental Quality Act (CEQA) of 1970 requires the review of projects to determine whether they will have a significant effect on the environment.[30] If there is a significant effect, an environmental impact evaluation may be required before any environmental permits can be issued. In addition, electric power projects over 50 MWe in size may have to undergo a process that incorporates the environmental impact review of CEQA with the district permitting process. However, in this case, the two processes are rolled into a larger process of getting a license to build and operate from the California Energy Commission (CEC). Both CEQA and CEC requirements are discussed later in more detail.

C. Typical Requirements of a District Permit Program

In the siting of a new source or modification of an existing source, a project will have to meet several types of district requirements. All sources operating in a district will have to meet any applicable prohibitory rules. These rules can apply on a general basis or by specific type of source.[31] Sources will also have to comply with a nuisance rule which provides general authority to the district to control the discharge of any air contaminants that will cause injury, detriment, nuisance, endangerment, discomfort, annoyance, or which have a natural tendency to cause damage to business or property. Finally, there are requirements which will constrain the design and operation of a new source which is not specifically exempt from district permit requirements. Except where a source is exempt from permit, the proponent of a new or modified source will normally have to demonstrate compliance with all three sets of the above requirements in any application submitted to the district.

District permitting rules are structured to require pollutant-emitting sources to obtain both permits to begin construction and permits to begin more permanent online operation, unless they are specifically

[30] According to Section 15002(g) in Chapter 3 in CEQA: California Environmental Quality Act, Statutes and Guidelines 1986, published by the Office of Planning and Research of the State of California, "A significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project."

[31] Unlike siting rules, some prohibitory rules can apply to all new and existing sources. Some are general rules such as visible emission standards, fuel sulfur content restrictions, and mass-loading (often referred to as grain-loading) standards. Others may apply narrowly as emission control standards for a specific category of source. Such is the case for control measures required by nonattainment-area plans. In either case, there is much less discretion in applying the requirements of prohibitory rules than there is in siting rules.

exempted. These permits are usually referred to as authorities to construct and permits to operate, respectively. Unlike federal permits, most California permits are issued for each nonexempt, pollutant emitting process or individual piece of equipment (for purposes of brevity, these entities are referred to as units, permit units, or emissions units[32]) found within a facility. As a result, any modification or addition of equipment at a facility does not usually affect the permitted operation of unmodified units. However, some requirements, such as control technology and emission offset requirements, may apply facility-wide, or at least over the aggregate of new and modified units at the facility.[33]

Most federal major-source siting requirements are incorporated into district rules. Within the context of a permitting action, federal permitting requirements for major sources will be triggered by the proposed emission level or projected air-quality impacts of the project. Many district requirements, both siting requirements and prohibitory rules, are triggered by emission levels of the project, or in the case of a modification, by the net change in emissions.[34] If the source exceeds emission thresholds for triggering control technology and mitigation requirements for air quality impacts, the application needs to demonstrate that the project meets such requirements. If the application does not appropriately address applicable requirements, the district may reject the permit application for not being complete.

In California, most district siting rules require evaluation of the air quality impact of a project to be based on proposed emissions of the project. Rarely will district source siting rules determine siting requirements using projections of air quality impacts generated by air quality models. Usually, air quality analyzes are only required when emission offsets are not provided, and even then the required analyzes are limited to primary pollutants or secondary pollutants that can be estimated without the aid of any complex photochemistry. In most cases only NSR requirements are imposed by California districts since PSD requirements are mostly enforced by the U.S. EPA. As a result, air quality modeling is mostly

[32]According to 40 CFR 51.165(a)(1)(vi) and 40 CFR 51.666(b)(7) referring to permit requirements for NSR and PSD, respectively, "Emissions unit means means any part of a stationary source which emits or would have the potential to emit any pollutant subject to regulation under the Act."

[33]That is, a new project at a stationary source undergoing modification may only affect that portion of the source which is constituted by new or modified units. If BACT or LAER is triggered for the project, it will only be required for new units or those undergoing modification. The owner of the source will not be required to retrofit BACT or LAER on the unmodified existing units that constitute the rest of the facility.

[34]In some smaller districts, a concept called net emission increases is still used to determine the emission impact of a permitting action. Essentially, all emission increases for a facility are accumulated from some baseline date. This baseline date is usually the first date the NSR rule was changed after the 1977 federal Clean Air Act Amendments. The net emission increase is determined each time the facility is subject to a permitting action.

used to demonstrate that the project does not create a new violation of a state or federal ambient air quality standard, or exacerbate an existing one. If there are projected new violations of standards or, in some cases, PSD increments, the project may not be approved, unless acceptable mitigation measures are provided as part of the application. The project is assumed to meet the net air quality benefit requirement if it complies with all district emission offset requirements.[35] The emission threshold level at which offsets are required varies by district and is in accordance with minimum requirements of the California Clean Air Act, as will be addressed later in this text.

In addition to an authority to construct, sources not exempt from permit have to get an operating permit. Beginning in the early 1970s, California districts already had required permits for both the construction and operational phase of any non-exempt new or modified emissions unit. A permit to operate was obtained after fulfilling all requirements and obligations stated in the authority to construct. A federal operating permit program was not authorized until the addition of Title V in the 1990 federal Clean Air Act Amendments. Following the implementation of Title V, there are new federal operating permit requirements enacted at the district level. Now major sources and, in some cases minor sources, will need Title V operating permits. Minor sources not subject to Title V requirements will still be required to comply with current local permit program requirements, if they are not specifically exempt.

Conditions on authorities to construct often include demonstration of compliance via a source test prior to continuous on-line operation. Such tests would be required after a reasonable amount of time for "shakedown." In many districts, the source may use the authority to construct as a temporary operating permit during the shakedown phase of new equipment operation. A significant modification under Title V is required to revise both the authority to construct and Title V permit before shakedown can begin. The addition of Title V requirements makes the permitting process more complex for major sources.

Table 7 provides a matrix of California stationary source and permitting requirements as a function of source status (i.e., exempt, nonexempt, minor, and major) and designation status of the air quality jurisdiction with respect to any given criteria pollutant. (You may want to contrast this with federal requirements given in Table 6.) Unlike requirements for getting a permit, PSD and NSR requirements for any given criteria pollutant emitted by a source will vary depending on the level of emissions and the area designation for the pollutant, i.e., whether it is attainment, nonattainment, or unclassified. As a result, a given permitted source being sited or modified could trigger PSD

[35]Demonstration of "net air quality benefit" is implicit if the applicant complies with any applicable district offset requirements.

requirements for the attainment pollutants it emits and NSR requirements for nonattainment pollutants it emits.[36] If the district has received authority from the U.S. EPA to issue PSD permits, only one preconstruction permit will be required for any given unit being sited or undergoing modification. If the district does not have authority to issue PSD permits, the applicant will have to obtain an authority to construct issued by the district that will cover all pollutants in addition to a PSD permit for any pollutants triggering PSD review. The PSD permit will be issued by the U.S. EPA. This latter permit will only cover PSD requirements. Note, however, that most districts will issue authorities to construct for each new or modified unit in the project. The U.S. EPA, on the other hand, will issue one permit for the whole facility.

Within the context of the federal program, NSR regulates only criteria pollutants. Similarly with PSD, except there are several "noncriteria pollutants" that are also regulated under the program. The Title V program addresses both HAPs and criteria air pollutants. Previously, the federal program did not have a "new source review" program for HAPs until the 1990 addition of Section 112(g) to the federal Clean Air Act. The recently promulgated federal regulations to implement Section 112(g) will now require districts to adopt and implement programs which require MACT for major constructing and reconstructing sources of HAPs. Until then, most California districts include toxic air contaminant[37] review coincident with permit review of criteria pollutants. It is apparent that Section 42301(b) of the California Health and Safety Code requires district permit systems to site a source so that it is in compliance with all district and state air quality regulations. Since every district has a nuisance rule, a district can claim authority to regulate toxic air contaminants in any district permitting action.

D. Contrasts Between the Federal and California Approaches

[36]In some cases, a given precursor to a criteria pollutant can be regulated both as a PSD and nonattainment pollutant. Such situations can occur when a pollutant is a precursor to two or more pollutants. For instance, oxides of nitrogen are precurors to nitrogen dioxide, ozone, and PM10. Similarly, oxides of sulfur are precursors to sulfur dioxide, PM10, and sulfate. If one of the secondary criteria pollutants is nonattainment while the other is attainment or unclassified, both PSD and NSR requirements can apply simultaneously.

[37]Recall that toxic air contaminants is a California regulatory term that by definition includes all federal HAPs.

The differences between federal and California stationary source regulation are summarized in Table 8. Principal among these differences, federal regulations are structured to regulate sources on a facility-wide[38] basis, with one permit issued on a per facility basis. Most California districts issue permits at the emissions unit level. A new facility and changes or additions to an existing facility requiring the issuance of one or more new permit is evaluated as a project[39] and the cumulative impact of several units composing a project may trigger additional requirements beyond those triggered by any individual unit.[40] Also worth noting are the differences in operating permit programs. Prior to Title V requirements of the 1990 federal Clean Air Act Amendments, the federal program had only required the issuance of a preconstruction permit. Finally, federal preconstruction permitting requirements address major new sources and major modifications (i.e., at a facility-wide level).[41]

Secondly, California siting requirements address minor as well as major stationary sources.

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[38]Strictly speaking, the federal term here would be stationary source, which is defined in both NSR and PSD regulations as "any building, structure, facility, or installation which emits or may emit any air pollutant subject to regulation under the Act." Furthermore, "building, structure, facility, or installation" is defined both in 40 CFR 51 and 52 for NSR and PSD. However, we use "facility" since some stationary source definitions in California have defined stationary source as either the emission unit or the facility-wide source, i.e., the stationary source definition was a "dual source" definition. Federal definitions for "Major stationary source" used in regulations for NSR and PSD are still "dual source" definitions.

[39]The project is considered the collection of emissions units which are new or being modified by the permitting action. For instance, the permitting of a new facility would constitute a project. In contrast, a project for a modified source would only include units proposed to be added to the facility, or existing units which are undergoing changes which require the addition or deletion permit conditions, or other modification of the former preconstruction or operating permits. Additionally, potential control requirements for BACT or LAER will only apply to that portion of the source which is being modified, i.e., the collection of new and modified units.

[40]A facility, as the term informally is used in this text, can be thought of as being composed of one or more equipment units (or emissions units in federal terms). These units are usually related by the fact that they are under common ownership, covered by the same standard industrial classification code, and are located on contiguous or adjacent property. Emissions units are essentially distinguishable pieces of equipment, processes, facility components, or pollutant-generating activities that collectively compose the facility and occur within the facility.

[41]Note that Title V is not a requirement of just attainment or nonattainment areas, otherwise it would be found in Parts C or D of Title I. It is not, therefore, part of the local air quality plan or SIP. In addition, it applies to both attainment and nonattainment pollutants.

However, certain emissions units are exempt from requirements for a permit. In addition, a unit may be required to get a permit and still not be subject to NSR or even Title V requirements. NSR requirements are implemented only if the permitting action causes emission increases beyond *de minimis* levels that trigger NSR requirements. Note that in California, exemptions from permit are stated by equipment type, where in federal regulations, there are no such exemptions for sources with emissions exceeding applicability thresholds.

There are two important consequences of these California-federal differences. First, minor sources are given permits in California. The second is that permits are issued mostly on a unit basis rather than a facility-wide basis. As a result, more sources are permitted in California than would otherwise be required under the federal permitting programs.

Another important difference between the federal and state programs is the level of applicability. Federal requirements apply mostly to major sources and major modifications. California rules require permitting of all minor sources and modifications that are not specifically exempt from permit. However, NSR requirements may not apply unless the size of the new facility or modification reaches a certain threshold emission level. Such requirements may include control technology (BACT or LAER), offsets of emission increases, air quality impact assessment, and certification of compliance of all other sources operating in California. In addition, the applicant will have to demonstrate that the source will meet all state and local prohibitory rules.

Finally, demonstration of a positive net air quality benefit can require modeling of if emission offset ratios are insufficient and/or the location of the offsets are significantly different than the emissions being offset. Federal guidance on the requirement for a positive net air quality benefit is present in Appendix S of 40 CFR 51. In California, NSR rules are designed with the implicit assumption that if the emission offset requirements of an NSR rule are met by a new or modified source, the requirement to demonstrate a positive net air quality benefit
is fulfilled.[42]

[42]There is no formal operating definition of "net air quality benefit." As a result, whether or not one has achieved a net air quality benefit is a somewhat subjective judgement within criteria provided by Appendix S of 40 CFR 51. One possible way to provide for a net air quality benefit may be to have an emission offset ratio of greater than 1:1 and progressively greater offset ratios for emission offsets located at greater distances from the location of the projected emissions being offset (see Section IV(A) and (D) of Appendix S in 40 CFR 51).

Table 7. California Stationary Source Requirements for Criteria Pollutants According to Source Status and Area Designation

Designated Air Quality Status of Air Quality Planning Area with respect to a State AAQS			Areas Not in Violation	Areas in Violation (Nonattainment Area)			
Pollutant Standards for Which Attainment Plans Are Required if District to Comply with State AAQS by the Earliest Practical Date			None	Ozone, Carbon Monoxide, Sulfur Dioxide, and Nitrogen Dioxide			
Local Planning Requirement Mandated by California Clean Air Act of 1988			No Plan Required	Local Plan to Attain State AAQS			
Severity of State AAQS Violation				Moderate	Serious	Severe	Extreme
State-Mandated Plan Requirements for Existing Stationary Sources			None	RACT for 5 to 250 tons/year; BARCT for more than 250 tons/year	BARCT for all Permitted Stationary Sources	BARCT for all Permitted Stationary Sources	BARCT for all Permitted Stationary Sources
Most Stringent of California and Federal Requirements for Siting Programs			Not Allow any New Violation of a State or National AAQS or Violation of Federal PSD Air Quality Increment	Not Allow any New Violations or Exacerbation of the Existing Violations of a State or National AAQS			
California Potential-to-Emit Threshold of Nonattainment Pollutants and their Precursors for "California BACT" Applicability to Siting New or Modifying Existing Stationary Sources			Districts Allowed to Set Thresholds within Constraints of Federal PSD Regulations	25 lbm/day	10 lbm/day	10 lbm/day	10 lbm/day
California Potential-to-Emit Threshold for Permit Program No-Net-Increase Requirement for Nonattainment Pollutants and their Precursors			None Required	25 tons/year	15 tons/year	10 tons/year	0 tons/year
Applicable Preconstruction Permit Requirements for the Given Criteria Pollutant Emitted from a New and Modified Stationary Source for the Corresponding Type of Area Designation	Units at Minor Sources	Exempt from Permit	No Preconstruction Permit Required				
		Not Exempt	Authority to Construct Issued by District	Authority to Construct Issued by District (In Most Districts Many Minor Sources Will Trigger New Source Review Requirements)			
	Units at Major Sources		Authority to Construct Issued by District; EPA Issues PSD Permit if District Does not Have Federally-Recognized PSD Rule	Authority to Construct and Meet New Source Review Requirements			
	Local District Requirements for New and Modified Units at Facilities Triggering PSD or NSR		Same as Federal Requirements if District Has Authority for Issuing PSD Permits.	1. Demonstrate Compliance with State and Local Air Quality Regulations; 2. Certification of Compliance; 3. Apply "California BACT" and Any Applicable NSPS to Control Pollutant Emission; and 4. Meet any Emission Offset Requirements			
Applicable Operating Permit Requirements	Minor Sources	Exempt from Permit	No Operating Permit Required				
		Not Exempt	Permit to Operate Issued by District				
	Major Sources		District Issues Permit to Operate and Title V Permit, or Combined Operating Permit Incorporating Title V Requirements				

Table 8

Differences between the Federal and California Permitting Programs

Aspect	Federal Approach	California Approach	Comments
Entity Regulated or Permitted in NSR and Title V Operating Permit Programs	Stationary sources are considered at facility-wide levels. Permits are granted at facility-wide level.	Emissions units, such as identifiable pieces of equipment and processes, are regulated as permit units within a project by many NSR rules. Title V operating permit programs generally follow federal approach; however, Title V permits may be issued on an emissions unit or process basis provided they are related back to the facility and there is a clear identification of the responsible official.	Most California districts issue a permit for each identifiable emissions unit rather than the whole facility, allowing for small permits with very specific conditions. Generally, the modification of an emissions unit permit is easier than modification of a large facility permit.
Exemptions from Permit and Minor Source Regulation	Generally, minor sources are exempt from NSR, PSD, and almost all Title V requirements. Minor modifications are exempt from any new NSR requirements. Title V permit requirements for minor sources are generally delayed until U.S. EPA rulemaking.	All emission sources, except for specific equipment or activity exemptions, are required to have a permit. NSR, and in some cases, PSD requirements, apply after project emissions exceed emission thresholds for applicability of such requirements. Generally, any facility is required to get a Title V operating permit if it is a major source. All nonexempt minor sources will need to get a non-Title V permit to operate.	The California program has a long history of requiring permits to operate in addition to preconstruction permits. It was not until the passage of the federal Clean Air Act Amendments in 1990 that there were federal requirements for operating permits. Just recently, districts started issuing these Title V permits.
Emission Calculations and Thresholds for NSR Requirements	Emissions are calculated on a ton per year basis for the stationary source or modification.	Emission thresholds for control technology requirements are set for units and projects on a pound per day basis. Emission thresholds for emission offsets requirements are set on a quarterly or annual basis, and are usually substantially lower than federal thresholds.	The regulation of emissions on a daily basis provides for protection against temporary daily spikes in emissions which could lead to the violation of daily standards.
Control Technology Requirements for New and Modified Stationary	BACT and LAER as defined in the federal Clean Air Act are required for PSD and NSR sources, respectively. LAER is considered the most	Most districts use the label of BACT for NSR control technology requirements similar to federal LAER requirements. However, many districts have added provisions for consideration of alternative basic equipment, fuels, and	California BACT and LAER requirements have been very stringent. Many California BACT definitions have technology-forcing provisions. In addition, California sources

Sources	stringent of any emission control used in a SIP control strategy or the most stringent emission limit achieved in practice.	processes as well as provisions for evaluating the economic feasibility of new technologically feasible control technologies.	have had more incentives to use better control technology to avoid low thresholds for emission offset requirements.
Demonstration of Net Air Quality Benefit when Siting a New Source or Modifying an Existing Stationary Source under NSR	Federal requirements call for the demonstration of a "positive net air quality benefit" for new major sources and major modifications. Modeling is needed for PSD pollutants, but nonattainment pollutants are required to have offsets and may satisfy the positive net air quality benefit if offset ratios are greater than 1:1.	California NSR requirements are not so focused on air quality impact assessment, but strive to directly relate mitigation requirements to new emission increases. That is, the applicant can determine offset requirements directly through emission calculations and offset ratios which increase with distance from the location of the proposed emissions to be offset. However, Calif. Health and Safety Code Section 42301(a) requires district permit programs keep new project from interfering AAQS compliance efforts.	The Calif. approach focuses on emission mitigation instead of AAQS protection, ignoring the effect in source-area reconfiguration. Most Calif. NSR rules do not have provisions to block new projects interfering with AAQS compliance; however, many do state that the intent of the NSR rule is to prevent projects from interfering with AAQS compliance efforts.

E. Emission Thresholds for Control and Mitigation Requirements in California

Although the California program for siting stationary sources generally follows the federal design and requirements, in many ways it is more stringent. For example, with the initial passage of the California Clean Air Act in 1988, very stringent requirements were imposed on the siting of sources emitting criteria pollutants or precursors affecting compliance with a state ambient air quality standard. The act called for permit programs to have a design so that there were no net emission increases for siting actions at stationary sources with the following potentials to emit:

Nonattainment Area Status with Respect to

State Ambient Air Quality Standards	Potential to Emit (tpy)
Moderate	25
Serious	0
Severe	0

Of course, districts which use emission thresholds in pounds per day would have to use an equivalent level.

In 1992, Assembly Bill 2783 added another nonattainment area status and reset the limits to

the following:

Nonattainment Area Status with Respect to State Ambient Air Quality Standards	Potential to Emit (tpy)
Moderate	25
Serious	15
Severe	10
Extreme	0

After passage of the California Clean Air Act, some of the larger districts dropped emission thresholds for triggering BACT requirements to 0 lb/hr. Assembly Bill 2783 addressed these thresholds by requiring BACT for stationary sources with the following potentials to emit:

Nonattainment Area Status with Respect to State Ambient Air Quality Standards	Potential to Emit (lbm/day)
Moderate	25
Serious	10
Severe	10
Extreme	10

Assembly Bill 3319, which was recently signed into law, will allow districts which are not classified as "extreme" to opt out of the above no-net-increase requirements. In order to opt out, a district's governing board has to find "that the no-net-increase permitting program is not necessary to achieve and maintain the state ambient air quality standards by the earliest practicable date." The Air Resources Board is currently working on criteria to make such a determination.

In addition to this last change mentioned above, there may be several other influences that will strongly alter NSR in the future. The current rules have not been revised to comply with the proposed U.S. EPA regulation on NSR which incorporates requirements of the 1990 federal Clean Air Act Amendments. District NSR rules may eventually become more compatible with district Title V rules. Secondly, the State of California is now assuming the role of permitting authority for certain qualifying portable equipment. Thirdly, there is a state effort to make some basic changes in environmental permitting. The California Environmental Agency (Cal/EPA) is seeking ways to merge the regulatory functions of different environmental media, such as air and water, into one regulatory entity from which one permit would be issued. Some of these influences will create a high probability for major changes sometime in the future. Finally, Assembly Bill 1777 (see Health and Safety Code Section 39607.5) will allow districts to have emission banking programs which include not only point sources, but also

area, indirect, and mobile sources. This will broaden the spectrum of sources available for mitigating the impact of large stationary sources.

F. Regulation of Toxic Air Contaminants

In the 1980s, the California program for noncriteria pollutants developed more rapidly than the corresponding federal program. The federal program for NESHAPs regulates federally defined HAPs, while the California program regulates listed "toxic air contaminants" or TACs through airborne toxic control measures (ATCMs). In 1991, AB2728 added all federal HAPs to the list of TACs.

Sources emitting TACs must comply with district requirements regarding the risk assessment and mitigation of TAC emissions. Some districts have established acceptable levels of health risk. Screening analyzes and risk assessments may be performed as part of the permitting process, or as part of the AB2588 Hot Spots Program. In the case of significant health risks, districts or lead agencies may require mitigation sufficient to reduce increased risk to tolerable levels. Such mitigation is often achieved through the application of very high efficiency controls referred to as T-BACT. In addition, a new or modified source, as well as existing sources, may be subject to either a NESHAP, a state-mandated ATCM, or both.

Local districts may need to implement the newer federal requirements referred to as generally available control technology (GACT) and maximum achievable control technology (MACT) for new and existing sources via Title V permits. Typically, GACT was meant to apply to area sources[43], and the more stringent MACT requirement will apply to major sources. By June 29, 1998, districts must implement requirements at least as stringent as Section 112(g) case-by-case MACT for new and reconstructed sources not already subject to MACT.

G. Review of Significant Effects on the Environment

In addition to permitting requirements, a new project siting in California must meet the requirements of the California Environmental Quality Act (CEQA). The act requires an evaluation of any project which may have a significant effect on the environment. It provides for the evaluation of the potential impact of new projects and the identification of potential mitigation measures.[44]

[43]In the context of the federal HAPs program, minor sources are referred to as area sources.

[44]Energy projects producing a net output of 50 MWe or greater are not reviewed under the CEQA process, but are subject to similar requirements under the power plant certification process which is overseen by the

CEQA review is coordinated by a local or state agency with the broadest discretionary authority in approving the project. Such a lead agency is usually a local land-use planning agency, such as a county planning department. The lead agency is responsible for coordinating with a statewide CEQA clearinghouse and responsible agencies, which are defined as agencies which issue permits. By law, no agency is supposed to issue any permits until the project has been approved by the lead agency.

H. Siting of Energy Projects

The California Energy Commission (CEC) has exclusive statewide authority for the licensing of thermal power plants (and related facilities) with a net generating capacity of at least 50 MWe or more. The application for certification (AFC) is a "one-stop process," bundling the authority and requirements of many state and local agencies into one permit process. A request for an exemption from the AFC process, referred to as small power plant exemption (SPPE), can be filed for plants with less than 100 MWe capacity. For a limited number of power plant types, a notice of intention (NOI) must be filed and a site approved before an AFC can be filed.

The CEC's enabling legislation is the Warren-Alquist Act, Public Resources Code Section 25000 et seq., which was passed in 1974.[45] The CEC has adopted *Rules of Practice* and *Procedure and Power Plant Certification Regulations*.[46] These are known as the siting regulations. The information requirements for an NOI, AFC, and SPPE are specified in these regulations.

The CEC's certificate (license) is in lieu of any permit, certificate, or similar document required by any state, local, or regional agency to the extent permitted by federal law. The site certification process is designed to eliminate duplication and regulatory uncertainty. As outlined by the legislature, the process provides:

1. One regulatory permit;
2. A decision in a specific time;
3. A simultaneous review by all state and local agencies;
4. A concurrent review by an independent staff;

California Energy Commission.

[45]See Chapter 6 (Power Facility and Site Certification, Sections 25500 through 25542).

[46] Title 20, California Code of Regulations, Chapters 1, 2, and 5.

5. A public planning process which examines potential sites before significant developer investment in specific facility designs and equipment; and
6. An assurance that only power plants actually needed will be built.

CEQA is designed to make certain that all potential environmental impacts are reviewed prior to permitting a major project. Environmental review required by CEQA is fully integrated into the CEC siting process and has been determined to be a certified regulatory or "functionally equivalent" program.[47]

For each project, a siting case committee is nominated by the CEC chairman and approved by the full commission. The committee consists of two commissioners who are referred to as the presiding and associate members. Responsibilities of the committee include establishment of the case schedule, regulation of the conduct of all proceedings and hearings, the formal record for the case, granting or denying petitions to intervene, and preparation of proposed decisions. The final decision to approve or disapprove a project is made by the full commission. Following the approval of the energy facility, the CEC compliance monitoring program ensures that the project owner complies with all conditions of approval which govern the design, construction, operation, and closure of the facility.

As required by regulation, all hearings, presentations, conferences, meetings, workshops and site visits are open to the public. The staff establishes a project-specific mailing list, and notices are used to inform the applicant, staff, intervenors[48], agencies, interest groups, and the public of all CEC, committee, or staff activities related to the project.

[47]See Title 14, California Code of Regulations, Section 15251(k).

[48]An intervenor is a member of the public or governmental agency which formally files to become party to the California Energy Commission certification proceedings on a given energy project.

VI. Permitting Processes in California

A. The Basic Function of Permits and Permit Programs

In general, permits serve several functions. At an elementary level they serve more or less as a source registry. They also provide a link between the regulator and the regulated in terms of communication of authorized activities and requirements. The registration and tracking of sources allows one to assess or inventory stationary source emissions. Permits allow a district to more easily carry out application and enforcement of prohibitory rules. Finally, the use of conditional permits constrains the construction and operation of a source so that it will theoretically comply with all applicable standards, rules, and regulations.

Beyond the basic functions of a permit, one can also apply discretionary requirements which are required for more specific application than prohibitory rules. An example of such requirements is found in NSR and PSD. These requirements provide a mechanism for siting a new source or modifying an existing source without causing a new, or exacerbating an existing, violation of an air quality standard. Another secondary function is to provide for a systematic review of the proposed construction and operation of the source so as to ensure compliance with more discretionary case-by-case requirements that depend on the size and nature of the source, such as stringent control technology and mitigation through reduction of existing emissions. In a broad sense, permitting programs can be thought of as measures to site sources while preventing a significant decline in local or regional air quality. This is especially true for direct or precursor emissions of pollutants which could exacerbate air quality standard violations or PSD air quality increments for attainment and unclassified pollutants. With regard to emissions of nonattainment pollutants, one of the primary reasons for a permitting program is to prevent emissions from new and modified sources from countering gains in emission reductions from existing sources through control measures in the local air quality plan. As a result, one can think of an NSR rule as an air quality maintenance measure within the context of the state implementation plan (SIP).

B. The CEQA Process

The CEQA process is described in Figure 5. If a project is not exempt from CEQA review, it is analyzed to determine if there is the possibility of a significant effect on the environment. If a significant effect is possible, the lead agency prepares an initial study to evaluate the potential for an effect. If there are no potential impacts, a negative declaration is issued by the lead agency. If a potential impact exists which the project proponent can and will commit to mitigate, a mitigated negative declaration can be issued. Otherwise, the lead agency will issue a notice of preparation (NOP) of an environmental impact report (EIR). At this point, responsible agencies may comment on the required content of the EIR. These comments are then used by the lead agency to produce a draft environmental impact report (DEIR). The purpose of a DEIR is to assess any significant effect on the environment by the project and to evaluate potential mitigation measures. This report is available for review by responsible agencies and the public during the public review period. Comments on the DEIR by any of these parties may be submitted prior to the end of the public review period on such topics as completeness and accuracy of the draft EIR. The lead agency then reviews these comments and prepares a final EIR with responses to comments on the draft EIR. The final EIR is used by the lead agency in approving the project and by responsible agencies in issuing permits.

Unlike district rules and regulations, CEQA analyzes must consider: impacts of facility construction, startup and shutdown; indirect emissions from increased mobile source activity; and the cumulative impacts of projects within the area. For example, construction impacts might include fugitive dust emissions raised by mobile construction equipment. Indirect emissions may include emissions from trips to and from work by employees as well as increases in emissions from commercial vehicles using the facility. Cumulative effects account for any incremental significant effect over a period of time from the siting of sources with individually insignificant effects.

If there is a significant impact, the lead agency will need to evaluate the need for mitigation measures identified in the EIR before approving the project. The applicant may agree to identified mitigation measures to get the project approved. However, if the applicant successfully argues that the mitigation is not feasible, the lead agency may approve the project siting due to overriding considerations.

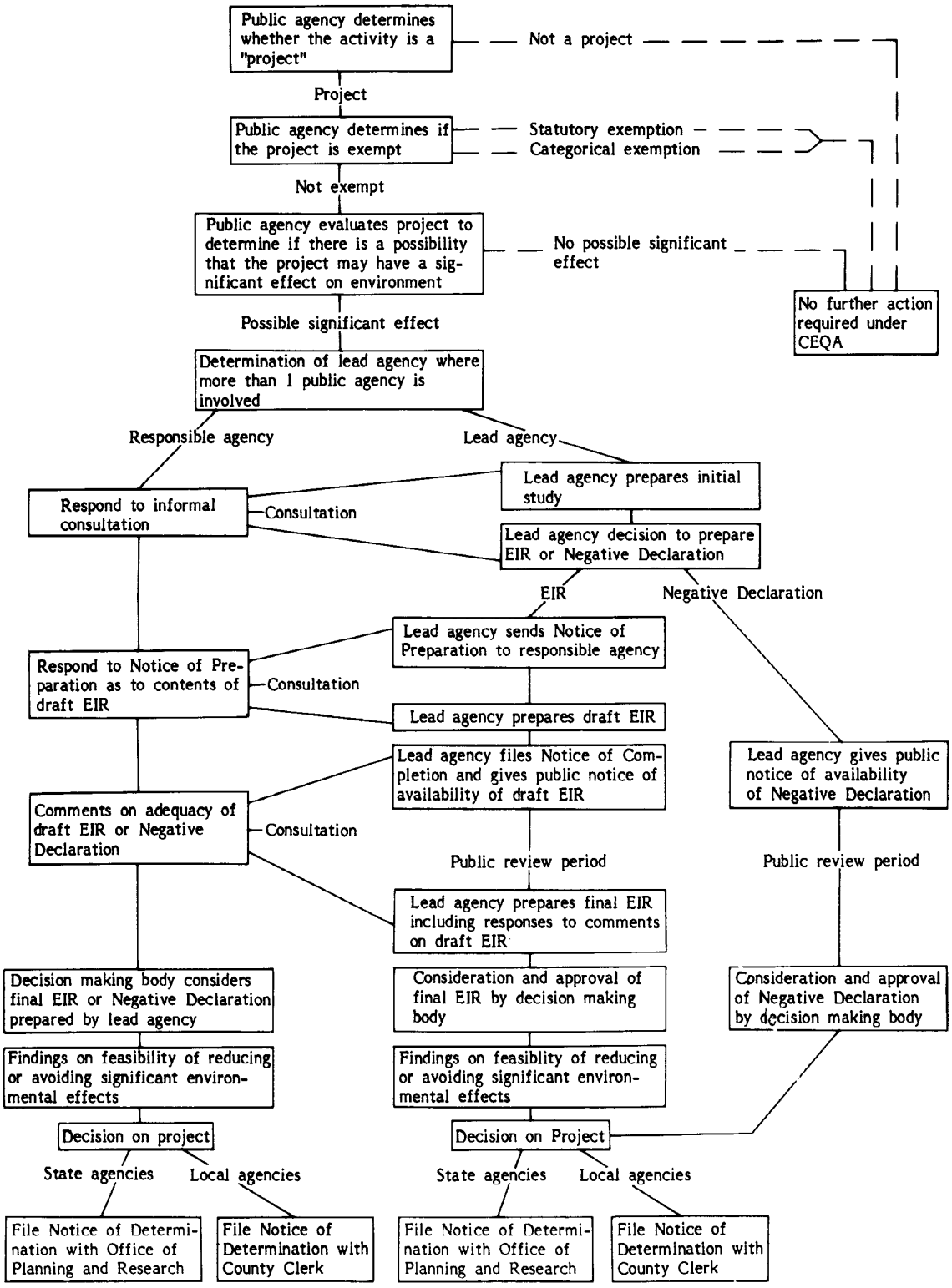
C. District Evaluation of a Project

An engineering analysis is usually performed to assess emissions and air quality impacts, as well as to document compliance of the project with all applicable district and state requirements. In essence, an engineering analysis traditionally satisfies part of the California Health and Safety Code requirements for a district permit program stated in Section 42301 (a) and (b), i.e.:

> 42301. A permit system established pursuant to Section 42300 shall do all of the following:
>
> (a) Ensure that the article, machine, equipment, or contrivance for which the permit was issued shall not prevent or interfere with the attainment or maintenance of any applicable air quality standard.
>
> (b) Prohibit the issuance of a permit unless the air pollution control officer is satisfied, on the basis of criteria adopted by the district board, that the article, machine, equipment, or contrivance will comply with all of the following:
>
> (1) All applicable orders, rules, and regulations of the district and of the state board.
>
> (2) All applicable provisions of this division.

In addition, since approvals are conditional, the engineering analysis should be accompanied by a proposed conditional authority to construct for each emissions unit.[49] Conditions on the authority to construct will not only include required limits, but also other limits and restrictions based on 1) information in the application and 2) district assumptions regarding design and operation made in determining the approvability of the project. In some cases, an air quality analysis will be required to demonstrate that the project will not interfere with achievement or maintenance of air quality standards.

[49]As defined in federal regulations, an emissions unit means any part or activity of a stationary source that emits or has the potential to emit any regulated air pollutant listed under Section 112(b) of the federal Clean Air Act. Note that an emissions unit is an identifiable portion of an encumbering facility, or stationary source. The term "stationary source" is avoided since some California NSR rules have previously used a dual-source definition, i.e., the term is defined to simultaneously refer to both the facility and any one of its component emissions units, depending on the context. As a result, rule emission calculation procedures and requirements apply at both the emission-unit and facility-wide levels. In such cases, analyzes of emissions and requirements must be conducted separately at both levels. Where an emissions unit and facility-wide analyzes result in two different requirements for a given emissions unit (such as, BACT or LAER being required in one analysis but not the other), the most stringent requirement would apply.



NOTE: This flow chart is intended merely to illustrate the EIR process contemplated by these Guidelines. The language contained in the Guidelines controls in case of discrepancies.

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Criteria pollutant review is relatively straightforward compared to toxic air contaminant (TAC) review. The objective with criteria pollutant review is to prevent violation of a standard or air quality increment through the application of NSR and PSD requirements. The review process for TACs is much less established. The objective of TAC review is to not allow increased risk to health beyond acceptable levels. The process of such a review and the acceptable level of risk can vary from district to district. Most districts do not even have rules governing the process of TAC review within the permitting process. Most are using policies; however, a CARB-approved risk management guideline is available for use by districts.[50] If an applicant wishes to site or modify a source of TACs, he or she should contact the district regarding its policies on TAC review.

D. The Permitting Process

Although the permitting process differs by district, there is a fair amount of interdistrict consistency. Flowcharts of the permit processes for authorities to construct and permits to operate are provided in Figures 6 and 7, respectively. Figure 6 depicts the generalized process for obtaining an authority to construct. The permitting process starts with the submission of an application; however, there is often a lot of work required of the applicant prior to application submittal. The required contents of an application are normally listed in the district rules and regulations, or a list of such contents is available upon request from the district.

After defining the project and specifying the basic equipment, the applicant needs to calculate both separate emissions from each component source and a total for the project to determine the applicability of various permitting requirements. In some cases, usually for small sources, no control requirements may apply. If a source is small enough, it may even be exempt from all permit requirements. In the case of large sources, the applicant may have to submit a complex application containing an analysis for control technology requirements, air quality analyzes, and proposals for air quality impact mitigation.

If emissions are high enough, application requirements normally include a BACT or LAER analysis. In this analysis, the applicant may be required to conduct a survey to determine what methods, measures, or control technologies are available for control of emissions. In some cases, alternative basic equipment, processes, and fuels have to be considered in addition to emission control technologies. The analysis would also include a justification of the applicant's proposed BACT or LAER.

[50]See CARB publication titled "Risk Management Guidelines for New and Modified Sources of Toxic Air Pollutants." This document is available from the Public Information Office of CARB.

Once the application is completed, it is submitted with appropriate forms and fees to the district. The district normally has 30 days to determine if the application is complete. If the application is deemed incomplete, the district should inform the applicant of what deficiencies make the application incomplete. The applicant can then appropriately modify the application and resubmit it to the district. As with the first application, the district has another 30 days to complete its evaluation.

After the district deems an application complete, the district normally has up to six months to process the application.[51] During the application review period, many districts will prepare an engineering analysis which documents emission calculations, satisfaction of district and state air quality regulations, assumptions used to evaluate the acceptability of the project, and required conditions of design and operation to achieve and maintain compliance. Many districts will also generate proposed permits (authorities to construct), usually one

[51] In cases where complications arise, the district may extend the review period beyond six months if the applicant approves.

for each unit of equipment to be sited or modified. If the project is large enough, a 30-day public review and comment period is required before a final district decision on the project. If public review and comment is required, the engineering analysis and proposed permits are made available to the public and, in some cases, other air quality regulatory agencies.

After consideration of all comments, the district may publish a decision to either approve the project application and issue final authorities to construct, or deny the application. Once authorities to construct are issued, the applicant may begin construction, and may even be authorized to conduct an operational shakedown of equipment. Normally, construction has to be completed within the life of the authority to construct.

Once the equipment is built and the district is satisfied that it can operate in compliance with its regulations, permits to operate can be issued. The generalized process for obtaining a permit to operate prior to Title V rules is depicted in Figure 7. In some cases, this process is still in effect for non-Title V sources. However, Title V of 1990 federal Clean Air Act Amendments now requires a more administratively sophisticated program to be adopted by all California districts. The generalized process used for Title V operating permits is shown in Figure 8. Just the same, non-Title V sources may still be sited under procedures similar to those in Figure 7.

E. Applicable Control Technology Requirements

Both NSR and PSD programs are associated with emission control technology requirements for sources emitting applicable pollutants above specified thresholds. These requirements are in addition to previous federal NSPS and NESHAPs. The federal NSR control requirement is called LAER. The PSD control requirement is called BACT. Both were specifically defined in the federal Clean Air Act Amendments of 1977 and the Code of Federal Regulations. However, as stated earlier, these definitions have mostly not been adopted, much less uniformly adopted, by California districts.

One may wish to note that NSPS and NESHAPs are federal requirements. Much like other programs, e.g., NSR and PSD, the programs can be delegated to the district. In fact, most districts have received delegation. Districts that have received such delegation usually use incorporation of all NSPSs and NESHAPs into their rules by reference with a prohibitory rule.

F. Power Plant Certification Process

The power plant siting process has several major components. They are described briefly below. The applicability of any one of these components will depend on the source configuration and

status. However, the reader should be aware that the application for certification (AFC) process will normally be the most applicable process for large power plants, while small power plants applicants may be strongly motivated to seek a small power plant exemption (SPPE) for power plants under 100 MWe net capacity.

The reader should note that the information in this subsection is intended only for the purpose of providing background on the siting program for combustion power sources. It should not be relied on solely by any applicant seeking action on an application by the CEC. Potential applicants should contact the CEC directly for current information on power plant siting processes. Alternative information sources on the CEC siting process is provided in Subsection H of this section.

Notice of Intent (NOI): The original purpose of the NOI process was to determine the need for the proposed facility, determine the acceptability and suitability of the proposed facility and site, and to evaluate alternative sites so as to reduce the risk of relying on a single proposal or site. Due to legislative changes in 1993 and policies set forth in the CEC biennial electricity reports, it is unlikely that an NOI will be required for future energy facility applications. Projects which are exempt from the NOI requirements are specified in Section 25540.6 of the Public Resources Code.

There is a filing fee for an NOI based on the net generating capacity (one cent per kilowatt) and no process costs. The applicant must also file 150 copies of the NOI. The fee is not to be less than $ 1,000 or more than $ 25,000. The NOI process typically takes about one year once the filing is deemed adequate.

Application for Certification (AFC): Similar to the NOI process, the AFC process (see Figure 9) consists of six components: pre-filing, data adequacy, discovery, analysis, hearings, and decision. During the AFC process, the design, construction, operation, and closure of the facilities are closely examined in relation to applicable laws, ordinances, rules and standards (LORS). In addition, adverse environmental effects are identified and mitigation measures established, and the need for the facilities is determined or reconfirmed if preceded by an NOI. The AFC process ensures that proposed facilities are safe, reliable, environmentally sound, in conformance with the integrated assessment of need, and that they comply with all LORS.

The CEC staff reviews each AFC filing and determines if the filing contains the information required by the CEC siting regulations (Title 14, California Code of Regulations, Chapter 5, Appendix B). The staff then forwards its determination to the commission who will decide to accept or reject the staff's recommendation. Once an AFC is deemed to be "data adequate," the process moves to the discovery phase. During this phase the CEC staff will personally gather information and develop data or obtain information and data from the applicant via data requests. Workshops are frequently used to discuss those requests and the subsequent responses. During the discovery phase, staff begins to prepare their preliminary staff assessment (PSA).

The analyzes in the PSA are divided into about 23 technical areas. The two areas that directly address air quality are public health and air quality. The public health section largely addresses nuisance and health impacts associated with exposure to TACs. The air quality section directly addresses air quality impacts of criteria pollutants and their mitigation, as well as compliance with state and local air quality regulations. This analysis usually goes beyond that required by district rules and regulations. And if there is still any residual, unmitigated significant effect on the environment after the application of applicable district and state air quality laws, the CEC may impose additional air pollution control requirements. After the PSA is prepared, the staff may have additional workshops to receive direct comments from the public and agencies. Participants and the public are also invited to make written comments.

The next part of the process is the evidentiary and adjudicatory hearings. Prior to commencement of the hearings, CEC staff, the applicant, and intervenors will submit their testimony. The final staff assessment, which contains the staff's analyzes and recommended conditions of

certification, serves as the staff's testimony. During the hearings they give direct testimony and may be subject to cross examination by other parties. Commissioners, commissioner advisers, and the hearing officer may also ask questions of any of the parties. Once the hearings are closed, the hearing officer, under the supervision of the presiding member, prepares the presiding member's proposed decision (PMPD). This document is the equivalent of a DEIR. Upon consideration of the PMPD, all parties and the public are given 30 days for review and comment. At the end of the comment period, the proposed decision is finalized, making it the equivalent of an EIR. After a 15-day comment period, the proposed decision is considered for approval or disapproval at a regularly scheduled business meeting of the full commission. If the full commission approves the PMPD, the power plant is certified and the proposed decision is finalized. In some cases, however, the committee may approve the presiding member's proposed decision with amendments. The final decision includes information about the project and the nature and result of all proceedings. The decision also contains conditions for approval of the project which includes air quality conditions as explained below.

Determination of Compliance (DOC) as Part of the AFC: Although the responsible air pollution control district does not issue any preconstruction permits, the CEC siting process incorporates procedures to determine the compliance of the project with district requirements. For instance, the district participates in reviewing the application for completeness. It then conducts further analysis during the discovery phase to determine any need for more specific information needed to determine the acceptability of the project. During the analysis phase, the district independently evaluates the project and prepares an engineering analysis. The engineering analysis documents the configuration of the facility, its component sources, emissions, applicable regulations, air quality impact assessment, and lays the foundation for all proposed authorities to construct for all would-be permit units. The district's analysis contains design, operation, and other conditions needed to ensure compliance with district and state air quality regulations.

This in-lieu "A/C analysis," including recommended permit conditions, is submitted to the commission as a DOC to the CEC. Essentially, the DOC is a statement by the district (with accompanying analysis) that the project complies with all district and state air quality regulations. It essentially acts as an authority to construct.

According to many district rules, the DOC must be prepared no later than 180 days after the AFC is deemed complete. However, an earlier date may be desirable in order for the DOC to be filed and incorporated into the PSA. The district finalizes the DOC no later than 240 days after the date that the application is deemed complete so that it may be incorporated into the final staff assessment. The district staff may be called on to testify on the conditions or the analysis in the DOC. If the district has intervened, then the district may present separate testimony. When a project is approved, the

commission decision will contain air quality conditions of certification. Some of these conditions will be in addition to those recommended by the CEC staff. However, most will reflect the requirement set forth by the district in the DOC. After the facility is constructed, the district is then allowed by the CEC to issue an operating permit to allow local enforcement of the air quality component of the compliance plan. This allows the district to conduct normal enforcement activities in assuring compliance of the new facility with state and district air quality rules and regulations.

Small Power Plant Exemption (SPPE): The CEC's approval of an SPPE exempts the proposed project from the CEC's siting jurisdiction and refers the project to the local agencies for permit processing. In order to qualify for an SPPE, the project must meet two criteria:

1. The project must have no substantial adverse impact on the environment or energy resources resulting from its construction or operation; and
2. It must conform with the CEC's adopted energy demand forecast.

The emphasis of the review is on environmental impacts and need assessment. Unlike the AFC only limited engineering analysis is performed by the CEC staff, and there is no data adequacy review. The CEC serves as lead agency under CEQA for any SPPE. The resulting staff analysis is contained in an initial study which supports the findings necessary for a negative declaration or mitigated negative declaration. The initial study serves as the testimony of the CEC staff. After the CEC approves an SPPE and issues the negative declaration, the initial study/negative declaration is also used by responsible agencies which must subsequently issue permits for the project. Therefore, after an SPPE approval, the applicant only needs to obtain a preconstruction permit from the applicable air pollution control district without any need for any additional CEQA document.

There is no filing fee, but 100 copies of the SPPE must be filed. The applicant must pay the costs of staff's environmental review. The typical processing time for an SPPE is six months.

G. Information Resources for Permitting of Stationary Sources

The following are sources of information one may use to get further information on stationary source permitting programs:

ARB Web Page

Access: The web page is at http://www.arb.ca.gov/.

Contents:

a. Federal Clean Air Act.
b. California Health and Safety Code. You may also order a copy of Division 26 of the Health and Safety Code from the Air Resources Board Public Information Office at (916) 322-2990.
c. Rules and regulations for California districts.
d. Downloadable BACT compilation document on Wordperfect 6.1 format. Note that you may keep your tables current since they are periodically updated.
e. Searchable BACT database.
f. Business assistance information.

The U.S. House of Representatives Internet Law Library

Access: Web page at http://law.house.gov/cfr.htm.

Contents: Code of Federal Regulations.

Office of Planning and Research, California Governor's Office

Access: Web page at http://ceres.ca.gov/planning/, then choose CEQA.

Contents: The web page contains the CEQA statutes, regulations, and guidelines. One may also order the manual from General Services at (916) 574-2200. The clearinghouse is part of the Office of Planning and Research. The manual is called the "California State Clearinghouse Handbook." The current edition is that of September 1987.

California Office of Permit Assistance, California Trade and Commerce Agency

Access: Web page at http://www.cal.gov/.

Contents: The web page has access to the California Permit Handbook. One may also order the handbook at (916) 322-4245.

U.S. Environmental Protection Agency (U.S. EPA)

Access: Web page at http://www.epa.gov/ for U.S. EPA in general, or http://www.epa.gov/oar/ for the Office of Air and Radiation.

Contents:

a. U.S. EPA publications
b. State agency addresses and phone numbers
c. Technical contacts
d. Organizational structure
e. Federal Clean Air Act and 1990 amendments
f. Federal regulations

U.S. Environmental Protection Agency Technology Transfer Network Bulletin Board

Access: Web page at http://www.epa.gov/ttn/

Contents: There is an array of services offered on this bulletin board. Examples are:

a. Emission Measurement Technical Information Center (EMTIC)
b. RACT/BACT/LAER Information System (BLIS)
c. National Air Toxics Information Clearinghouse (NATICH)
d. New Source Review (NSR)
e. Support Center for Regulatory Air Models
f. Federal Clean Air Act Amendments (CAAA)
g. Control Technology Center (CTC)
h. Small Business Assistance (SBAP)

California Energy Commission

Access: The web page is at http://www.energy.ca.gov/html/energyinfo.html.

Contents: The web page has information on the structure of the agency and functions of the CEC and its various divisions and offices. In addition, there is information about the siting process and the following:

a. The Warren-Alquist Act, Public Resources Code 25000 et seq.
b. The Commission Siting Regulations, Title 20, California Code of Regulations, Chapters 1, 2, and 5
c. A more detailed explanation of the siting processes, including flow charts for the AFC and SPPE processes
d. A guide to public participation in the siting process
e. An explanation of the roles and responsibilities of various parties, including the commissioners, siting case committee, hearing officer, public adviser, applicants, CEC staff, other public agencies, intervenors, public, and executive director
f. A commission siting history

Other Information:

a. All siting process questions should be directed to the Energy Facilities Siting Office at (916) 654-5100.
b. The Publications Unit has copies of past commission decisions which cover the requirements and conditions for each approved AFC and SPPE. The Publications Unit can be reached at (916) 654-5200.
c. The CEC's public adviser can be reached at (800) 822-6228 or (916) 654-4489. The public adviser is an attorney who is available to explain the CEC's legal procedures, advise the public on the most effective methods of participation, facilitate public participation, assist the public in obtaining records, and other duties.

VII. Federal versus California Control Technology Requirements

California Health and Safety Code Section 42300 authorizes delegation of stationary source permitting authority from the state to local air pollution control districts. Each district has its own set of definitions and rules. As a result, the definition of BACT and, where used, LAER can vary by district.

In the federal Clean Air Act Amendments of 1977, federal statutes and regulations applied BACT and LAER requirements separately in the PSD and NSR programs, respectively. Sources needing a permit under the PSD program are subject to BACT as defined by the Code of Federal Regulations. Sources needing a permit under the NSR program are potentially subject to LAER. In many cases, permitting authorities used BACT and LAER definitions out of the 1977 federal Clean Air Act. However,

most California districts have adopted NSR and PSD control technology requirements that deviated in many different ways from the federal definitions of control technology requirements. As a result of this deviation, most California districts have NSR control requirements that are referred to as BACT with definitions more akin to LAER.[52] Such BACT definitions are sometimes referred to as California BACT.[53] In addition, some districts have control technology requirements for PSD that are more stringent that federal BACT. The next section will provide a more detailed analysis of the differences between federal BACT, federal LAER, and control technology requirements used for NSR and PSD in California.

The determination of BACT or LAER requirements in a specific permitting action involve comparisons with control technology requirements used in other previous permitting actions for similar sources. Since most BACT definitions in the regulations of California APCDs could qualify as having the stringency of LAER, it is important to know whether the applicable district control technology definition corresponds federal BACT or LAER requirements. Therefore, it is important that a person doing BACT or LAER analysis during an NSR or PSD permitting action know both the wording of:

1. The BACT or LAER definition applicable in the permitting action; and
2. The BACT or LAER definitions applicable in previous permitting actions of comparable sources used in the analysis.

When this information is needed, one should obtain it either from the CAPCOA BACT Clearinghouse or from the district contact. Section XI has also been provided to give the current as well as some historical BACT and LAER definitions used by California districts.

VIII. Control Technology Definitions

A. Federal BACT

[52]It is interesting to note that some districts were using the term BACT prior to the 1977 federal Clean Air Act Amendments. As a result, it appears that BACT was already an established term. This may explain the why the term LAER was not widely used in California.

[53]The term "California BACT" is often used to distinguish BACT as defined at most large California districts from BACT as defined in the federal Clean Air Act and Code Federal of Regulations.

Federal BACT applies to major sources that emit pollutants subject to the PSD program authorized under Part C, Title I of the federal Clean Air Act. It has also been used the permitting programs of some rural California districts which comply with all national ambient air quality standards. In addition, some districts have employed a BACT requirement in conjunction with a LAER requirement.[54] In these districts, less stringent control technology requirements are used with lower net emission increase thresholds associated with larger minor sources or acceptable projected air quality impacts. Lower levels of net emission increase may trigger control technology requirements equivalent to federal BACT. Control technology requirements equivalent to LAER may be triggered by higher net emission increases likely to be associated with major source or unacceptable projected air quality impacts.

Section 169(3) of the federal Clean Air Act defines BACT as follows[55]:

> The term "best available control technology" means an emission limitation based on the maximum degree of reduction of each pollutant subject to regulation under this Act emitted from or which results from any major emitting facility, which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such facility through application of production processes and available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of each such pollutant. In no event shall application of "best available control technology" result in emissions of any pollutant which will exceed the emissions allowed by any applicable standard established pursuant to section 111 or 112 of this Act. Emissions from any source utilizing clean fuels, or any other means, to comply with this paragraph shall not be allowed to increase above levels that would have been required under this paragraph as it existed prior to enactment of the federal Clean Air Act Amendments of 1990.

The definition states that BACT "means an emission limitation based on the maximum degree of reduction of each pollutant subject to regulation under this Act emitted from or which results from any

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[54]For example, Imperial County APCD, San Diego Co. APCD, and some districts in the Mountain Counties Air Basin have both BACT and LAER definitions. Kern County APCD formerly used a combination of BACT and LAER definitions during the late 1970s and 1980s.

[55]A slightly different form of the federal BACT definition can be found in 40 CFR 166(b)(12) and 52.21(b)(12). These provisions are located in two different sets of regulations for Prevention of Significant Deterioration of Air Quality.

major emitting facility." It is interesting to note that BACT is somewhat of a misnomer. The form of the requirement is defined as an emission limitation and not as an equipment standard. Therefore, one is constrained to assume that the emission limitation would, in many cases, correspond to the emission rate achieved with either basic or control equipment which would otherwise be determined to be an appropriate control technology requirement. In other words, BACT should be established as a performance requirement, not as an equipment requirement, on authorities to construct and permits to operate.

By definition, Federal BACT is less stringent than LAER, and allows for consideration of "energy, environmental, and economic impacts and other costs." It also requires evaluation of alternative production processes and available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques. The definition also states a minimum requirement as "In no event shall application of 'best available control technology' result in emissions of any pollutant which will exceed the emissions allowed by any applicable standard established pursuant to section 111 or 112 of this Act." Section 111 and 112 represent NSPS and NESHAP. Note, however, that BACT is not explicitly constrained to be as stringent as retrofit technologies labeled RACT.

The encumbrance of so many considerations in the federal BACT definition creates some ambiguity regarding the implied procedure determining BACT requirements. Originally, the U.S. EPA suggested a sequential analysis referred to as "bottom-up" analysis. As a result, U.S. EPA has provided some guidance on the matter. This guidance is referred to as "the top-down approach," and is neither applicable to LAER nor California BACT definitions patterned after LAER. The guidance essentially dictates that the process of evaluation should include a ranking of candidate BACT alternatives, starting with evaluation of the most stringent candidate requirement with subsequent evaluations to cover decreasingly stringent alternatives in sequence. One cannot proceed down the list to a less-stringent BACT candidate unless the rejection of a more stringent candidate is justified. In setting the most stringent controls, one is not limited to those achieved in practice. In addition, any control previously required as LAER for the subject class or category or source should be included on the list.

Another notable characteristic of the federal BACT definition is the direct authorization to consider alternative production processes and available methods, systems, and techniques, including fuel cleaning. As a result of this provision, BACT evaluations are not limited to add-on control technology and include pollution prevention measures as well as any other potentially feasible methods of reducing emissions. Even changes in basic equipment, fuels, and material substitutes can be considered.

B. LAER

The federal LAER is defined in Section 171(3) of the federal Clean Air Act[56]. LAER focuses on requiring the most stringent emission limitation achieved in practice for such class or category of source, or which is contained in the SIP of any state for the same (i.e., RACT). There is relief provided from potentially stringent requirements originating from the SIPs if the applicant can demonstrate that such a limitation is not achievable. However, no requirement can be less stringent than federal NSPS.

> The term "lowest achievable emission rate" means for any source, that rate of emissions which reflects --
>
> (a) the most stringent emission limitation which is contained in the implementation plan of any State for such class or category of source, unless the owner or operator of the proposed source demonstrates that such limitations are not achievable, or
>
> (b) the most stringent emission limitation which is achieved in practice by such class or category of source, whichever is more stringent.
>
> In no event shall the application of this term permit a proposed new or modified source to emit any pollutant in excess of the amount allowable under applicable new source standards of performance.

Explicit provisions for consideration of alternative basic equipment or fuels is not directly evident as in the definition for federal BACT. But neither does the language of the definition preclude the consideration of alternative basic equipment or fuels as a LAER requirement.

There are several other notable differences between BACT and LAER. First of all, BACT is evaluated on a case-by-case basis, where LAER is more or less uniform for a class or category of source. This case-by-case evaluation of BACT has a large scope of concerns, including energy, environmental, and economic impacts. The LAER definition is very rigid and more narrow, allowing little argument in the decision other than what is "achieved in practice" and what is the class or category of source. As a result, highly similar sources can have different BACT requirements, but should not, in theory, have different LAER requirements.

Part (a) of the LAER definition is largely self-evident. The most stringent emission limitation refers to any limit contained in a rule or regulations which has been adopted into an SIP. The applicant can be relieved of meeting such limitation upon demonstrating that that the limitation is not achievable.

[56]Another form of the definition is contained in the federal regulations for new source review at 40 CFR 51.165(a)(1)(xiii).

The degree to which an SIP limit can be challenged is addressed in U.S. EPA internal guidance[57]:

> There is, of course, a range of certainty in such a definition. The greatest certainty for a proposed LAER limit exists when that limits is actually being achieved by a source. However, a SIP limit, even if it has not yet been applied to a source, should be considered initially to be the product of careful investigation and , therefore, achievable. A SIP limit's credibility diminishes if a) no sources exist to which it applies; b) it is generally acknowledged that sources are unable to comply with the limit, and the state is in the process of changing the limit; or c) the State has relaxed the original SIP limit. Case-by-case evaluations need to be made in these situations to determine the SIP limit's credibility.
>
> The same logic applies to SIP limits to which sources are subject but with which they are not in compliance. Noncompliance by a source with a SIP limit, even if it is the only source subject to that specific limit, does not automatically constitute a demonstration that that limit is unachievable. The specific reasons noncompliance must be determined, and the ability of the source to comply assessed. However, such noncompliance may prove to be an indication of nonachievability, so the achievability of such a SIP limitation should be carefully studied before it is used as the basis of LAER determination

The "achieved in practice" component of the LAER definition appears to be subject to some interpretation since it is not defined in the federal statues and regulations. As a result, there are few objective regulatory criteria to constrain the form of an achieved-in-practice evaluation. However, Region IX of the U.S. EPA has taken a position that the successful operation of a new control technology for six months constitutes achieved in practice."[58] Prior to this assertion by the U.S. EPA, the air quality jurisdiction apparently had the latitude to interpret what was meant by "achieved in practice." In fact, there are some considerations that are tightly not defined, such as, what is considered successful operation.

The "class or category of source" component of the definition is also a term that is largely subject to interpretation. As used in California, it is apparent that it could be as large as a group of basic equipment types that provide the same function, e.g., the combination of electric motors, turbines,

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[57]U.S. EPA Memorandum from John Calcagni, Director of Air Quality Management Division, to David Kee, Director of Air and Radiation Division, Region V. The memorandum subject is "Guidance on Determining Lowest Achievable Emission Rate (LAER)."

[58]This position was established in an August 25, 1997 letter from David Howekamp of U.S. EPA, Region IX to Mohsen Nazemi of SCAQMD.

and reciprocating engines to provide torsional drive. On the other hand, it could be set as a size segment or subtype within an equipment type, e.g., gas turbines over 33 MMBtu/hr heat input or lean-burn internal combustion engines, respectively. As a result, the use of this term in the LAER definition provides a lot of flexibility. Some California districts are using BACT guidelines which indicate what control requirements will be acceptable for California BACT, i.e., a "presumptive LAER."[59] In the process, they are using their own home-generated lists of "class or category of source."

In some cases a control technology achieved in practice for one class or category of source can be required for a different class or category of source. The U.S. EPA has established guidance for transferring LAER requirements across source categories, which they refer to informally as technology transfer. If basic equipment found in two different classes or categories of source have similar gas stream characteristics, the technology transfer policy dictates that achieved-in-practice add-on control technologies are transferrable between the two categories.[60]

Finally, it is interesting to note that the definition of LAER does not contain explicit economic considerations. This is dissimilar to the federal BACT definition, which was largely concerned with the economic feasibility of a control technology as well as its energy and environmental impacts. The assumption is that if a given technology has been achieved in practice for a given (or comparable) industry, there is de facto evidence that the economic cost to the industry of that control technology is not prohibitive. In other words, the cost of the control could only be not achievable only if no new plants could be built in that industry due to an emission limitation proposed to meet the LAER definition. Otherwise, the technology must be economically feasible for that class or category of source.[61]

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[59]Districts using "presumptive LAER" manuals include the South Coast AQMD, Bay Area AQMD, San Joaquin Valley Unified APCD, and Ventura County APCD.

[60]This policy is documented in an August 29, 1988 memorandum from John Calcagni, Director of the Air Quality Management Division of the U.S. EPA, to David Kee, Director of the Air and Radiation Division of Region V of the U.S. EPA. The memorandum subject is "Transfer of Technology in Determining Lowest Achievable Emission Rate (LAER)."

[61]More precise wording of this policy can be found in a February 28, 1989 memorandum from John Calcagni, Director of Air Quality Management Division of the U.S. EPA, to David Kee, Director of the Air and Radiation Division of Region V of the U.S. EPA. The memorandum subject is "Guidance on Determining Lowest Achievable Emission Rate (LAER)."

C. Summary of Differences between Federal BACT and LAER

The federal BACT definition is very clear in its intent to consider requirements for each source on a case-by-case basis. The decision is to include economic, energy, and environmental considerations. In contrast, the LAER definition is clearly more stricter, rigid, and objective by not allowing economic, energy, or environmental consideration, only considering the most stringent control achieved in practice for the category of source being considered. However, there is policy latitude in the chosen working definition of "achieved in practice" and a large amount of latitude in determining class or category of source.

The above indicates that although federal BACT and LAER serve a similar purpose, the structures of both definitions and the process for establishing the control requirement are significantly different. As a result, if one were to establish policy or guidance regarding control technology requirements for new and modified sources, it would be advisable to make such guidance specific to either federal BACT or LAER, but not both. For instance, the U.S. EPA has implemented guidance on the use of a "top-down approach" in determining BACT. This "top-down approach" in essence requires that potential BACT options be considered in the order of their effectiveness. There is no such latitude in the LAER definition for considering less stringent requirements than that achieved in practice. Any other option used in the definition would have to be more stringent than achieved in practice. Some California BACT definitions include alternative provisions that allow the control officer to investigate the economic feasibility of technologically feasible measures, methods, controls, or limitations that have not yet been achieved in practice. A top-down approach in the review of alternative technologically feasible options would be appropriate under such circumstances.

D. Control Technology Requirements of California Districts

Most BACT definitions in California are more akin to LAER than federal BACT. Again, such definitions are often informally referred to as "California BACT." Although the forms of the definitions are usually quite similar, there are often slight differences between districts having "California BACT" definitions. "California BACT" definitions can be either more or less stringent than the federal LAER definition, depending on the selected district.

Districts not having BACT definitions similar to federal LAER usually have both BACT and LAER definitions that are similar to their federal counterparts. The use of both requirements may seem confusing at first, since they are used in different federal programs (i.e., PSD and NSR, respectively). But the requirements are not applied simultaneously. Instead, BACT is normally required in projects where air quality standards are not projected to be violated, and LAER is required for projects with

impacts that may exacerbate existing or create new violations of air quality standards. Districts with both BACT and LAER requirements are restricted to the Mountain Counties Air Basin. Exceptions include San Diego and Imperial County APCDs.

Outside of districts with both BACT and LAER definitions, only a small minority of districts do not have either a BACT or a LAER definition that is not in some way similar to the federal LAER definition. These districts are restricted to the North Coast Air Basin. A comparison of district definitions is given in Table 9.

E. The Nature of "California BACT" Definitions

Usually, the definition is written so that "California BACT" is the more stringent of two to five possible alternative minimum requirements. Commonly, there are, in one form or another, three common minimum requirements. The first two of these minimum requirements, as listed in the generalized example definition below, parallel those found in the federal LAER definition. Various optional language used by districts is included in {} brackets, while potential additions of language often included by districts are included in [] brackets.[62]

"Best Available Control Technology" (BACT) means for any {source, stationary source, emissions unit} the most stringent of:

1. *The most {stringent, effective} {emission limitation, emission control} [or control technique] which the EPA {certifies, states} is contained in the implementation plan of any state approved under the Clean Air Act for {such category or class of source, the type of equipment comprising such a source}, unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitation is not achievable.*

[62]Although such a depiction as shown below was very applicable before 1993, district definitions continue to diverge from their common roots, making this composite definition less applicable as years go by.

Table 9

Comparison of California District Control Technology Definitions with
Federal Definitions for Best Available Control Technology (BACT)
and Lowest Achievable Emission Rate (LAER)

District	District Has BACT Definition Most Similar to Federal BACT Definition	District Has LAER Definition Most Similar to Federal LAER Definition	District Has BACT Definition Most Similar to Federal LAER Definition
North Coast Air Basin			
Mendocino Co. AQMD	*		
North Coast AQMD	*		
Northern Sonoma Co. APCD	*		
San Francisco Bay Area Air Basin			
Bay Area AQMD			*
North Central Coast Air Basin			
Monterey Bay Unified APCD			*
South Central Coast Air Basin			
San Luis Obispo Co. APCD			*
Santa Barbara Co. APCD			
(PSD BACT definition)	*		
(NSR LAER definition)			*
Ventura Co. APCD			*
South Coast Air Basin			
South Coast AQMD			*
San Diego Air Basin			
San Diego Co. APCD	*	*	
Northeast Plateau Air Basin			
Lassen Co. APCD			*

Modoc Co. APCD	*
Siskiyou Co. APCD	*
Sacramento Valley Air Basin	
Butte Co. AQMD	*
Colusa Co. APCD	*
Feather River AQMD	*
Glenn County APCD	*
Placer Co. APCD Portion	*
Sacramento Metropolitan AQMD	*
Shasta Co. AQMD	*
Tehama Co. APCD	*
Yolo-Solano Co. AQMD	*

Table 9 (continued)

Comparison of California District Control Technology Definitions with Federal Definitions for Best Available Control Technology (BACT) and Lowest Achievable Emission Rate (LAER)

District	District Has BACT Definition Most Similar to Federal BACT Definition	District Has LAER Definition Most Similar to Federal LAER Definition	District Has BACT Definition Most Similar to Federal LAER Definition
San Joaquin Valley Air Basin			
San Joaquin Unified APCD			*
Great Basin Air Basin			
Great Basin Unified APCD			*
Southeast Desert Air Basin			
Imperial Co. APCD	*	*	
Kern Co. APCD			*
Mojave Desert AQMD			*
Mountain Counties Air Basin			
Amador Co. APCD	*	*	
Calaveras Co. APCD	*	*	
El Dorado Co. APCD Portion			*
Mariposa Co. APCD	*	*	
Northern Sierra AQMD	*	*	
Placer Co. APCD Portion			*
Tuolumne Co. APCD	*	*	
Lake County Air Basin			
Lake Co. AQMD			*
Lake Tahoe Air Basin			
El Dorado Co. APCD Portion	*	*	
Placer Co. APCD Portion			*

2. *The most effective control device, technique, or emission limit which has been achieved in practice for such category or class of source.*

3. *Any other emission control technique [, alternative basic equipment, different fuel or process] found [after public hearing] by the Air Pollution Control Officer to be technologically feasible and cost effective for such class or category of sources [or for a specific source].*

Under no circumstances shall Best Available Control Technology be determined to be less stringent than the emission control required by any applicable provision of District, state, or federal laws or regulations, unless the applicant demonstrates to the satisfaction of the APCO that such limitations are not achievable.

Table 10 shows which of the above alternative minimum requirements are contained in each of the district BACT definitions. Note that the table only addresses definitions considered to be "California BACT." The nuances of each minimum requirement are discussed below:

1. The Most Stringent Limitation in any State Implementation Plan: This minimum requirement essentially states that the control technology requirement cannot be less stringent than reasonably available control technology (RACT). RACT essentially would be the most stringent control technology requirement that has been adopted as a retrofit control of existing sources by a state or local air pollution control agency and further incorporated into an SIP.

   The last provision of this minimum requirement, i.e., *unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitation is not achievable,* is also found in the federal LAER definition. However, the use of *applicant* versus *owner or operator* is probably a refinement, since the applicant is responsible for providing a complete application to the district.

2. Most Effective Control Achieved in Practice: The wording of this minimum requirement can vary strongly by district. Three important elements are often varied, resulting in significant changes to the stringency of requirements. The first element refers to *most effective control device, technique, or emission limit.* Most districts at least include *the most effective control device*. Others will either include one or both of the *technique* or *emission limit*.

   The second element is *achieved in practice.* Unfortunately, there is no definition of *achieved in practice*. Therefore, the district has some latitude in defining *achieved in practice.* Some districts may use more prescriptive wording, such as, *used or required*. *Used* is a more

stringent wording than *achieved in practice,* indicating that the technology does not have a "track record" of reliability. *Required* is even more stringent since the technology does not have to even be in use. It just has to already be determined to be technologically feasible and cost effective by some other air quality jurisdiction.

The third element refers to the equipment type and scope of the equipment category. Some districts specify the equipment as *emissions unit* or *permit unit.* Others may use *source* or *stationary source.* Some districts may substitute *type of equipment comprising such source* for *category or class of source.* The *category or class of source* is a concept employed in federal LAER definitions as discussed earlier. The reason for using *type of equipment comprising such source*, instead, is not immediately clear. C*ategory or class of source* allows some latitude by the district to appropriately specify a subgrouping or supergrouping of source types for comparison purposes. The use of *type of equipment* does not immediately convey the ability of the district to specify a size category within a type of source.

Table 10

Comparison of Provisions Included in BACT Definitions for
California Districts with "California BACT" Definitions

	Alternative Minimum Requirements Contained in District BACT Definitions		
District	1 Most Stringent Limitation in any State Implementation Plan	2 Most Effective Control Achieved in Practice	3 Unproven Technologies Deemed Technologically and Economically Feasible
San Francisco Bay Area Air Basin			
Bay Area AQMD	*	*	A
North Central Coast Air Basin			
Monterey Bay Unified APCD		*	*
South Central Coast Air Basin			
San Luis Obispo Co. APCD	*	*	A
Santa Barbara Co. APCD (LAER def.)	*	*	*
Ventura Co. APCD	*	*	A
South Coast Air Basin			
South Coast AQMD	*	*	A
Definition mandated by Health and Safety Code Section 40440.11(c)(1), i.e., Section 40405	*	*	
Northeast Plateau Air Basin			
Lassen Co. APCD		*	*
Modoc Co. APCD	*	*	*
Siskiyou Co. APCD		*	*
Sacramento Valley Air Basin			
Butte Co. AQMD		*	A

Colusa Co. APCD		*	A
Feather River AQMD		*	A
Glenn County APCD		*	A
Placer Co. APCD Portion	*	*	A
Sacramento Metropolitan AQMD	*	*	A
Shasta Co. AQMD		*	A
Tehama Co. APCD		*	A
Yolo-Solano Co. AQMD		*	A

Symbol Key: "*" indicates alternative minimum requirement is present in district BACT definition.
"A" indicates that in addition to alternative minimum requirement being present, the definition language explicitly mentions consideration of alternative basic equipment, processes, or fuels.

Table 10 (continued)

Comparison of Provisions Included in BACT Definitions for
California Districts with "California BACT" Definitions

District	Alternative Minimum Requirements Contained in District BACT Definitions		
	1 Most Stringent Limitation in any State Implementation Plan	2 Most Effective Control Achieved in Practice	3 Unproven Technologies Deemed Technologically and Economically Feasible
San Joaquin Valley Air Basin			
San Joaquin Unified APCD	*	*	A
Great Basin Air Basin			
Great Basin Unified APCD	*	*	*
Southeast Desert Air Basin			
Kern Co. APCD	*	*	A
Mojave Desert AQMD	*	*	*
Mountain Counties Air Basin			
El Dorado Co. APCD Portion		A	
Placer Co. APCD Portion	*	*	*
Lake County Air Basin			
Lake Co. AQMD			
Lake Tahoe Air Basin			
Placer Co. APCD Portion	*	*	*

Symbol Key: "*" indicates alternative minimum requirement is present in district BACT definition.

"A" indicates that in addition to alternative minimum requirement being present, the definition language explicitly mentions consideration of alternative basic equipment, processes, or fuels.

In some cases, districts have inserted language that allows relief from this alternative minimum requirement if the applicant demonstrates that the corresponding requirement is not achievable. This provision is usually similar to that found in the above alternative minimum requirement for RACT.

3. Unproven Technologies Deemed Technologically and Economically Feasible: This minimum requirement allows the district to require unproven control technologies for a given category of source as BACT. Where present, it makes California BACT definitions more stringent than federal LAER definitions. Because of it, California districts can participate in advancing the stringency of "California BACT" requiring untried control technologies. It also allows for the transfer of control technology from one category of source to another when a proven technology in one category of source has not yet been required for a different category of source for a very similar situation.

Fifteen districts explicitly consider alternative basic equipment, processes, and fuels to be considered in the scope of alternatives strategies for reducing emissions. This alternative is a relatively recent addition to California BACT definitions, starting with the South Coast AQMD and spreading rapidly to other districts. However, the South Coast AQMD has recently eliminated procedural provisions for considering alternative basic equipment. Furthermore, BACT procedures in the South Coast AQMD are undergoing radical changes in order to comply with constraining provisions of Health and Safety Code Section 40440.11.

The final provision of the above generalized "California BACT" definition provides a "floor" for the scope of alternatives. Many rules have the last provision as stated in the generalized definition. Some others provide the following as minimum requirements for California BACT:

a. In no event shall the emission rate reflected by the control technique or limitation exceed the amount allowable under applicable NSPSs.
b. In no event shall the emission rate reflected by the control technique or limitation exceed the amount allowable under applicable NESHAPs.

The language used in the last provision of the generalized definition is a potential problem. The language has a loophole that is not really a loophole. It implies, if not denotes, that BACT requirements may be less stringent than other local, state, or federal laws. However, district rules could not legitimately override the authority of state and federal laws. In addition, one would find it difficult to argue that the NSR rule of a district could override the authority of an applicable prohibitory rule.

Even though the wording of a provision may be the same in two rules, they may be interpreted

differently depending on the working definitions of such terms as "achieved in practice." A control technology that is "achieved in practice" may be considered a measure, method, or control that has been required elsewhere. On the other hand, the Bay Area AQMD formerly required a year of successful operation before a measure, method or control is achieved in practice. Some districts take the middle position of requiring a functioning application of candidate control technology for BACT.

IX. Procedures for Determining BACT and LAER

Summarizing from the last section, most California LAER and BACT definitions (i.e., BACT definitions that incorporate federal LAER requirements) usually have two or three alternative minimum requirements, with the most stringent for the particular circumstance being applicable. Most definitions will have one provision that states that BACT cannot be less stringent than a control measure implemented by a district or state and incorporated into an SIP. A second alternative minimum requirement incorporated into most California BACT and LAER definitions is the most stringent control technology that has been required or achieved in practice for that category of stationary source. A third alternative minimum requirement defines BACT as a control device or technique which the APCO determines to be technologically feasible and cost effective. Finally, there are usually provisions in the rule to assure that the control technology requirement is no less stringent than federal NSPS or NESHAPS.

California BACT is often specified as a requirement other than control equipment, e.g., a performance standard. Most districts feel it is wise not to burden themselves with the liability of directly dictating the basic design of a project through specific equipment requirements. An exception might be control equipment exclusively proposed by the applicant. As a result, California BACT is often specified as a performance standard that is equivalent to the control level that is achievable with the "best available control technology." Others may require that alternative basic equipment be chosen which has a lower uncontrolled emission rate, or basic equipment that is more subject to the application of control equipment with higher efficiencies.

A district may be predisposed to a given level of control being acceptable as BACT or LAER. However, it is unwise for an applicant to assume that such a level is BACT or LAER until after the required public comment period. Until this time, the air pollution control officer cannot make a decision or commitment to approve the project or deny the application.

The applicant has the responsibility for conducting a survey of control technologies which are potential BACT candidates. Such a survey can be aided using the following resources in addition to this document:

1. Air Pollution Control Districts: A good starting place when conducting a survey is to contact the district of jurisdiction where the source will be sited. Applicants should get an idea of what the district will require at a minimum as achieved in practice, and perhaps inquire about any special instructions for submitting a BACT analysis. District personnel may also be helpful in providing leads on new technologies used elsewhere that they wish to have evaluated in a BACT analysis. In addition, some districts, such as the Bay Area AQMD, South Coast AQMD, Ventura County APCD, and San Joaquin Valley Unified APCD have guidance documents for BACT requirements. But one should note that such guidelines are dynamic, and are not meant to be stable in the long-term.
2. The South Coast AQMD BACT guideline: This document is a standard in some circles, especially in regard to the status of different control technologies. The contents of the document are available at the web address of http://www.aqmd.gov/bact/. In order to get a copy of this document, one should contact the South Coast AQMD public information office at (909) 396-3600.
3. The EPA RACT/BACT/LAER Clearinghouse: The U.S. EPA tracks control technology decisions by local and state agencies referred to as the RACT/BACT/LAER Clearinghouse. Data is accessible as a hardcopy publication or through electronic database access by modem. More information on accessing information in this clearinghouse can be obtained by accessing the U.S. EPA TTN at http://ttnwww.rtpnc.epa.gov/html/blis/blis.htm#BL02, or calling (919) 541-2736.

Furthermore, new information received by the CAPCOA BACT clearinghouse after the publication of this document is available as quarterly summaries until the next edition of this volume. One may request addition to the mailing list by calling (916) 327-5601.

The amount of formality required in preparing a BACT or LAER analysis for an application will vary by district. It is wise, however, to separately address each alternative minimum requirement of the BACT or LAER definition. Systematic methods of analysis provide for clarity and may expedite evaluation of your application.

X. Contacts

The clearinghouse is operated for CAPCOA by staff of the Project Support Section of CARB. Any questions regarding information in this document may be directed to:

CAPCOA BACT Clearinghouse
Project Assessment Branch
California Air Resources Board
P.O. Box 2815
Sacramento, CA 95812

The following individuals are responsible for maintenance of the clearinghouse and may be contacted at the phone numbers provided:

Bob Giorgis
Air Resources Engineer
Project Support Section
(916) 327-5601 or rgiorgis@arb.ca.gov

Mike Tollstrup, Manager
Project Support Section
(916) 323-8473 or mtollstr@arb.ca.gov

Ray Menebroker, Chief
Project Assessment Branch
(916) 322-6026

All of these individuals can be reached at the address provided above.

The following is a list of district personnel provided as general district contacts for questions regarding permitting and control technology.

District/Address	APCO/Contact	Phone Numbers
Amador County APCD 500 Argonaut Lane Jackson, CA 95642-2310	APCO: Karen Huss	(209) 223-6406 (209) 223-6260 FAX amaair@cdepot.net
Antelope Valley APCD P.O. Box 4409 Lancaster, CA 93539-4409	APCO: Charles Fryxell	(760) 245-1661 (APCO phone no.) (805) 723-8070 (district office) (805) 723-3450 FAX
Bay Area AQMD 939 Ellis Street San Francisco, CA 94109-7714	APCO: Ellen Garvey Kenneth Lim	(415) 771-6000 (415) 749-4710 (415) 928-8560 FAX

Web page: http://www.baaqmd.gov webmaster@baaqmd.gov

Butte County AQMD APCO: Larry Odle (916) 891-2882
2525 Dominic Drive, Suite J Bob McLaughlin
Chico, CA 95928-7184 (916) 891-2878 FAX
Web page: http://www.dcn.davis.ca.us/~bluesky/

Calaveras County APCD APCO: Jearl Howard (209) 754-6504
Government Center Lakhmir Grewal (209) 754-6588
891 Mountain Ranch Road
San Andreas, CA 95249-9713 (209) 754-6521 FAX

Colusa County APCD APCO: Harry Krug (916) 458-0590
100 Sunrise Blvd., Suite F Bill Sandman (916) 458-5891
Colusa, CA 95932-3246 (916) 458-5000 FAX
Web page: http://www.dcn.davis.ca.us/bluesky/ ccagair@colusanet.com

El Dorado County APCD APCO: Ron Duncan (916) 621-4262
2850 Fairlane Court, Bldg. C Dennis Otani
Placerville, CA 95667-4100 (916) 626-1531 FAX

Feather River AQMD APCO: Ken Corbin (916) 634-7659
938 14th Street Manny Ruiz
Marysville, CA 95901-4149 (916) 634-7660 FAX
Web page: http://www.dcn.davis.ca.us/~bluesky/

Glenn County APCD APCO: Ed Romano (916) 934-6500
P.O. Box 351 Rick Steward
Willows, CA 95988-0351 (916) 934-6503 FAX
Web page: http://www.dcn.davis.ca.us/~bluesky/ gcairag@maxinet.com

Great Basin Unified APCD APCO: Ellen Hardebeck (760) 872-8211
157 Short Street, Suite 6 Duane Ono
Bishop, CA 93514-3537 (760) 872-6109 FAX

Imperial County APCD	AQCO: Steve Birdsall	(760) 339-4314
150 South 9th Street	Harry Dillon	(760) 339-4606
El Centro, CA 92243-2801		(760) 353-9420 FAX
		ICAPCD@quix.net
Kern County APCD	APCO: Tom Paxson	(805) 862-5250
2700 M Street, Room 302		
Bakersfield, CA 93301-2370		(805) 862-5251 FAX
		air@lsbsdi2.lightspeed.net
Lake County AQMD	APCO: Robert Reynolds	(707) 263-7000
883 Lakeport Blvd.		
Lakeport, CA 95453-5405		(707) 263-0421 FAX
		bobr@pacific.net
Lassen County APCD	APCO: Kenneth Smith	(916) 251-8110
175 Russell Avenue		
Susanville, CA 96130-4215		(916) 257-6515 FAX
Mariposa County APCD	APCO: Ed Johnson	(209) 966-5151
P.O. Box 2039		
Mariposa, CA 95338-2039		(209) 742-5024 FAX
Mendocino County AQMD	APCO: Dave Faulkner	(707) 463-4354
306 East Gobbi Street	Phil Towle	
Ukiah, CA 95482-5511		(707) 463-5707 FAX
Modoc County APCD	APCO: Les Wright	(916) 233-6419
202 West 4th Street	John Kelly	(916) 667-2713
Alturas, CA 96101-3915		(916) 233-5542 FAX
Mojave Desert AQMD	APCO: Charles Fryxell	(760) 245-1661
15428 Civic Drive, #200	Chris Collins	
Victorville, CA 92392-2383		(760) 245-2699 FAX
Web page: http://www.mdaqmd.ca.gov		fwohosky@mdaqmd.ca.gov

Monterey Bay Unified APCD	APCO: Doug Quetin	(408) 647-9411
24580 Silver Cloud Court	Fred Thoits	
Monterey, CA 93940-6536		(408) 647-8501 FAX
		quetin@mbuapcd.org
North Coast Unified AQMD	APCO: Wayne Morgan	(707) 443-3093
2300 Myrtle Avenue	Bob Clark	
Eureka, CA 95501-3327		(707) 443-3099 FAX
Northern Sierra AQMD	APCO: Rod Hill	(916) 274-9360
P.O. Box 2509	Gail Rudow	
Grass Valley, CA 95945-2509		(916) 274-7546 FAX
Web page: http://www.nccn.net/~nsaqmd		nsaqmd@nccn.net
Northern Sonoma County APCD	APCO: Barbara Lee	(707) 433-5911
150 Matheson Street		
Healdsburg, CA 95448-4908		(707) 433-4823 FAX
		nsc@sonic.net
Placer County APCD	APCO: Richard Johnson	(916) 889-7130
11464 B Avenue	Todd Nishikawa	
Auburn, CA 95603-2603		(916) 889-7107 FAX
Web page: http://www.dcn.davis.ca.us/~bluesky		
Sacramento Metropolitan AQMD	APCO: Norm Covell	(916) 386-6650
8411 Jackson Road	Bruce Nixon	(916) 386-6623
Sacramento, CA 95826-3904		(916) 386-6674 FAX
Web page: http://www.airquality.org		
San Diego County APCD	APCO: R. Sommerville	(619) 694-3300
9150 Chesapeake Drive	Gary Smith	(619) 694-3587
San Diego, CA 92123-1096		(619) 694-2730 FAX
Web page: http://www.sdapcd.co.san-diego.ca.us		
San Joaquin Valley	APCO: David Crow	(209) 497-1000
Unified APCD	Seyed Sadredin	(209) 497-1000
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26 Castilian Drive, Suite B-23 Jerry Schiebe (805) 961-8921
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Siskiyou County APCD APCO: James Massey (916) 841-4029
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Yreka, CA 96097-3036 (916) 842-6690 FAX

South Coast AQMD EO: Barry Wallerstein (909) 396-2000
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XI. Listing of BACT and LAER Definitions for California Districts

The following is a listing of current BACT and LAER definitions used by California districts. In some cases historic definitions are also available. Where historic definitions are present, the definitions are in reverse chronological order.

1. Amador County Air Pollution Control District

Regulation I, Rule 102 (Adopted: March 2, 1995)

Best Available Control Technology. An emission limitation, based on the maximum degree of reduction for a criteria pollutant or precursor which would be emitted from any source or modification which the Air Pollution Control Officer, on a case-by-case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable for such source or modification through application of production processes or available control methods, systems, and techniques, for such pollutant. In no case shall application of best available control technology result in emissions of any pollutant or precursor which would exceed the emissions allowed by 40 CFR Part 60 and 61. If the Air Pollution Control Officer determines that technological or economic limitations on the application of measurement technology to a particular class of sources would make the imposition of an emission standard infeasible, he may instead prescribe a design[,] equipment, work practice or operations standard, or combination thereof. Such standard shall, to the degree possible, set forth the emission reduction achievable by implementation of such design , equipment, work practice or operation and shall provide for compliance by means which achieve equivalent results.

Regulation I, Rule 102 (Adopted: January 8, 1980; superseded March 2, 1995)

Best Available Control Technology. An emission limitation, based on the maximum degree of reduction for a criteria pollutant or precursor which would be emitted from any source or modification which the Air Pollution Control Officer, on a case-by-case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable for such source or modification through application of production processes or available control methods, systems, and techniques, for such pollutant. In no case shall application of best available control technology result in emissions of any pollutant of or precursor which would exceed the emissions allowed by 40 CFR Part 60 and 61. If the Air Pollution Control Officer determines that technological or economic limitations on the application of measurement technology to a particular class of sources would make the imposition of an emission standard infeasible, he may instead prescribe a design[,] equipment, work practice or operations standard, or combination thereof. Such standard shall, to the degree possible, set forth the emission reduction achievable by implementation of such design, equipment, work practice or operation and shall provide for compliance by means which achieve equivalent results.

Regulation I, Rule 102 (Adopted: January 8, 1980)
Lowest Achievable Emission Rate. For any source, the most stringent of:

A. The most effective emission limitation which the Environmental Protection Agency certified is contained in the implementation plan of any state approved under the federal Clean Air Act for such class or category of source, unless the owner or operator of the proposed source demonstrates to the satisfaction of the Air Pollution Control Officer that such limitation is not achievable; or
B. The most effective emissions control technique which has been achieved in practice, for such category or class of source; or
C. Any other emissions control technique found, after public hearing, by the Air Pollution Control Officer to be technologically feasible and cost effective for such class or category of sources or for a specific source.

In no event shall the application of lowest achievable emission rate allow for emissions in excess of those allowable under 40 CFR Part 60.

2. Bay Area Air Quality Management District

Regulation 2, Rule 2-206 (Adopted: July 7, 1991)
Best Available Control Technology (BACT): For any source or modified source, except cargo

carriers, the more stringent of:

206.1 The most effective emission control device or technique which has been successfully utilized for the type of equipment comprising such a source; or

206.2 The most stringent emission limitation achieved by an emission control device or technique for the type of equipment comprising such a source; or

206.3 Any emission control device or technique determined to be technologically feasible and cost-effective by the APCO; or

206.4 The most effective emission control limitation for the type of equipment comprising such a source which the EPA states, prior to or during the public comment period, is contained in an approved implementation plan of any state, unless the applicant demonstrates to the satisfaction of the APCO that such limitations are not achievable. Under no circumstances shall the emission control required be less stringent than the emission control required by any applicable provision of federal, state or District laws, rules or regulations.

The APCO shall periodically publish and update, a BACT workbook specifying the requirements for commonly permitted sources. BACT will be determined for a source by using the workbook as a guidance document or, on a case-by-case basis, using the most stringent definition of this Section 2-2-206.

Regulation 2, Rule 2-201 (Adopted: October 7, 1981; superseded July 7, 1991)

Best Available Control Technology (BACT): For any source or modified source, except cargo carriers, the more stringent of:

201.1 The most effective emission control device or technique which has been successfully utilized for at least one year for the type of equipment comprising such stationary source; or

201.2 The most stringent emission limitation achieved by an emission control device or technique for at least one year, for the type of equipment comprising such stationary source; or

201.3 Any emission control device or technique determined to be technologically feasible and cost-effective by the APCO; or

201.4 The most effective emission control limitation for the type of equipment comprising such stationary source which the EPA states, prior to or during the public comment period, is contained in an approved implementation plan of any state, unless the applicant demonstrates to the satisfaction of the APCO that such limitations are not achievable. Under no circumstances shall the emission control required be less stringent than the emission control required by any applicable provision of District, state or federal laws or regulations.

3. **Butte County Air Quality Management District**

Regulation IV, Rule 430.D (Adopted: January 12, 1993)

Best Available Control Technology (BACT) means for any emissions unit, the more stringent of:

1. the most effective emission control device, emission limit, or technique which has been required or used for the type of equipment comprising such emissions unit unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitations are not achievable; or
2. any other emission control device or technique, alternative basic equipment, different fuel or process, determined to be technologically feasible and cost-effective by the Air Pollution Control Officer. The cost-effective analysis shall be performed in accordance with the methodology and criteria specified by the Air Pollution Control Officer.

Under no circumstances shall BACT be determined to be less stringent than the emission control required by any applicable provision of District, State, or federal laws or regulations, unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitations are not achievable.

Regulation IV, Rule 430.D (Adopted: unknown, but changed from Chapter 1, Rule 4-5, Part 304 on August 20, 1985; superseded January 12, 1993)

Best Available Control Technology For any stationary source the more stringent of:

a. The most effective emission control device, emission limit, or technique which has been required or used for the type of equipment comprising such stationary source unless the applicant demonstrates to the satisfaction of Air Pollution Control Officer that such limitations are not achievable; or
b. Any other emission control device or technique determined to be technologically feasible and cost-effective by the Air Pollution Control Officer.

Under no circumstances shall Best Available Control Technology be determined to be less stringent than the emission control required by federal laws or regulations, unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitations are not achievable.

4. **Calaveras County Air Pollution Control District**

Regulation I, Rule 102 (Adopted: February 25, 1980)

Best Available Control Technology. An emission limitation based on the maximum degree of reduction for a criteria pollutant or precursor which would be emitted from any source or modification which the Air pollution Control Officer, on a case-by-case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable for such source or modification through application of production processes or available control methods, systems, and techniques, for such pollutant. In no case shall application of best available control technology result in emissions of any pollutant of [or] precursor which would exceed the emissions allowed by 40 CFR Part 60 and 61. If the Air Pollution Control Officer determines that technological or economic limitations on the application of measurement technology to a particular class of sources would make the imposition of an emission standard infeasible[,] he may instead prescribe a design equipment, work practice or operations standard, or combination thereof. Such standard shall, to the degree possible, set forth the emission reduction achievable by implementation of such design, equipment, work practice or operation and shall provide for compliance by means which achieve equivalent results.

Regulation I, Rule 102 (Adopted February 25,1980)

Lowest Achievable Emission Rate. For any source, the most stringent of:

A. The most effective emission limitation which the Environmental Protection Agency certified is contained in the implementation plan of any state approved under the Clean Air Act for such class or category of source, unless the owner or operator of the proposed source demonstrates to the satisfaction of the Air Pollution Control Officer that such limitation is not achievable; or
B. The most effective emissions control technique which has been achieved in practice, for such category or class of source; or
C. Any other emissions control technique found, after public hearing, by the Air Pollution Control Officer to be technologically feasible and cost effective for such class or category of sources or for a specific source.

In no event shall the application of lowest achievable emission rate allow for emissions in excess of those allowable under 40 CFR Part 60.

5. **Colusa County Air Pollution Control District**

Regulation I, Rule 3.6.b.5 (Adopted: September 14, 1993)

"Best available control technology" means for any emissions unit the more stringent of:

A. The most effective emission control device, emission limit, or technique that has been required or used for the type of equipment comprising such emissions unit unless the applicant demonstrates to the satisfaction of the APCO that such limitations are not achievable; or

B. Any other emission control device or technique, alternative basic equipment, different fuel or process, determined to be technologically feasible and cost-effective by the APCO. The cost-effective analysis shall be performed in accordance with the methodology and criteria specified by the APCO;

Under no circumstances shall BACT be determined to be less stringent than the emission control required by any applicable provision of District, State, or Federal laws or regulations, unless the applicant demonstrates to the satisfaction of the APCO that such limits are not achievable.

Regulation I, Rule 1.2 (r) (Adopted: September 26, 1989; rescinded January 23, 1996)

"Best Available Control Technology" means for any stationary source that more stringent of:

1. The most effective emission control device, emission limit, or technique which has been required or used for the type of equipment comprising such stationary source unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitations are not achievable; or
2. Any other emission control device or technique determined to be technologically feasible and cost-effective by the Air Pollution Control Officer.

Under no circumstances shall Best Available Control Technology be determined to be less stringent than the emission control required by any applicable provision of District, State, federal, or Air Resources Board laws or regulations, unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitations are not achievable.

6. **El Dorado County Air Pollution Control District**

Regulation V, Rule 523.2.G (Adopted: April 26, 1994)

Best Available Control Technology (BACT)-

1. For any emissions unit the most stringent of:

a. The most effective emission control device, emission limit, or technique, singly or in

combination, which has been required or used for the type of equipment comprising such an emissions unit unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitations required on other sources have not been demonstrated to be achievable.

b. Any alternative basic equipment, fuel, process, emission control device or technique, singly or in combination, determined to be technologically feasible and cost-effective by the Air Pollution Control Officer.
c. For replacement equipment only, the emission limitation that is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of source.

2. In making a BACT determination for nonattainment pollutant the Air Pollution Control Officer may consider the overall effect on other nonattainment pollutants. In some cases the lowest emission rates may be required for one or more nonattainment pollutants at the cost of not achieving the lowest emission rate for other nonattainment pollutants. The Air Pollution Control Officer shall discuss these considerations in the Preliminary Decision prepared pursuant to Section 523.4 C.
3. Under no circumstances shall BACT be determined to be less stringent than the emission control required by an applicable provision of district, state or federal laws or regulations unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitations are not achievable.

Regulation I, Rule 102 (Adopted: May 9, 1983 and superseded April 26, 1994)
Best Available Control Technology. An emission limitation, based on the maximum degree of reduction for a criteria pollutant or precursor which would be emitted from any source or modification which the Air Pollution Control Officer, on a case-by-case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable for such source or modification through application of production processes or available control methods, systems and techniques, for such Pollutant. In no case shall application of best available control technology result in emissions of any pollutant of [or] precursor which would exceed the emissions allowed by 40 CFR Part 60 and 61.

If the Air Pollution Control Officer determines that technological or economic limitations on the application of measurement technology to a particular class of sources would make the imposition of an emission standard infeasible, he may instead prescribe a design equipment, work practice or operations standard, or combination thereof. Such standard shall, to the degree possible, set forth the emission reduction achievable by implementation of such design,

equipment, work practice or operation and shall provide for compliance by means which achieve equivalent results.

Regulation I, Rule 102 (Adopted May 9, 1983 and superseded April 26, 1994)
Lowest Achievable Emission Rate. For any source, the most stringent of:

A. The most effective emission limitation which the Environmental Protection Agency certified is contained in the implementation plan of any state approved under the Clean Air Act for such class or category of source, unless the owner or operator of the proposed source demonstrates to the satisfaction of the Air Pollution Control Officer that such limitation is not achievable; or
B. The most effective emissions control technique which has been achieved in practice, for such category or class of source; or
C. Any other emissions control technique found, after public hearing, by the Air Pollution Control Officer to be technologically feasible and cost effective for such class or category of sources or for a specific source.

In no event shall the application of lowest achievable emission rate allow for emissions in excess of those allowable under 40 CFR Part 60.

7. **Feather River Air Quality Management District**

Regulation X, Rule 10.1.D.5 (Adopted February 8, 1992)
Best Available Control Technology (BACT): For any emissions unit, the more stringent of:

a. The most effective emission control device, emission limit, or technology which has been required or used for the type of equipment comprising such emissions unit unless the applicant demonstrates to the satisfaction of the District that such limitations are not achievable; or
b. Any other emission control device or technique, alternative basic equipment or different fuel or process, determined by the District to be technologically feasible and cost-effective and which provides an equivalent level of control.

Under no circumstances shall Best Available Control Technology be determined to be less stringent than the emission control required by any applicable provision of District, state, or federal laws or regulations, unless the applicant demonstrates to the satisfaction of the APCO that such limitations are not achievable.

Regulation IV, Rule 4.6 Part 304. (Adopted: August 12, 1991, but superseded)

Best Available Control Technology: For any stationary source, the more stringent of Section 304.1 or Section 304.2.

304.1 The most effective emission control device, emission limit, or technique which has been required or used for the type of equipment comprising such stationary source unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitations are not achievable; or

304.2 Any other emission control device or technique determined to be technologically feasible and cost-effective by the Air Pollution Control Officer.

Under no circumstances shall Best Available Control Technology be determined to be less stringent than the emission control required by any applicable provision of District, State, or federal or Air Resources Board laws or regulations, unless the applicant demonstrates to the satisfaction of the Pollution Control Officer that such limitations are not achievable.

8. Glenn County Air Pollution Control District

Article 3, Section 51.D.5 (Adopted: March 16,1993)

Best Available Control Technology (BACT) means for any emissions unit, the more stringent of:

a. the most effective emission control device, emission limit, or technique which has been required or used for the type of equipment comprising such emissions unit unless the applicant demonstrates to the satisfaction of the APCO that such limitations are not achievable; or

b. any other emission control device or technique, alternative basic equipment, different fuel or process, determined to be technologically feasible and cost effective by the APCO. The cost-effective analysis shall be performed in accordance with the methodology and criteria specified by the APCO.

Under no circumstances shall BACT be determined to be less stringent than the emission control required by any applicable provision of District, State, or Federal laws or regulations, unless the applicant demonstrates to the satisfaction of the APCO that such limitations are not achievable.

Article 3, Section 51.K. (Adopted: unknown; superseded on March 16, 1993)

Best Available Control Technology (BACT): Best Available Control Technology means for any source the more stringent of:

1. The most effective control technique which has been achieved in practice, for such category or class of source, and which for sources locating in and impacting an

attainment area, takes into account energy, environmental and economic impacts and other costs; or

2. Any other emissions control technique found by the Air Pollution Control Officer or the Air Resources Board to be technologically feasible and cost/effective for such class or category of sources; or
3. For pollutants which exceed the national ambient air quality standard in the district, the most effective emission limitation which the EPA certifies is contained in the implementation plan of any state approved under the Clean Air Act for such class or category of source, unless the owner or operator of the proposed source demonstrates to the satisfaction of the APCO that such limitations are not achievable.

9. Great Basin Unified Air Pollution Control District

Regulation II, Rule 209-A.F.1 (Adopted: June 19,1989)

"Best Available Control Technology (BACT)" means for any source, the more stringent of:

a. The most effective emissions control technique which has been achieved in practice, for such category or class of source; or
b. Any other emissions control technique found, after public hearing, by the Air Pollution Control Officer or the Air Resources Board to be technologically feasible and cost/effective for such class or category of sources or for a specific source; or
c. The most effective emission limitation which the EPA certifies is contained in the implementation plan of any State approved under the Clean Air Act for such class or category or [of] source, unless the owner or operator of the proposed source demonstrates that such limitations are not achievable.

In no event shall the emission rate reflected by the control technique or limitation exceed the amount allowable under applicable new source performance standards.

10. **Imperial County Air Pollution Control District**

Regulation I, Rule 101 (Adopted: November 19, 1985)

Best Available Control Technology (BACT) means for any stationary source or modification the technology which gives the maximum degree of reduction of each air contaminant emitted from or resulting from such class or category of source which the Control Officer determines is achievable for such source. The Control Officer shall make this determination on a case-by-case basis, taking into account energy, environmental and economic impacts and other costs. The Control Officer shall consider production processes and available methods, systems and techniques for control of each air contaminant, including fuel cleaning or treatment or innovative fuel combustion techniques. In no event shall the emission rate reflected by the control technique or limitation exceed the amount allowable under applicable new source performance standards.

Regulation 1, Rule 101 (Adopted: unknown)

Lowest Achievable Emission Rate (LAER) means for any stationary source or modification the more stringent of:

1. The most stringent emissions limitation which is contained in the implementation plan of any state for such class or category of stationary source, unless the owner or operator of the proposed stationary source demonstrates that such limitations are not achievable; or
2. The most effective emissions control technique which has been achieved in practice, for such class or category of source as determined by the Control Officer; or
3. The emission limitation specified for such class or category of source under applicable Federal New Source Performance Standards pursuant to Section III of the Clean Air Act; or
4. Any other emissions control technique found after public hearing, by the Control Officer or the Air Resources Board to be technologically feasible and cost effective for such class or category of sources or for a specific source.

11. **Kern County Air Pollution Control District**

Rule 210.I.II.G for NSR. (Adopted: July 11, 1996)

Best Available Control Technology: the most stringent emission limitation or control technique of the following:

1. That achieved in practice for such emissions unit and class of source;

2. That contained in any State Implementation Plan approved by the U.S. Environmental Protection Agency for such emissions unit category and class of source (a specific limitation or control technique shall not apply if the owner or operator of the proposed emissions unit demonstrates to the satisfaction of the Control Officer that such limitation or control technique is not currently achievable); or
3. Any other emission limitation, control device, alternate basic equipment, or different fuel or process found by the Control Officer to be technologically feasible for such class or category of source or for a specific source, and cost effective as determined by official District policy.

Best Available Control Technology shall not be determined to be less stringent than the emission control required by any applicable provision of local, state, or federal, law or regulation unless the applicant demonstrates to the Control Officer that such limitations are not achievable. Application of Best Available Control Technology shall not result in the emission of any pollutant exceeding emissions allowed by any applicable New Source Performance Standard or National Emission Standard for Hazardous Air Pollutants.

Rule 210.4.I.G for PSD Rule. (Adopted: unknown)

Best Available Control Technology means an emissions limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation under the Clean Air Act which would be emitted from any proposed major stationary source or major modification which the APCO, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques for control of such pollutant. In no event shall application of Best Available Control Technology result in emission of any pollutant which would exceed the emissions allowed by any applicable Standard of Performance for New Stationary Sources and the National Emissions Standards for Hazardous Air Pollutants. If the APCO determines that technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of an emissions standard infeasible, design, equipment, work practice, or operational standards, or a combination thereof, may be prescribed instead to satisfy the requirements for the application of Best Available Control Technology. Such standard shall to the degree possible, set forth the emissions reduction achievable by implementation of such design, equipment, work practice, or operation and shall provide for compliance by means which achieve equivalent results.

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Rule 101 for NSR. (Adopted: June 8, 1992, but superseded July 11, 1996)

Best Available Control Technology: the most stringent emission limitation or control technique of the following:

1. achieved in practice for such emission unit and class of source; or
2. contained in any state implementation plan approved by the Environmental Protection Agency for such emissions unit category and class of source (a specific limitation or control technique shall not apply if the owner or operator of the proposed emissions unit demonstrates to the satisfaction of the Control Officer that such limitation or control technique is not currently achievable); or
3. any other emission limitation, control device, alternate basic equipment, or different fuel or process found by the Control Officer to be technologically feasible for such class or category of source or for a specific source, and cost effective as determined by official District policy.

Under no circumstance shall Best Available Control Technology be determined to be less stringent than the emission control required by any applicable provision of local, state, or federal, law or regulation unless the applicant demonstrates to the satisfaction of the Control Officer that such limitations are not achievable. In no event shall the application of Best Available Control Technology result in the emission of any pollutant exceeding emissions allowed by any applicable New Source Performance Standard or National Emission Standard for Hazardous Air Pollutants.

12. Lake County Air Quality Management District

Chapter 1, Article II, Section 208.1. (Adopted: June 6, 1977)

Best Available Control Technology (BACT): The maximum degree of emission control for any air contaminant emitting equipment taking into account technology which is known to be practical and feasible but not necessarily in use provided the Air Pollution Control Officer shall not interpret BACT to include a requirement that will result in the closing and elimination of or the inability to construct or operate a lawful business which could be operated with the application of the best control technology currently in use, or cause a situation where an exclusive manufacturer of BACT will obtain unreasonable compensation for such technology.

13. Lassen County Air Quality Management District

Regulation VI, Rule 6.3(e). (Adopted: November 16,1982)

Best Available Control Technology (BACT) - For any stationary source the more stringent of:

1. The most effective emission control device, emission limit, or technique which has been required or used for the type of equipment comprising such stationary source unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitations are not achievable; or
2. Any other emission control device or technique determined to be technologically feasible and cost-effective by the Air Pollution Control Officer. Under no circumstances shall BACT be determined to be less stringent than the emission control required by any applicable provision of District, State, federal, or Air Resources Board laws or regulations, unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitations are not achievable.

14. Mariposa County Air Pollution Control District

Regulation I, Rule 102 (Adopted: unknown)

Best Available Control Technology. An emission limitation, based on the maximum degree of reduction for a criteria pollutant or precursor which would be emitted from any source or modification which the Air Pollution Control Officer, on a case-by-case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable for such source or modification through application of production processes or available control methods, systems, and techniques, for such pollutant. In no case shall application of best available control technology result in emissions of any pollutant of [or] precursor which would exceed the emissions allowed by 40 CFR Part 60 and 61. If the Air Pollution Control Officer determines that technological or economic limitations on the application of measurement technology to a particular class of sources would make the imposition of an emission standard infeasible, he may instead prescribe a design [,] equipment, work practice or operations standard, or combination thereof. Such standard shall, to the degree possible, set forth the emission reduction achievable by implementation of such design, equipment, work practice or operation and shall provide for compliance by means which achieve equivalent results.

Regulation I, Rule 102 (Adopted: unknown)

Lowest Achievable Emission Rate. For any source, the most stringent of:

A. The most effective emission limitation which the Environmental Protection Agency certified is contained in the implementation plan of any state approved under the Clean Air Act for such class or category of source, unless the owner or operator of the proposed source demonstrates to the satisfaction of the Air Pollution Control Officer that such limitation is not achievable; or
B. The most effective emissions control technique which has been achieved in practice, for

such category or class of source; or

C. Any other emissions control technique found, after public hearing, by the Air Pollution Control Officer to be technologically feasible and cost effective for such class or category of sources or for a specific source.

In no event shall the application of lowest achievable emission rate allow for emissions in excess of those allowable under 40 CFR Part 60.

15. Mendocino County Air Quality Management District

Regulation I, Chapter I, Rule 130 (b2). (Adopted: June 14, 1988)

Best Available Control Technology (BACT): An emission limitation based on the maximum degree of reduction of each air contaminant subject to regulation under the Clean Air Act of 1977 emitted from or which results from any stationary source or modification, which the Control Officer, on a case by case basis, taking into account energy, environmental, and economic impacts, and other costs, determines is achievable for such stationary source through application of production processes and available methods, systems, and techniques, for control of such air contaminants. Said BACT determinations may include a design standard, operational equipment specifications, fuel restrictions, work practice or combination thereof. In no event shall application of BACT result in emissions of any pollutants which will exceed the emissions allowed under Rules 490 and 492 of this regulation. If the reviewing authority determines that technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of an emission standard infeasible, a design, equipment, work practice, operational standard or combination thereof, may be prescribed instead to satisfy the requirements for the application of BACT. (52.21(b)(12))

16. Modoc County Air Pollution Control District

Regulation VI, Rule 6.1.I.1 (Adopted: January 3, 1989)

Best Available Control Technology (BACT)

For any source, the more stringent of:

a. the most effective emissions control technique which has been achieved in practice, for such category or class of sources; or

b. any other emissions control technique found, after public hearing, by the Control Officer and the Air Resources Board to be technologically feasible and cost effective for such class or category of sources or for a specific source; or

c. for those pollutants for which the national ambient air quality standards are violated in the district, the most effective emission limitation which the Environmental Protection

Agency certifies is contained in the implementation plan of any state approved under the Clean Air Act for such class or category of source, unless the owner or operator of the proposed source demonstrates that such limitation are not achievable.

17. **Mojave Desert Air Quality Management District** (formerly San Bernardino County Air Pollution Control District

Regulation XIII, Rule 1301 (Adopted: March 25, 1996)

"Best Available Control Technology (BACT)" - For any Permit Unit, the most stringent of:

(1) The most effective emission control device, emission limit, or technique which has been achieved in practice, for such permit unit category or class of source; or
Any other emission control device, process or technique, and/or different fuel demonstrated in practice to be technologically feasible and cost-effective by the APCO or by CARB.

(2) Under no circumstances shall BACT be determined to be less stringent than the emission control required by any applicable provision of laws or regulations of the District, State, and/or Federal government, unless the applicant demonstrates to the satisfaction of the APCO that such limitations are no achievable.

(3) In no event shall the application of BACT result in the emissions of any Regulated Air Pollutant which exceeds the emissions allowed by any applicable standard or other requirement under 42 U.S.C. §7411, Standards of Performance for New Stationary Sources (Federal Clean Air Act §111) or 42 U.S.C. §7412, Hazardous Air Pollutants (Federal Clean Air Act §112) or the regulations promulgated thereunder.

(4) BACT for Emission Unit categories or classes of Facilities shall be determined on a case-by-case basis.

Regulation XIII, Rule 1302(d). (Adopted: October 27, 1993)

"Best Available Control Technology (BACT)" - For any permit unit, the most stringent of:

(1) The most effective emission control device, emission limit, or technique which has been achieved in practice, for such permit unit category or class of source; or

(2) Any other emission control device, process or technique, and/or different fuel demonstrated in practice to be technologically feasible and cost-effective by the Air Pollution Control Officer or by the Executive Officer of the ARB.

(3) Under no circumstances shall BACT be determined to be less stringent than the emission control required by any applicable provision of laws or regulations of the District, State, and/or federal government, unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitations are not achievable.

In no event shall the application of BACT result in the emissions of any pollutant which exceeds the emissions allowed by any applicable New Source Performance Standard (40 CFR, 60) or National Emission Standard for Hazardous Air Pollutants (40 CFR, 61).

Regulation XIII, Rule 1302(d). (Adopted: April 29,1993)

Best Available Control Technology (BACT) means the more stringent of:

(1) The most effective emission control technique which has been achieved in practice, for such permit unit category or class of source; or

(2) The control technique which will result in the most stringent emissions limitation contained in any state implementation plan approved by the Environmental Protection Agency for such permit unit category and class of source. A specific control technique shall not be required if the owner or operation of the proposed source demonstrates to the satisfaction of the Executive Officer that such control techniques are not presently achievable (i.e. that such emissions limitations are not presently achievable; or

(3) Any other emission control technique found after public hearing by the District or by the Air Resources Board to be technologically feasible and cost-effective for such class or category of sources or for a specific source.

No control technique, the application of which would result in emissions from a new or modified source in excess of the amount allowable under applicable new source performance standards specified in Regulation IX of these rules and regulations or promulgated by the Environmental Protection Agency pursuant to the Clean Air Act may be considered Best Available Control Technology.

18. Monterey Bay Unified Air Pollution Control District

Regulation II, Part II, Rule 207(2.10) (Adopted: March 20, 1996)

Best Available Control Technology (BACT)

For any stationary source the most stringent of the following, unless the applicant demonstrates to the satisfaction of the District that such limitations imposed on other sources are not achievable:

2.10.1 the most effective emission control device or technique which has been required or used for the type of equipment comprising such a category of stationary source; or

2.10.2 the most stringent emissions limitation which has been required or used for the type of equipment comprising such a category of stationary source; or

2.10.3 any other emission control device or technique determined to be technologically feasible

and cost-effective by the District.

2.10.4 BACT shall not be less stringent than the emission control required by any applicable provision of District, ARB, State, or federal laws or regulations, unless the applicant demonstrates to the satisfaction of the district that such limitations are not achievable.

2.10.5 In no event shall the application of BACT result in the emissions of any pollutant which exceed the emissions allowed by any applicable standard in 40 CFR Part 60 (New Source Performance Standards), or in 40 CFR Part 61 (National Emission Standards for Hazardous Air Pollutants), or in 40 CFR Part 63 (National Emission Standards for Hazardous Air Pollutants for Source Categories).

Regulation II, Part II, Rule 207(2.9) (Adopted: April 21, 1993; Superseded March 20, 1996)

Best Available Control Technology (BACT)

For any stationary source the most stringent of the following, unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitations imposed on other sources are not achievable:

2.9.1 the most effective emission control device or technique which has been required or used for the type of equipment comprising such a category of stationary source; or

2.9.2 the most stringent emissions limitation which has been required or used for the type of equipment comprising such a category of stationary source; or

2.9.3 any other emission control device or technique determined to be technologically feasible and cost-effective by the Air Pollution Control officer.

2.9.4 BACT shall not be less stringent than the emission control required by any applicable provision of District, ARB, State, or federal laws or regulations, unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitations are not achievable.

2.9.5 In no event shall the application of BACT result in the emissions of any pollutant which exceed the emissions allowed by any applicable standard in 40 Code of Federal Regulations (CFR) Part 60, New Source Performance Standards, or in 40 CFR Part 61, National Emission Standards for Hazardous Air Pollutants.

Regulation II, Part 3.0, Rule 207(3.3.) (Adopted: January 3, 1985 and superseded April 21, 1993)

Best Available Control Technology (BACT)

For any stationary source, the more stringent of:

3.3.1. the most effective emission control device, emission limit, or technique which has been required or used for the type of equipment comprising such stationary source unless the

applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitations imposed on other sources are not achievable;

3.3.2. any other emission control device or technique determined to be technologically feasible and cost-effective by the Air Pollution Control Officer; or

3.3.3. under no circumstances shall BACT be determined to be less stringent than the emission control required by any applicable provision of District, State, or federal laws or regulations, unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitations are not achievable.

19. North Coast Unified Air Quality Management District

Regulation I, Rule 130 (b3). (Adopted: June 28,1990)

Best Available Control Technology (BACT): An emission limitation based on the maximum degree of reduction of each air contaminant subject to regulation under the Clean Air Act of 1977 emitted from or which results from any stationary source or modification, which the Control Officer, on a case by case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such stationary source through application of production processes and available methods, systems, and techniques for control of such air contaminants. Said BACT determinations may include a design standard, operational equipment specifications, fuel restrictions, work practice or combination thereof. In no event shall application of BACT result in emissions of any pollutants which will exceed the emissions allowed under Rules 490 and 492 of this regulation. If the reviewing authority determines that technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of an emission standard infeasible, a design, equipment, work practice, operational standard or combination thereof, may be prescribed instead to satisfy the requirements for the application of BACT. The BACT process shall be applied to any toxic air contaminants which are referenced in Section 39660 of the Health & Safety Code (52.21(b) (12)).

20. Northern Sierra Air Quality Management District

Regulation I, Rule 102. (Adopted: September 11, 1991)

Best Available Control Technology.

An emission limitation, based on the maximum degree of reduction for a criteria pollutant or precursor which would be emitted from any source or modification which the Air Pollution Control Officer, on a case-by-case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable for such source or modification through

application of production processes or available control methods, systems, and techniques, for such pollutant. In no case shall application of best available control technology result in emissions of any pollutant or precursor which would exceed the emissions allowed by 40 CFR Part 60 and 61. If the Air Pollution Control Officer determines that technological or economic limitations on the application of measurement technology to a particular class of sources would make the imposition of an emission standard infeasible, he may instead prescribe a design [,] equipment, work practice or operations standard, or combination thereof. Such standard shall, to the degree possible, set forth the emission reduction achievable by implementation of such design, equipment, work practice or operation and shall provide for compliance by means which achieve equivalent results.

Regulation I, Rule 102 (Adopted: unknown)

Lowest Achievable Emission Rate. For any source, the most stringent of:

A. The most effective emission limitation which the Environmental Protection Agency certified is contained in the implementation plan of any state approved under the Clean Air Act for such class or category of source, unless the owner or operator of the proposed source demonstrates to the satisfaction of the Air Pollution Control Officer that such limitation is not achievable; or
B. The most effective emissions control technique which has been achieved in practice for such category or class of source; or
C. Any other emissions control technique found, after public hearing, by the Air Pollution Control Officer to be technologically feasible and cost effective for such class or category of sources or for a specific source.

In no event shall the application of lowest achievable emission rate allow for emissions in excess of those allowable under 40 CFR Part 60.

21. Northern Sonoma County Air Pollution Control District

Regulation I, Chapter , Rule 130(b3). (Adopted: July 1995)

BEST AVAILABLE CONTROL TECHNOLOGY (BACT): An emission limitation based on the maximum degree of reduction of each air contaminant subject to regulation under the Clean Air Act of 1977 emitted from or which results from any stationary source or modification, which the Control Officer, on a case by case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such stationary source through application of production processes and available methods, systems, and techniques for control of such air contaminants. Said BACT determinations may include a design standard, operational equipment specifications, fuel restrictions, work practice or combination thereof. In no event shall application of BACT result in emissions of any pollutants which will exceed the emissions allowed under Rules 490 and 492 of this regulation. If the reviewing authority determines that technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of an emissions standard infeasible, a design, equipment, work practice, operational standard or combination thereof, may be prescribed instead to satisfy the requirements for the application of BACT. (52.21(b) (12))

Regulation I, Chapter I, Rule 130(b2). (Adopted: August 7, 1984, but superseded)

Best Available Control Technology (BACT): An emission limitation based on the maximum degree of reduction of each air contaminant subject to regulation under the Clean Air Act of 1977 emitted from or which results from any stationary source or modification, which the Control Officer, on a case by case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such stationary source through application of production processes and available methods, systems, and techniques for control of such air contaminants. Said BACT determinations may include a design standard, operational equipment specifications, fuel restrictions, work practice or combination thereof. In no event shall application of BACT result in emissions of any pollutants which will exceed the emissions allowed under Rules 490 and 492 of this regulation. If the reviewing authority determines that technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of an emission standard infeasible, a design, equipment, work practice, operational standard or combination thereof, may be prescribed instead to satisfy the requirements for the application of BACT. (52.21(B) (12)) The BACT process shall also apply to any toxic air contaminant.

22. Placer County Air Pollution Control District

Regulation V, Rule 207 (Adopted: November 3, 1994)

BEST AVAILABLE CONTROL TECHNOLOGY (BACT):

207.1 For any emissions unit the most stringent of:

a. The most effective emission control device, emission limit, or technique, singly or in combination, which has been required or used for the type of equipment comprising such an emissions unit unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitations required on other sources have not been demonstrated to be achievable.

b. Any alternative basic equipment, fuel, process, emission control device or technique, singly or in combination, determined to be technologically feasible and cost-effective by the Air Pollution Control Officer.

c. For replacement equipment only, the emission limitation that is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of source.

2.07.2 In making a BACT determination for nonattainment pollutant[s] the Air Pollution Control Officer may consider the overall effect on other nonattainment pollutants. In some cases the lowest emission rates may be required for one or more nonattainment pollutants. The Air Pollution Control Officer shall discuss these considerations in the Preliminary Decision prepared pursuant to Section 403.

207.3 Under no circumstances shall BACT be determined to be less stringent than the emission control required by an applicable provision of district, state or federal laws or regulations unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitations are not achievable.

Regulation V, Rule 508.F.1 (Adopted: June 19, 1979, but superseded)

"Best Available Control Technology (BACT)" means for any source the more stringent of:

a. The most effective emissions control technique which has been achieved in practice, for such category or class of source; or

b. Any other emissions control technique found, after public hearing, by the Air Pollution Control Officer or the Air Resources Board to be technologically feasible and cost effective for such class or category of sources or for a specific source; or

c. The most effective emission limitation which the EPA certifies is contained in the implementation plan of any state approved under the Clean Air Act for such class or category of source, unless the owner or operator of the proposed source demonstrates to the satisfaction of the APCO that such limitations are not achievable.

In no event shall the emission rate reflected by the control technique or limitation exceed the amount allowable under applicable new source performance standards.

23. Sacramento Metropolitan Air Quality Management District

Regulation 2, Rule 202, Section 207. (Adopted: April 4, 1996)

BEST AVAILABLE CONTROL TECHNOLOGY (BACT):

207.1 For any emissions unit the most stringent of:

a. The most effective emission control device, emission limit, or technique, singly or in combination, which has been required or used for the type of equipment comprising such an emissions unit unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitations required on other sources have not been demonstrated to be achievable in practice.

b. Any alternative basic equipment, fuel, process, emission control device or technique, singly or in combination, determined to be technologically feasible and cost-effective by the Air Pollution Control Officer.

207.2 In making a BACT determination for each affected pollutant the Air Pollution Control Officer may consider the overall effect of the determination on other affected pollutants. In some cases the lowest emission rates may be required for one or more affected pollutants at the cost of not achieving the lowest emission rate for other pollutants. The Air Pollution Control Officer shall discuss these considerations in the Preliminary Decision prepared pursuant to Section 405.

207.3 Under no circumstances shall BACT be determined to be less stringent than the emission control required by any applicable provision of district, state or federal laws or regulations, or contained in the implementation plan of any State for such class or category of stationary source unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitations are not achievable.

Regulation 2, Rule 202, Section 207. (Adopted: February 26, 1991)

Best Available Control Technology (BACT): For any emissions unit the most stringent of:

207.1 The most effective emission control device, emission limit, or technique, singly or in combination, which has been required or used for the type of equipment comprising such an emissions unit unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitations required on other sources have not been demonstrated to be achievable.

207.2 Any alternative basic equipment, fuel, process, emission control device or technique, singly or in combination, determined to be technologically feasible and cost-effective by

the Air Pollution Control Officer.

207.3 For replacement equipment only, the emission limitation that is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of sources.

Under no circumstances shall BACT be determined to be less stringent than the emission control required by an applicable provision of district, state or federal laws or regulations unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitations are not achievable.

24. San Diego County Air Pollution Control District

Regulation II, Rule 20.1(c)(10). (Adopted: May 15, 1996)

"Best Available Control Technology (BACT)" means and is applied as follows:

(I) The Lowest emitting of any of the following:

(A) The most stringent emission limitation, or the most effective emission control device or control technique, which has been proven in field application and which is cost-effective for such emission unit, unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitations, device or control technique is not technologically feasible, or

(B) Any emission control device, emission limitation or control technique which has been demonstrated but not necessarily proven in field application, and which is cost-effective, as determined by the Air Pollution Control Officer, unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitation, device or control technique is not technologically feasible, or

(C) Any alternative basic equipment, replacement of an emission unit with a lower emitting emission unit, installation of control equipment, process modifications, changes in raw material including alternative fuels, and substitution of equipment or processes with alternative equipment or processes, or any combination of these, determined by the Air Pollution Control Officer on a case-by-case basis to be technologically feasible and cost-effective, including transfers of technology from another category of source, or

(D) The most stringent emission limitation, or the most effective emission control device or control technique, contained in any State Implementation Plan (SIP) approved by the federal Environmental Protection Agency for such emission unit category, unless the applicant demonstrates to the satisfaction of the Air

Pollution Control Officer that such limitation or technique has not been proven in field application, that it is not technologically feasible or that it is not cost-effective.

(ii) For modified emission units, the entire emission unit's post-project potential to emit shall be subject to BACT, except as follows. The provisions of this Subsection (c)(10)(ii) shall not apply to relocated or replacement emission units.

(A) BACT applies to the emissions increase associated with the modification and not the emission unit's entire potential to emit, if control technology, an emission limit or other emission controls meeting the BACT definition was previously applied to the unit.

(B) BACT applies to the emission units's entire potential to emit, if the emission unit was previously subject to BACT, but BACT was determined to not be cost-effective, technologically feasible or proven in field application.

(C) BACT applies to the emissions increase associated with the emission unit and not the emission unit's entire potential to emit if the emission increase associated with the modification is less than 25 percent of the emission unit's pre-project potential to emit and if the project's emission increase is less than the major modification thresholds of Table 20.1-5.

(iii) In no event shall application of BACT result in the emission of any air contaminant which would exceed the emissions allowed by any District rule or regulation, or by any applicable standard under 40 CFR Part 60 (New Source Performance Standards) or 40 CFR Part 61 (National Emission Standards for Hazardous Air Pollutants). Whenever feasible, the Air Pollution Control Officer may stipulate an emission limit as BACT instead of specifying control equipment. In making a BACT determination, the Air Pollution Control Officer shall take into account those environmental and energy impacts identified by the applicant.

Regulation II, Rule 20.1(c)(10). (Adopted: May 17, 1994; superseded May 15, 1996)

"Best Available Control Technology (BACT)" means and is applied as follows:

(i) The Lowest emitting of any of the following:

(A) The most stringent emission limitation, or the most effective emission control device or control technique, which has been proven in field application and which is cost-effective for such emission unit, unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitations, device or control technique is not technologically feasible, or

(B) Any emission control device, emission limitation or control technique which has been demonstrated but not necessarily proven in field application, and which is

cost-effective, as determined by the Air Pollution Control Officer, unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitation, device or control technique is not technologically feasible, or

(C) Any alternative basic equipment, replacement of an emission unit with a lower emitting emission unit, installation of control equipment, process modifications, changes in raw material including alternative fuels, and substitution of equipment or processes with alternative equipment or processes, or any combination of these, determined by the Air Pollution Control Officer on a case-by-case basis to be technologically feasible and cost-effective, including transfers of technology from another category of source, or

(D) The most stringent emission limitation, or the most effective emission control device or control technique, contained in any State Implementation Plan (SIP) approved by the federal Environmental Protection Agency for such emission unit category, unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitation or technique has not been proven in field application, that it is not technologically feasible or that it is not cost-effective.

(ii) For modified emission units, the entire emission unit's post-project potential to emit shall be subject to BACT, except as follows. The provisions of this Subsection (c)(10)(ii) shall not apply to relocated or replacement emission units.

(A) BACT applies to the emissions increase associated with the modification and not the emission unit's entire potential to emit, if control technology, an emission limit or other emission controls meeting the BACT definition was previously applied to the unit.

(B) BACT applies to the emission units's entire potential to emit, if the emission unit was previously subject to BACT, but BACT was determined to not be cost-effective, technologically feasible or proven in field application.

(C) BACT applies to the emissions increase associated with the emission unit and not the emission unit's entire potential to emit if the emission increase associated with the modification is less than 25 percent of the emission unit's pre-project potential to emit.

(iii) In no event shall application of BACT result in the emission of any air contaminant which would exceed the emissions allowed by any District rule or regulation, or by any applicable standard under 40 CFR Part 60 (New Source Performance Standards) or 40 CFR Part 61 (National Emission Standards for Hazardous Air Pollutants). Whenever feasible, the Air Pollution Control Officer may stipulate an emission limit as

BACT instead of specifying control equipment. In making a BACT determination, the Air Pollution Control Officer shall take into account those environmental and energy impacts identified by the applicant.

Regulation II, Rule 20.1(b)(8). (Adopted: December 15, 1987; superseded May 17, 1994)
"Best Available Control Technology" (BACT) means the maximum degree of air contaminant emission reduction which the Air Pollution Control Officer determines is achievable, on a case-by-case basis, taking into account technology which is demonstrated but not necessarily proven in field application.

Regulation II, Rule 20.1(c) (28). (Adopted: May 15, 1996)
"Lowest Achievable Emission Rate (LAER)" means and is applied as follows:

(i) The lowest emitting of any of the following:
  (A) The most stringent emission limitation, or most effective emission control device or control technique, contained in any State Implementation Plan (SIP) approved by the federal Environmental Protection Agency for such emission unit category, unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such emission limitation or technique is not achievable, or
  (B) The most stringent emission limitation which is achieved in practice by such class or category of emission unit, or
  (C) Best Available Control Technology (BACT).

(ii) For modified emission units, the entire emission unit's post-project potential to emit shall be subject to LAER, except as follows. The provisions of this Subsection (c)(28)(ii) shall not apply to relocated or replacement emission units.
  (A) For existing emission units, LAER applies to the emissions increase associated with the modification and not the emission unit's entire potential to emit, if control technology, an emission limit or other emission controls meeting the LAER or BACT definition was previously applied to the unit.
  (B) For existing emission units, LAER applies to the emission unit's entire potential to emit, if the emission unit was previously subject to BACT, but BACT was determined to not be cost-effective, technologically feasible or proven in field application.
  (C) For existing emission units, LAER applies to the emissions increase associated with the emission unit and not the emission unit's entire potential to emit if the emissions increase associated with the modification is less than 25 percent of the emission unit's pre-project potential to emit and if the project's emission

increase is less than the major modification thresholds of Table 20.1-5.

(iii) In no event shall application of LAER result in the emission of any air contaminant which would exceed the emissions allowed by any District rule or regulation, or by any applicable standard under 40 CFR Part 60 (New Source Performance Standards) or 40 CFR Part 61 (National Emission Standards for Hazardous Pollutants) as they exist on May 17, 1994.

Regulation II, Rule 20.1(c) (28). (Adopted: May 17, 1994; superseded May 15, 1996)/)

"Lowest Achievable Emission Rate (LAER)" means and is applied as follows:

(I) The lowest emitting of any of the following:

(A) The most stringent emission limitation, or most effective emission control device or control technique, contained in any State Implementation Plan (SIP) approved by the federal Environmental Protection Agency for such emission unit category, unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such emission limitation or technique is not achievable, or

(B) The most stringent emission limitation which is achieved in practice by such class or category of emission unit, or

(C) Best Available Control Technology (BACT).

(ii) For modified emission units, the entire emission unit's post-project potential to emit shall be subject to LAER, except as follows. The provisions of this Subsection (c)(28)(ii) shall not apply to relocated or replacement emission units.

(A) For existing emission units, LAER applies to the emissions increase associated with the modification and not the emission unit's entire potential to emit, if control technology, an emission limit or other emission controls meeting the LAER or BACT definition was previously applied to the unit.

(B) For existing emission units, LAER applies to the emission unit's entire potential to emit, if the emission unit was previously subject to BACT, but BACT was determined to not be cost-effective, technologically feasible or proven in field application.

(C) For existing emission units, LAER applies to the emissions increase associated with the emission unit and not the emission unit's entire potential to emit if the emissions increase associated with the modification is less than 25 percent of the emission unit's pre-project potential to emit.

(iii) In no event shall application of LAER result in the emission of any air contaminant which would exceed the emissions allowed by any District rule or regulation, or by any applicable standard under 40 CFR Part 60 (New Source Performance Standards) or

40 CFR Part 61 (National Emission Standards for Hazardous Pollutants) as they exist on May 17, 1994.

Regulation II, Rule 20.1(b)(22). (Adopted: December 15, 1987)
"Lowest Achievable Emission Rate" (LAER) means for any source that rate of emission which reflects the more stringent of the following:

(i) The most stringent emission limitation which is contained in the implementation plan of any State for such class or category of source, unless the owner or operator of the proposed source demonstrates to the satisfaction of the Air Pollution Control Officer that such limitations are not achievable, or
(ii) The lowest emission level which is achieved in practice by such class or category of source.

In no event shall application of LAER result in emissions of any pollutant which would exceed the emissions allowed by any applicable standard under 40 CFR Parts 60 (New Source Performance Standards) and 61(National Emission Standard for Hazardous Pollutants).

25. San Joaquin Valley Unified Air Pollution Control District

Regulation II, Rule 2201.3.8 (Adopted: December 17, 1992)
Best Available Control Technology (BACT): is the most stringent emission limitation or control technique of the following:

3.8.1 Has been achieved in practice for such emissions unit and class of source; or
3.8.2 Is contained in any State Implementation Plan approved by the Environmental Protection Agency for such emissions unit category and class of source. A specific limitation or control technique shall not apply if the owner or operator of the proposed emissions unit demonstrates to the satisfaction of the APCO that such limitation or control technique is not presently achievable; or
3.8.3 Is any other emission limitation or control technique, including process and equipment changes of basic or control equipment, found by the APCO to be technologically feasible for such class or category of sources or for a specific source, and cost effective as determined by the APCO.

26. San Luis Obispo County Air Pollution Control District

Regulation I, Rule 105.9 (Adopted: November 5, 1991)

Best Available Control Technology (BACT) - The most stringent emission limitation or control technique which:

a. has been achieved in practice for such permit unit category or class or [of] source; or
b. is contained in any state implementation plan (SIP) approved by the United States Environmental Protection Agency (EPA) for such permit unit category or class of source. A specific limitation or control technique shall not apply if the owner or operator of the proposed permit unit demonstrates to the satisfaction of the Air Pollution Control Officer that such limitation or control techniques is not presently achievable; or
c. is any other emission limitation or control technique, including process and equipment changes of basic and control equipment, found by the Air Pollution Control Officer to be technologically feasible for such class or category of sources or for a specific source, and cost-effective as compared to measures as listed in the Clean Air Plan (CAP) or rules adopted by the Board.

27. Santa Barbara County Air Pollution Control District

Santa Barbara Co. APCD recently adopted two definitions for BACT, one for NSR and the other for PSD.

Regulation VIII, Rule 802.C.2. NSR. (Adopted: April 17, 1997)

For any stationary source subject to this Rule, Best Available Control Technology shall be the more stringent of:

a. The most effective emission control device, emission limit, or technique which has been achieved in practice for the type of equipment comprising such stationary source; or
b. The most stringent limitation contained in any State Implementation Plan; or
c. Any other emission control device or technique determined after public hearing to be technologically feasible and cost-effective by the Control Officer.

Regulation VIII, Rule 803.D.2. PSD. (Adopted: April 17, 1997)

For any stationary source subject to this Rule, Best Available Control Technology shall be an emission limitation based on the maximum degree of reduction for each pollutant which would be emitted from any new or modified stationary source, which on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion

techniques for control of such pollutant. In no event shall application of Best Available Control Technology result in emissions which would exceed the emissions allowed under the applicable New Source Standards of Performance.

Santa Barbara County Air Pollution Control District rules and regulations previously had two BACT definitions. According to district officials, the definition in the general definitions of the rules was not used. The definition used for the purposes of NSR was given in Regulation IV, Rule 205.C.1.a.6.

Regulation I, Rule 102.F. General Provisions (Adopted: July 1979; superseded: April 17, 1997)
Best Available Control Technology (BACT) "Best Available Control Technology" is defined as:

1. For sources emitting 5 pounds/hour or more but less than 10 pounds/hour, of any pollutant, the most effective emissions control technique which takes into account energy, environmental and economic impacts and which the applicant demonstrates is achievable to the Control Officer.
2. For sources emitting 10 pounds/hour or more of any pollutant, the more stringent of the following:
    a. The most effective emissions control technique which has been achieved in practice for such category or class of source; or
    b. Any other emissions control technique found, after public hearing by the Control Officer or the Air Resources Board to be technologically feasible and cost effective for such class or category of sources or for a specific source; or
    c. The most effective emission limitation which is contained in the implementation plan of any state approved under the Clean Air Act for such class or category or [of] source, unless the owner or operator of the proposed source demonstrates to the satisfaction of the Control Officer that such limitations are not achievable.
3. In no event shall the emission rate reflected by the control technique or limitation exceed the amount allowable under any other Rule of the District.
4. With respect to sources emitting 5 to 10 pounds/hour and as to pollutants for which the area of the proposed new or modified source is not classified as non-attainment, BACT shall not be interpreted to include a requirement which will result in the closing or elimination of, or the inability to construct or modify, a lawful business.

Regulation IV, Rule 205.C.1.a.6. NSR. (Adopted: August 8, 1988; superseded: April 17, 1997)
Best Available Control Technology (BACT) "Best Available Control Technology" is defined as:
Best Available Control Technology: For any stationary source, the more stringent of:

a. The most effective emission control device, emission limit, or technique which has been achieved in practice for the type of equipment comprising such stationary source; or

b. Any other emission control device or technique determined after public hearing to be technologically feasible and cost-effective by the Air Pollution Control Officer. Under no circumstances shall Best Available Control Technology be determined to be less stringent than the emission control required by any applicable provision of District, state, federal or Air Resources Board laws or regulations, unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitations are not achievable.

28. Shasta County Air Quality Management District

Rule 2.1, Part 205 (Adopted: March 10,1992)

Best Available Control Technology (BACT): For any emissions unit the more stringent of:

a) The most effective emission control device, emission limit, or technique that has been required or used for the type of equipment comprising such emissions unit unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer (APCO) that such limitations are not achievable; or

b) Any other emission control device or technique, alternative basic equipment, different fuel or process, determined to be technologically feasible and cost-effective by the APCO. The cost-effective analysis shall be performed in accordance with the methodology and criteria specified by the APCO;

c) Under no circumstances shall BACT be determined to be less stringent than the emission control required by any applicable provision of District, State, or federal laws or regulations, unless the applicant demonstrates to the satisfaction of the APCO that such limits are not achievable.

29. Siskiyou County Air Pollution Control District

Regulation 1, Rule 1.2(B2). (Adopted: November 25, 1986)

Best Available Control Technology (BACT):

For any stationary source, the more stringent of:

1. The most effective emission control device, emission limit, or technique which has been required or used for the type of equipment comprising such stationary source unless the applicant demonstrates to the satisfaction of the Control Officer that such limitations are not achievable; or

2. Any other emission control device or technique determined to be technologically feasible

and cost-effective by the Control Officer.

Under no circumstances shall BACT be determined to be less stringent than the emission control required by any applicable provision of District, State, or Federal laws or regulations, unless the applicant demonstrates to the satisfaction of the Control Officer that such limitations are not achievable.

30. South Coast Air Quality Management District

California Health and Safety Code Section 40405 (added to code in 1987) as required by California Health and Safety Code Section 40440.11(c)(1) (added to code in 1995). Note, criteria in Section 40440.11 are state criteria for South Coast AQMD BACT guideline.

Definition of Best Available Control Technology

40405. (a) As used in this chapter, "best available control technology" means an emission limitation that will achieve the lowest achievable emission ratefor the source to which it is applied. Subject to subdivision (b), "lowest achievable emission rate," as used in this section, means the more stringent of the following:

(1) The most stringent emission limitation that is contained in the state implementation plan for the particular class or category of source, unless the owner or operator of the source demonstrates that the limitation is not achievable.

(2) The most stringent emission limitation that is achieved in practice by that class or category of source.

(b) "Lowest achievable emission rate" shall not be construed to authorize the permitting of a proposed new source or a modified source that will emit any pollutant in excess of the amount allowable under the applicable new source standards of performance

Regulation XX, Rule 2000(c)(8) for RECLAIM sources. (Adopted: December 7, 1995)

BEST AVAILABLE CONTROL TECHNOLOGY (BACT) means the most stringent emission limitation or control technique which: (A) has been achieved in practice for such category or class of source; (B) is contained in any state implementation plan (SIP) approved by the Environmental Protection Agency (EPA) for such category or class of source; or (C) is any other emission limitation or control technique, including process and equipment changes of basic or control equipment which is technologically feasible for such class or category of source or for a specific source, and cost-effective as compared to AQMP measures or adopted District rules. A specific limitation or control technique shall not apply if the Facility Permit holder demonstrates that such limitations or control technique is not presently achievable. BACT shall be at least as stringent as Standards of Performance for New Stationary Sources (40 CFR Part 60).

Regulation XX, Rule 2000(c)(5) for RECLAIM sources. (Adopted: October 15, 1993; superseded December 7, 1995)

BEST AVAILABLE CONTROL TECHNOLOGY (BACT) means the most stringent emission limitation or control technique which: (A) has been achieved in practice for such category or class of source; (B) is contained in any state implementation plan (SIP) approved by the Environmental Protection Agency (EPA) for such category or class of source; or (C) is any other emission limitation or control technique, including process and equipment changes of basic or control equipment which is technologically feasible for such class or category of source or for a specific source, and cost-effective as compared to AQMP measures or adopted District rules. A specific limitation or control technique shall not apply if the Facility Permit holder demonstrates that such limitations or control technique is not presently achievable.

Regulation XIII, Rule 1302(f) for non-RECLAIM sources. (Adopted: December 7, 1995; superseded December 7, 1995)

Best Available Control Technology (BACT) means the most stringent emission limitation or control technique which:

(1) has been achieved in practice for such permit unit category or class of source; or

(2) is contained in any state implementation plan (SIP) approved by the United States Environmental Protection Agency (EPA) for such category or class of source. A specific limitation or control technique shall not apply if the owner or operator of the proposed source demonstrates to the satisfaction of the Executive Officer or designee that such limitation or control technique is not presently achievable; or

(3) is any other emission limitation or control technique, found by the Executive Officer or designee to be technologically feasible for such class or category of sources of for a specific source, and cost-effective as compared to measures as listed in the Air Quality Management Plan (AQMP) or rules adopted by the District Governing Board.

Regulation XIII, Rule 1302(d). (Adopted: May 3, 1991, now superseded)

Best Available Control Technology (BACT) means the most stringent emission limitation or control technique which:

(1) has been achieved in practice for such permit unit category or class of source; or

(2) is contained in any state implementation plan (SIP) approved by the Environmental Protection Agency (EPA) for such permit unit category or class of source. A specific limitation or control technique shall not apply if the owner or operator of the proposed permit unit demonstrates to the satisfaction of the Executive Officer that such limitation or technique is not presently achievable; or

(3) is any other emission limitation or control technique, including process and equipment changes of basic or control equipment, found by the Executive Officer to be technologically feasible for such class or category of sources or for a specific source, and cost-effective as compared to measures as listed in the AQMP or rules adopted by the Board.

31. Tehama County Air Pollution Control District

Regulation II, Rule 2:3A.D. (Adopted: June 7, 1994)

Best Available Control Technology (BACT): For any emissions unit the more stringent of:

1. The most effective emission control device, emission limit, or technique which has been required or used for the type of equipment comprising such emissions unit unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitations are not achievable; or
2. Any other emission control device or technique, alternative basic equipment, different fuel or process, determined to be technologically feasible and cost-effective by the Air Pollution Control Officer. The cost effective analysis shall be performed in accordance with the methodology and criteria specified by the Air Pollution Control Officer;
3. Under no circumstances shall BACT be determined to be less stringent than the emission control required by any applicable provision of District, State, or Federal laws or regulations, unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitations are not achievable.

Regulation II, Rule 2.3 .A, Part 305 (Adopted: September 10, 1985, Superseded June 7, 1994)

Best Available Control Technology (BACT)

For any stationary source, the more stringent of:

305.1 The most effective emission control device, emission limit, or technique which has been required or used for the type of equipment comprising such stationary source, considering application feasibility and cost effectiveness, unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitations are not achievable; or

305.2 Any other emission control device or technique, determined to be technologically feasible and cost-effective by the Air Pollution Control Officer.

Under no circumstances shall BACT be determined to be less stringent than the emission control required by any applicable provision of District, State, or Federal laws or regulations, unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such

limitations are not achievable.

32. Tuolumne County Air Pollution Control District

Rule 102. (Adopted: September 10, 1985)

Best Available Control Technology. An emission limitation, based on the maximum degree of reduction for a criteria pollutant or precursor which would be emitted from any source or modification which the Air Pollution Control Officer, on a case-by-case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable for such source or modification through application of production processes or available control methods, systems, and techniques, for such pollutant. In no case shall application of best available control technology result in emissions of any pollutant or precursor which would exceed the emissions allowed by 40 CFR Part 60 and 61. If the Air Pollution Control Officer determines that technological or economic limitations on the application of measurement technology to a particular class of sources would make the imposition of an emission standard infeasible, he may instead prescribe a design [,] equipment, work practice or operations standard, or combination thereof. Such standard shall, to the degree possible, set forth the emission reduction achievable by implementation of such design, equipment, work practice or operation and shall provide for compliance by means which achieve equivalent results.

Rule 102 (Adopted September 10, 1985)

Lowest Achievable Emission Rate. For any source, the most stringent of:

A. The most effective emission limitation which the Environmental Protection Agency certified is contained in the implementation plan of any state approved under the Clean Air Act for such class or category of source, unless the owner or operator of the proposed source demonstrates to the satisfaction of the Air Pollution Control Officer that such limitation is not achievable; or
B. The most effective emissions control technique which has been achieved in practice, for such category or class of source; or
C. Any other emissions control technique found, after public hearing, by the Air Pollution Control Officer to be technologically feasible and cost-effective for such class or category of sources or for a specific source.

In no event shall the application of lowest achievable emission rate allow for emissions in excess of those allowable under 40 CFR Part 60.

33. Ventura County Air Pollution Control District

Rule 26.1.3 (Adopted: February 13, 1996)

"Best Available Control Technology (BACT)": The most stringent emission limitation or control technology for an emissions unit which:

a. Has been achieved in practice for such emissions unit category, or
b. Is contained in any implementation plan approved by the Environmental Protection Agency for such emissions unit category. A specific limitation or control shall not apply if the owner or operator of such emissions unit demonstrates to the satisfaction of the Air Pollution Control Officer (APCO) that such limitation or control technology is not presently achievable, or
c. Is contained in any applicable New Source Performance Standard or National Emission Standard for Hazardous Air Pollutants set forth in 40 CFR Parts 60 and 61, or
d. Any other emission limitation or control technology, including, but not limited to, replacement of such emissions unit with a lower emitting emissions unit, application of control equipment or process modifications, determined by the APCO to be technologically feasible for such emissions unit and cost effective as compared to the BACT cost effectiveness threshold adopted by the Ventura County Air Pollution Control Board.

In defining emissions unit categories, the APCO may take into account the function of the emissions unit, the capacity of the emissions unit, the annual throughput of the emissions unit and the location of the emissions unit with respect to electricity or fuels needed to achieve an emission limitation or control technology.

Rule 26.1. (Adopted: October 22,1991, superseded)

"Best Available Control Technology (BACT)": The most stringent emission limitation or control technology for an emissions unit which:

a. Has been achieved in practice for such emissions unit and class of source; or
b. Is contained in any implementation plan approved by the Environmental Protection Agency for such emissions unit category. A specific limitation or control shall not apply if the owner or operator of such emissions unit demonstrates to the satisfaction of the Air Pollution Control Officer (APCO) that such limitation or control technology is not presently achievable; or
c. Any other emission limitation or control technology, including, but not limited to, replacement of such emissions unit with a lower emitting emissions unit, application of control equipment or process modifications, determined by the APCO to be technologically feasible for such emissions unit and cost-effective as compared to the BACT cost-effectiveness threshold adopted by the Ventura County Air Pollution Control Board.

In defining emissions unit categories, the APCO may take into account the function of the emissions unit, the capacity of the emissions unit, the annual throughput of the emissions unit and the location of the emissions unit with respect to electricity or fuels needed to achieve an emission limitation or control technology.

34. Yolo-Solano County Air Quality Management District

Regulation III, Rule 3.4.207. (Adopted: September 22, 1993)

Best Available Control Technology (BACT)

207.1 For any emission unit the most stringent of:

a. The most effective emission control device, emission limit, or technique singly or in combination, which has been required or used for the type of equipment comprising such an emissions unit unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitations required on other sources have not been demonstrated to be achievable.

b. Any alternative basic equipment, device or technique, singly or in combination, determined to be technologically feasible and cost-effective by the Air Pollution Control Officer.

c. For replacement equipment only, the emission limitation that is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of source

207.2 Under no circumstances shall BACT be determined to be less stringent than the emission control required by an applicable provision of district, state or federal laws or regulations unless the applicant demonstrates to the satisfaction of the Air Pollution Control Officer that such limitations are not achievable.

Regulation III, Rule 3.4 (11). (Adopted: July 26,1979)

Best Available Control Technology (BACT):

Best Available Control Technology means for any source the more stringent of:

a) The most effective control technique which has been achieved in practice, for such category or class of source, and which for sources locating in and impacting an attainment area, takes into account energy, environmental and economic impacts and other costs; or

b) Any other emissions control technique found by the Air Pollution Control Officer or the Air Resources Board to be technologically feasible and cost effective for such class or category of sources; or

c) For pollutants which exceed the national ambient air quality standard in the district, the

most effective emission limitation which the EPA certifies is contained in the implementation plan of any state approved under the Clean Air Act for such class or category of source, unless the owner or operator of the proposed source demonstrates to the satisfaction of the APCO that such limitations are not achievable.

XII. Glossary of Some Air Pollution Terms

Air Pollution Control Officer (APCO): The county or district officer responsible for matters of air pollution and its control. The head of the air pollution control district.

Air Quality Increment: A level to which air quality in an attainment area is allowed to degrade in siting a new or modifying an existing stationary source under the prevention of significant deterioration program. The size of the increment depends on the classification of the area (see Class I, II, and III). Degradation up to the increment is allowed only to the extent that a national ambient air quality standard is not violated.

Airborne Toxic Control Measure (ATCM): According to Section 39655(b) of the California Health and Safety Code, an airborne toxic control measure is one of the following:

1. Recommended methods, and, where appropriate, a range of methods, that reduce, avoid or eliminate the emissions of a toxic air contaminant. Airborne toxic control measures include, but are not limited to, emission limitations, control technologies, the use of operational and maintenance conditions, closed system engineering, design, equipment, or work practice standards, and the reduction, avoidance, or elimination of emissions through process changes, substitution of materials, or other modifications. In accordance with Health and Safety Code Section 39666(a) and (d), such measures are developed and adopted by the state for toxic air contaminants.
2. Emission standards adopted by the Environmental Protection Agency pursuant to Section 112 of the federal act (42 U.S.C. Sec. 7412) provided the state board does not find that a board-adopted airborne toxic control measure better serves the purpose of preventing adverse health effects (see Health and Safety Code Section 39658(a)(2)).

Airborne Toxic Control Measures are implemented and enforced by air pollution control districts.

Application for Certification (AFC): An application filed with the California Energy Commission for the license of an energy project. The review process is normally twelve months and assumes responsibility for all state and local environmental permitting, including review requirements of the California

Environmental Quality Act.

Area Source: In the context of the federal hazardous air pollutant program, minor sources are referred to as area sources.

Authority to Construct (A/C or ATC): A name used for preconstruction permits issued by California air pollution control districts. It is synonymous with permit to construct.

Best Available Control Technology (BACT): A control technology standard used in preconstruction permit programs. The term is used in the federal prevention of significant deterioration permitting program with a definition found in the federal Clean Air Act and the Code of Federal Regulations. In California, however, it is often used to describe control technology requirements in new source review rules. Usually, definitions used by California air pollution control districts are equivalent to or even more stringent than the federal new source review requirement for control technology and more akin to the lowest achievable emission rate definition used in the federal Clean Air Act.

Best Available Retrofit Control Technology (BARCT): According to Section 40406 of the California Health and Safety Code, "an emission limitation that is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of source." This is a control technology requirement for existing sources that is similar to but potentially more stringent than reasonably available control technology (RACT). It applies to existing sources with emissions exceeding specified thresholds. The emission thresholds vary with classification of the air quality jurisdiction, i.e., moderate, serious, severe and extreme, in accordance with criteria in the California Clean Air Act.

California Clean Air Act of 1988 (CCAA): State legislation in the form of Assembly Bill 2595 which sets up a California air quality program similar to the federal program to require, among other things, local air quality districts to develop plans for meeting state ambient air quality standards.

Class I Area: In the context of the prevention of significant deterioration program, all state air quality jurisdictions are divided into three classes of air quality protection. Class I areas are special areas of natural wonder and scenic beauty, such as national parks, national monuments, and wilderness areas, where air quality should be given special protection. Class I areas are subject to maximum limits on air quality degradation called air quality increments (often referred to as PSD increments). These air quality increments are more stringent than national ambient air quality standards (more so in Class I areas than Class II areas).

Class II Area: In the context of the prevention of significant deterioration program, all state air quality jurisdictions are divided into three classes of air quality protection. Initially, all other air quality jurisdictions were designated as Class II areas. Like Class I areas, Class II areas are subject to maximum limits on air quality degradation called air quality increments (often referred to as PSD increments). These air quality increments are more stringent than national ambient air quality standards (more so in Class I areas than Class II areas).

Class III Area: In the context of the prevention of significant deterioration program, all state air quality jurisdictions are divided into three classes of air quality protection. Initially, all non-Class I air quality jurisdictions were designated as Class II areas. Air quality jurisdictions in both of these designations are subject to maximum limits on air quality degradation called air quality increments (often referred to as PSD increments). These air quality increments are more stringent than national ambient air quality standards (more so in Class I areas than Class II areas). However, if desired by local constituents, a Class II area may be redesignated to a Class III area which has no air quality increments. In Class III areas, air quality may be degraded to levels correspondent to national ambient air quality standards.

Determination of Compliance (DOC): A document prepared by an air pollution control district that evaluates the compliance of a proposed new power plant with state and local air quality regulations. The document is very similar to a proposed decision to issue an authority to construct. It normally contains an engineering analysis and proposed permit conditions. It is submitted to the California Energy Commission and serves as a basis for permit conditions in the proposed decision for certification and compliance plan.

Discretionary Action: In the context of project review under the California Environmental Quality Act, an action where a government agency can use its judgement in deciding whether and how to carry out or approve a project.

Emission Reduction Credit (ERC): A credit for the reduction of emissions from a stationary source. Normally, emission reduction credits have formal definitions in permitting or banking rules which specify minimum criteria that an emission reduction must comply with to be approved.

Emission Offset: An emission reduction credit which is used to mitigate an increase in emissions after adjustment with required offset ratios.

Emissions Unit: According to 40 CFR 51.165(a)(1)(vi) and 40 CFR 51.666(b)(7) referring to permit requirements for NSR and PSD permitting requirements, "*Emissions unit* means means any part of a stationary source which emits or would have the potential to emit any pollutant subject to regulation under the Act."

Engineering Analysis: Traditionally, a document prepared to explain discretionary decisions on

applications for authorities to construct. The engineering analysis documents the form of the project and assumptions regarding design and operation; demonstrates how the new source will comply with district and state air quality regulations, including control technology and mitigation requirements; and provides a basis for conditions to be included in the authorities to construct.

Engineering analyzes will now be required for Title V permitting at some California districts, also.

Environmental Impact Report (EIR): A requirement of the California Environmental Quality Act for new projects which must identify, quantify, and evaluate potential mitigation for significant effects on the environment. The draft environmental impact report is a precursor to the final environmental impact report. It is subject to public inspection and comment before it is finaled by the lead agency.

Generally Available Control Technology (GACT): Along with maximum achievable control technology (MACT), GACT is a federal control technology requirement used for hazardous air pollutants. Both MACT and GACT are used in establishing national emission standards for hazardous air pollutants (NESHAPs); however, MACT is more stringent and tends to be applied to major sources, where GACT is more likely to be applied to area sources when both major and area sources are regulated for a given source category.

Hazardous Air Pollutant (HAP): A federal term for toxic air pollutants which generally do not have safe exposure levels. An initial list of such pollutants is in Section 112(b)(1) of the federal Clean Air Act. Other compounds are added or deleted to this list as time proceeds.

Indirect Source: A source which is indirectly responsible for emission increases due to its stimulation of emission activities. An example of such a source is a new shopping center.

Initial Study: A study used by a lead agency to determine if a project potentially subject to the California Environmental Quality Act will have a potential significant effect on the environment.

Intervenor: A member of the public or governmental agency which formally files to become party to the California Energy Commission certification proceedings on a given energy project.

Lead Agency: According to Section 21067 of the California Environmental Quality Act, "the public agency which has the principal responsibility for carrying out or approving a project which may have a significant effect upon the environment."

Lowest Achievable Emission Rate (LAER): A federal control technology requirement for projects subject

to new source review in nonattainment areas. According to the definition found in Section 171 of the federal Clean Air Act:

> The term "lowest achievable emission rate" means for any source, that rate of emissions which reflects --
>
> (a) the most stringent emission limitation which is contained in the implementation plan of any State for such class or category of source, unless the owner or operator of the proposed source demonstrates that such limitations are not achievable, or
>
> (b) the most stringent emission limitation which is achieved in practice by such class or category of source, whichever is more stringent.
>
> In no event shall the application of this term permit a proposed new or modified source to emit any pollutant in excess of the amount allowable under applicable new source standards of performance.

Major Modification: A federal term intended to refer to projects which have emissions high enough to trigger federal requirements for new source review or prevention of significant deterioration.

Major Source: A federal term used to delineate a source large enough to trigger requirements for new source review, prevention of significant deterioration, Section 112, or Title V. The definition of major source varies from program to program.

Maximum Achievable Control Technology (MACT): Along with generally available control technology (GACT), MACT is a federal control technology requirement used for hazardous air pollutants. Both MACT and GACT are used in establishing national emission standards for hazardous air pollutants (NESHAPs); however, MACT is more stringent and tends to be applied to major sources, where GACT is more likely to be applied to area sources when both major and area sources are regulated for a given source category.

Modification: The definition of modification varies from district to district. However, it is usually used as a qualitative threshold measure of when to require a new source review and permit for a previously permitted unit or facility undergoing additions or changes.

Ministerial Action: In the context of project review under the California Environmental Quality Act, an action where a governmental agency does not exercise any judgement in deciding whether and how to carry out or approve a project.

Minor Source: A source which does not qualify as a major source under any one of the federal major

source definitions. The minor or major status of a source may vary depending on the context or applicable program. In the context of the federal hazardous air pollutant program. minor sources are referred to as area sources.

National Emission Standard for Hazardous Air Pollutants (NESHAP): A health-based emission standard for a hazardous air pollutant as found in Title 40, Part 61 of the Code of Federal Regulations. Since 1990 the term also includes technology-based requirements for generally available control technology (GACT) and maximum achievable control technology (MACT) as specified in Part 63.

Negative Declaration: According to Section 21064 of the California Environmental Quality Act, "a written statement briefly describing the reasons that a proposed project will not have a significant effect on the environment and does not require the preparation of an environmental impact report."

New Source Performance Standards (NSPS): National emission standards for new sources specific to certain source categories promulgated in Title 40, Part 60 of the Code of Federal Regulations.

New Source Review (NSR): A federal permitting program for new and modified sources in nonattainment areas. This program is authorized in Title I of the federal Clean Air Act under Part D.

Nonattainment Area: An air quality jurisdiction which has formally been recognized by the U.S. EPA as violating a national ambient air quality standard.

Nonattainment Area Plan: A plan generated by a local district and approved by the U.S. EPA for the purpose of attaining compliance with a national ambient air quality standard by a required date. The plan includes control measures which reduce direct and precursor emissions from existing sources. Such a plan provides a demonstration of attainment using a current emission inventory along with air quality modeling of emissions from emission inventory projects to show eventual compliance with the standard. Such plans are required for nonattainment areas under Part D, Title I of the federal Clean Air Act.

Notice of Intent (NOI): A phase of the power plant certification process which evaluates alternative sites and technologies for proposed power plants. For large power plants, this process precedes the application for certification process.

Notice of Preparation (NOP): A notification of preparation of an environmental impact report to responsible agencies by the lead agency during a project review under the California Environmental Quality Act.

Permit to Construct (P/C): Same as authority to construct.

Permit to Operate (P/O or PTO): A permit required by California districts prior to online operation of any emissions unit or, in some cases, facility, which is not exempt from permit.

Precursor: A compound chemically converted to a regulated pollutant after emission into the atmosphere.

Prevention of Significant Deterioration (PSD): A federal preconstruction permitting program that applies to areas that are not violating a National Ambient Air Quality Standard. The program applies pollutant-by-pollutant. That is, an air quality jurisdiction can be nonattainment for one pollutant and attainment or unclassified for another pollutant. The area will fall under the prevention of significant deterioration program for those pollutants that are attainment or unclassified.

Responsible Agency: According to Section 21069 of the California Environmental Quality Act, "a public agency, other than the lead agency which has responsibility for carrying out or approving a project."

Significant Effect on the Environment: According to Section 15002(g) of Chapter 3 of the Guidelines for Implementation of the California Environmental Quality Act, "a substantial adverse change in the physical conditions which exist in the area affected by the proposed project."

Small Power Plant Exemption (SPPE): An exemption from the application for certification process of the California Energy Commission available to power plants between 50 and 100 MWe in size.

Staff Assessment: An evaluation of an application for certification by the California Energy Commission staff. It is submitted to the Presiding Member and hearing office at the evidentiary hearings and becomes an important input into the Presiding Member's proposed decision on the project.

Stationary Source: In contrast to a mobile source, a source or set of sources that resides usually on a distinct piece of property. Permitting rules always provide formal definitions of the term stationary source. These definitions may vary by district and within district by permitting program.

More formally, according to 40 CFR 165(a)(i) and 40 CFR 166(b)(5) for the NSR and PSD permitting programs, respectively, "*Stationary source* means any building, structure, facility, or installation which emits or may emit any air pollutant subject to regulation under the Act." In turn,

Building, structure, facility or installation means all of the pollutant emitting activities which

belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control) except the activities of any vessel. Pollutant-emitting activities shall be considered as part of the same industrial grouping if they belong to the same *Major Group* (i.e., which have the same two-digit code) as described in the *Standard Industrial Classification Manual*, 1972, as amended by the 1977 Supplement (U.S Government Printing Office stock number 4101-0065 and 003-005-00176-0, respectively).

according to 40 CFR 165(a)(ii) for NSR. The same definition is used for PSD in 40 CFR 166(b)(6), except 4101-0065 is replaced with 4101-0066. California districts use similar definitions.

T-BACT: According to the Air Resources Board Risk Management Guidelines of New and Modified Sources of Toxic Air Pollutants (July 1993), "T-BACT means the most effective emissions limitation or control technique which:

1. has been achieved in practice for such permit unit category or class of source; or
2. is any other emissions limitation or control technique, including process and equipment changes of basic and control equipment, found by the Executive Officer or Air Pollution Control Officer to be technologically feasible for such class or category of sources, or for a specific source.

Although the definition of T-BACT does not explicitly state that cost is considered when determining T-BACT, in practice we recognize that T-BACT decisions implicitly take cost into consideration."

Title I of the Federal Clean Air Act: Among other purposes, that portion of the federal Clean Air Act which deals with air quality standards, nonattainment area plan requirements (including new source review), and prevention of significant deterioration.

Title II of the Federal Clean Air Act: Among other purposes, that portion of the federal Clean Air Act which deals with control of emissions from mobile sources.

Title III of the Federal Clean Air Act: That part of the federal Clean Air Act of 1990 that deals with, among other things, general administration of the federal Clean Air Act.

The federal hazardous air pollutant program is often referred to as the Title III program; however, all the provisions regulating hazardous air pollutants are found in Section 112 of Title I. This confusion arises due to the fact that Section 112 was amended with provisions of Title III of the federal Clean Air Act

Amendments.

Title V of the Federal Clean Air Act: That part of the federal Clean Air Act which deals with requirements for operating permits.

Toxic Air Contaminant (TAC): According to Section 39655 of the California Health and Safety Code, a toxic air contaminant is "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose present or potential hazard to human health." Section 39655 also incorporates all federal hazardous air pollutants as toxic air contaminants by reference.

XIII.

Small-Source

BACT Tables

XIV.

Listing of BACT and LAER Determinations