Needs and Legal Requirements for the Emission Inventory

A. Introduction

The California Air Resources Board (CARB) is required by State and federal laws to inventory sources of air pollution within California. The legal mandates that require the CARB to compile the statewide emission inventory are:

- State Health and Safety Code
- California Clean Air Act (CCAA) of 1988
- State Air Toxics "Hot Spots" Information and Assessment Act (AB2588) of 1987
- State Atmospheric Acidity Protection Program (AB2930) of 1988
- State Environmental Justice Guidelines
- Federal Clean Air Act Amendments (CAAA) of 1990
- Federal Consolidated Emission Reporting Rule (CERR) of 2002
- Other Federal Environmental Protection Agency's (EPA) requirements

Once the statewide emission inventory has been compiled to meet the State and federal requirements listed above, it is used by the CARB, local agencies, consultants, and project developers for many programs, such as:

- Develop air quality management plans
- Determine reasonable further progress (RFP)
- Develop potential control measures
- Analyze new source impacts
- Determine control program effectiveness
- Predict future air quality through modeling analyses
- Determine compliance of emission sources

B. The State Health and Safety Code

Section 39607(b) of the Health and Safety Code requires CARB to inventory sources of air pollution within the air basins of the state and determine the kinds and quantities of air pollutants emitted. CARB is also required to use, to the fullest extent, the data of local agencies in fulfilling this purpose.

Section 40701(g) of the Health and Safety Code gives power to the districts to require any owner or operator of any air pollution emission source, except a noncommercial vehicular source, to provide (1) description of the source, and (2) disclosure of the data necessary to estimate the emissions of pollutants for which ambient air quality standards have been adopted, or their precursor pollutants.

C. The California Clean Air Act of 1988 (CCAA)

AB 2595 (Sher), the California Clean Air Act of 1988, which became effective on January 1, 1989, requires all areas of the State to attain the state ambient air quality standards at the earliest practicable date.

Section 39612 of the Health and Safety Code (enacted as Section 6.5 of the Act), authorizes CARB, beginning July 1, 1989, to require districts to impose additional permit fees on nonvehicular sources authorized by district permits to emit 500 tons or more per year of any nonattainment pollutant or its precursors.

In 1989, the Board adopted sections 90800-90803, Title 17, CCR, established the California Clean Air Act Nonvehicular Source Fee Regulations for the fiscal year 1989-1990. This regulation specified that fees shall be based on the estimated 1987 emissions from all permitted facilities located in nonattainment areas and are identified as having emitted 500 tons or more per year of any nonattainment pollutant or its precursors in 1987. Subsequently, the Board adopted amendments to the regulations and added new sections to provide funding for the subsequent years. For each year the fees were based on the most current emission estimates available for the effected facilities.

D. The State Air Toxics "Hot Spots" Information and Assessment Act

The Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB2588 or "The Act"; Health and Safety Code Section 44300-44394) requires CARB to adopt fee schedules to recover anticipated costs of CARB, local air pollution control districts, and department of Health Services for implementation and administration of the Act. The fee schedules were adopted by CARB in November 1988 for facilities which 1) emit 25 tons per year or more of any one of the following four criteria pollutants: nitrogen oxides (NOx); sulfur oxides (SOx); particulate matters (PM); or total organic gas (TOG), and 2) manufacture,

formulate, use or release any of the substances listed by CARB as required by the Act or any other substance which reacts to form a listed substance.

Effective July 1, 1989, the Act became applicable to facilities emitting from 10 to less than 25 tons per year of NOx, SOx, PM, or TOG.

To implement this Act, CARB, once a year, designated the emission inventory for the purpose of establishing a fee schedule. The designated inventory was used to establish each air pollution control district's share of the state program costs and to develop fee schedules for those districts which choose to have CARB develop their fee schedules.

Senate Bill 1378, McCorquodale 1992, required that the Air Toxics Hot Spots fees be proportionate, to the extent practicable, to each facility's level of toxic emissions and priority rating. Therefore, effective in the 1993-94 fiscal year, fee schedules are based on the program category in which a facility is included. The program categories are survey, industrywide, plan and report, risk assessment, notification and audit and plan.

E. State Atmospheric Acidity Protection Act

The State Atmospheric Acidity Protection Act of 1988 (Section 39908 of the Health and Safety Code) authorizes CARB, beginning July 1, 1988, and continuing through December 31, 1993, to require districts to impose additional variance and permit fees on nonvehicular sources of sulfur and nitrogen oxides which emit 500 tons or more per year of either sulfur or nitrogen oxides.

During the first year of the program, the Board adopted Sections 90620-90623, Title 17, CCR, establishing the Atmospheric Acidity Protection Act fee program including the fee rate and amounts to be remitted to CARB by the districts. The regulations, which were based on the emission data for calendar year 1987, were applicable for fiscal year 1989-90. Subsequently, the Board approved amendments to the regulations to provide funding for the fiscal years 1990-91, 1991-92 and 1992-93. The fees for these fiscal years were based on emissions for calendar years 1988,1989, and 1990, respectively. Funding for the program ended after 1993-94 fiscal year.

F. State Environmental Justice Guidelines

CARB is committed to making the achievement of environmental justice an integral part of its activities. State law defines environmental justice as the fair treatment of all people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations and policies (SB 15, Solis, 1999).

In 2001 CARB approved the Environmental Justice Policies and Actions to establish a framework for incorporating environmental justice into CARB programs consistent with the directives of state law.

Policy V states that it is the policy of CARB to assess, consider, and reduce cumulative emissions, exposures, and health risks when developing and implementing programs. To enact this policy, new emission inventory and modeling protocols are being developed for assessing cumulative impacts from all air pollutant sources on a neighborhood scale. These protocols will need complete emission inventory information including accurate spatial and stack information, especially for ground level toxic and diesel sources.

G. Federal Clean Air Act Amendments of 1990 (CAAA)

Sections 172(c)(3) and 182(a)(1) of the federal Clean Air Act as amended in 1990 (the "Act"; 42 U.S.C. Sections 7401 et seq.), requires states with nonattainment areas to submit, by November 15, 1992, a comprehensive, accurate, current emission inventory as a revision to the state implementation plan (SIP).

CARB submitted the 1990 base year inventory on November 13, 1992, as a revision to the SIP, to the EPA for its approval.

H. Air Emission Reporting Requirement (AERR)

The purpose of the AERR is to simplify reporting, offer options for data collection and exchange, and unify reporting dates for various categories of criteria pollutant emission inventories. The rule applies to State and local agencies. This rule consolidates the emission inventory reporting requirements found in various parts of the Clean Air Act (CAA). Point source emissions of large sources

(thresholds vary by pollutant but start at 250 tons/year) are to be reported annually; all other sources are to be reported every three years.

Annual point source emissions for any given inventory year are due on December 31 of the following year. States will also be required to prepare a comprehensive Statewide inventory every three years. The first three-year inventory cycle was for the year 2002; the next cycle was for the year 2005, 2008, 2011, and so forth.

I. Regulation for the Reporting of Criteria Air Pollutants and Toxic Air Contaminants (CTR)

CARB developed the CTR regulation to implement statewide annual reporting of criteria air pollutant and toxic air contaminant emissions data from permitted facilities. Specifically, it requires either the owner or the operator of a facility to provide either the calculated emissions, or the activity data needed to quantify emissions, for permitted devices and processes, if the facility meets any of the applicability criteria.

CTR became effective January 1, 2020, with amendments effective January 1, 2022, and is phased in for various facility types over a period of seven years. However, it does not exempt facilities from local air district rules and other regulations that may have more stringent or additional reporting requirements. CTR also establishes uniform dates for when emissions reports must be submitted to the districts and when that data must be provided to the state and establishes a consistent list of data to be reported as well as the emissions sources that must be reported by facilities across all air districts.

In addition, the regulation includes a simplified, abbreviated reporting mechanism for some smaller facilities that encompass about 40 to 50 percent of all facilities required to report. CTR is a step forward in improving transparency, uniformity, and consistency in reported emissions for stationary sources and supports the mandates of AB 617, AB 197, and AB 2588.

J. Other Needs for Emission Inventories

An accurate inventory is needed to develop air quality management plans required by the EPA to show attainment and maintenance of ambient air quality standards. These standards provide a yard stick against which to measure progress in our

attempts to clean up the ambient air. Each plan must specify the control measures the local agencies intend to implement to attain the standards by the date specified in the federal Clean Air Act. Base year and projected inventories are used to identify potential control measures and sources that will be subject of these control measures.

Air pollution control districts (districts) are also required by state law to make provisions for the attainment and maintenance of state standards. Districts accomplish this primarily through two mechanisms. The first is the use of rules, which apply to all major new sources or major modifications, known as new source review (NSR) rules. In general, NSR is used to assure that the new source will not create new air quality problems or interfere with the achievement of air quality standards. The second mechanism consists of rules limiting the emissions for all sources (new or existing) to a specific level. The districts use inventories to implement these two mechanisms.

The area of the state in which the national or state ambient air quality standards are exceeded are required to demonstrate year-to-year progress toward attainment by showing that a specified percent reduction in emissions is occurring each year. To comply with this requirement an accurate inventory is needed.

Gridded inventories (emissions apportioned into smaller geographic cells) are needed as input to photochemical models, such as Urban Air Shed Models. A base year (a designated inventory year for which actual statewide emission data have been estimated and compiled) gridded inventory is used to validate the photochemical model's performance. A future year gridded inventory is run through the model to determine how further changes in emission affect air quality.

Accurate source specific information is needed or each point source for compliance processes. This data is used to determine compliance with rules and regulations as well as audit local and regional air pollution control districts.