

## **II.**

### **BACKGROUND**

#### **A. HISTORY AND STRUCTURE OF THE CONSUMER PRODUCTS REGULATIONS**

##### **1. The Consumer Products Regulations**

Although the individual use of consumer products may produce relatively small amounts of emissions, their collective use contributes a significant portion of the non-vehicular volatile organic compound (VOC) emissions in California. The VOC emissions from consumer products statewide in 1990 are estimated to be 265 tons per day, which is about 15 percent of the total stationary source VOC emissions (ARB, 1997c). VOCs are precursors in the formation of ozone, a pollutant for which State and federal ambient air quality standards have been established (ARB, 1994b).

##### **a. The California Clean Air Act**

The California Clean Air Act, enacted by the Legislature in 1988, outlines California's overall clean air strategy. This landmark legislation made consumer products part of that strategy by adding section 41712 to the California Health and Safety Code. That section requires the ARB to adopt regulations to achieve the maximum feasible reduction in VOCs emitted by consumer products. In enacting section 41712, the Legislature gave the ARB clear new authority to control emissions from consumer products, an area that had previously been subject to very few air pollution control regulations.

The consumer products regulations comprise a multistage program of "near-term," "mid-term," and "long-term" control measures. To date, the ARB has adopted four regulations (and two major amendments to those regulations) to fulfill the requirements of the California Clean Air Act as it pertains to consumer products. The first regulation was adopted in November 1989, and required a reduction in VOC emissions from antiperspirants and deodorants. The second regulation, known as "Phase I," was adopted in October 1990, and required a reduction in VOC emissions from 16 different categories of consumer products, including hairspray. That regulation was amended in January 1992, when the ARB adopted VOC limits for 10 additional categories of consumer products ("Phase II"). To provide greater flexibility to the regulated industry, the ARB adopted a third regulation, known as the Alternative Control Plan, in September 1994. This regulation allowed manufacturers, as an

alternative means of complying with VOC standards, the option of “emissions averaging” of products above and below applicable VOC limits. The fourth regulation, adopted in March 1995, required a reduction in VOC emissions from 35 categories of aerosol paints and related coating products (ARB, 1996a). The above regulations comprise the near-term measures.

In July 1997, the ARB adopted “Phase III” amendments, directed at meeting the mid-term measures SIP commitments. Those amendments added 18 new categories of consumer products to the existing consumer products regulation (ARB, 1997c).

Long-term measures are expected to rely on new technologies that are not currently available, but can be reasonably expected to emerge with further research and development. The development of long-term measures will also include consideration of market incentives, pollution prevention, consumer education, and special recognition programs (e.g., environmental labels or awards).

#### **b. The State Implementation Plan**

In November 1994, the ARB adopted the State Implementation Plan (SIP) for Ozone (ARB, 1994b). The SIP serves as California’s overall long-term plan for attaining the federal ambient air quality standard for ozone. In the SIP, California committed to achieving emission reductions from many sources of ozone precursors including consumer products, other area sources (e.g., exterior paints, asphalt paving), industrial facilities, and mobile sources (e.g., cars, trains, boats). The consumer products element of the SIP is an essential part of California’s effort to attain the ambient air quality standard for ozone. Additionally, the VOC reductions from consumer products are needed to help several local air pollution control districts to meet “rate-of-progress” requirements of the federal Clean Air Act.

In adopting the SIP, the ARB committed to an overall 85 percent reduction in consumer product emissions from 1990 levels by 2010 (i.e., from 265 to 40 tons per day). Under the SIP, the various measures, including the adopted regulations, are planned to contribute the following emission reductions:

- 30 percent from near-term measures
- 25 percent from mid-term measures
- 30 percent from long-term measures

Full implementation of near-term measures is expected by 1999. Mid-term measures are expected to be implemented by 2005, and long-term measures are expected to be implemented by 2010 (ARB, 1994b).

## **2. History and Description of the Hairspray Standard**

Hairsprays are a significant source of VOC emissions in California and are the largest single source of consumer product emissions, emitting about 46 tons/day of VOCs in 1990 (ARB, 1997a). Limits to the VOC content of hairsprays were adopted by the ARB in 1990 as part of "Phase I" of the consumer products regulations. Two tiers of VOC standards for hairsprays were adopted then. The first tier imposed an 80 percent VOC limit and was effective January 1, 1993. The second tier imposed a 55 percent VOC limit and was to take effect on January 1, 1998 (ARB, 1996a). Amendments approved by the Board in March 1997 postponed the effective date of the second tier to June 1, 1999 (ARB, 1997a).

Before 1993, manufacturers were primarily focused on meeting the first-tier, 80 percent VOC standard. Since nearly all products before then contained little or no water, the industry needed to develop new product formulations that could tolerate somewhat higher levels of water. By most accounts, manufacturers were able to reformulate their products to meet the standard while still achieving performance and cost goals consistent with pre-regulatory products. Manufacturers were generally able to employ existing resin technologies originally designed for water-free systems in those reformulations.

After 1993, the hairspray industry shifted its focus toward developing products to meet the second-tier, 55 percent VOC standard. To meet that standard, manufacturers had to consider approaches that required innovations and new formulation technologies. Difficulties arose when new high-water compatible resins were not developed at a pace sufficient to enable most manufacturers to meet the January 1998 standard. Although manufacturers developed new resins and prototype products that met the 55 percent standard, there were problems with the performance of those prototypes that needed to be addressed before final products could be brought to the marketplace. Further, many manufacturers of aerosol hairsprays were hesitant to seriously consider one of the more promising technologies, based on a non-VOC propellant, until assurance of its supply was provided in late 1995. This delayed the development of commercially feasible aerosol hairsprays using that propellant.

Staff concluded, while the 55 percent standard was technologically feasible, manufacturers needed additional time beyond January 1, 1998, to complete various stages of product development and testing to ensure that the 55 percent VOC hairspray formulas would meet customer performance expectations. Thus, in March 1997, the Board amended the consumer products regulation to extend the effective date of the 55 percent VOC standard from January 1, 1998, to June 1, 1999 (ARB, 1997a).

## **3. Major Provisions of the Alternative Control Plan Regulation**

The Alternative Control Plan (ACP) regulation, approved by the Board in 1994, is a market-based option currently available to manufacturers of consumer products that gives them more flexibility in complying with the VOC standards for various consumer products.

Manufacturers who voluntarily choose to use this plan select a group of their products and agree to place an overall limit, or “bubble,” on the aggregate emissions from those products. Care is taken to ensure that the total VOC emissions under the bubble do not exceed the emissions that would have resulted had the individual products been formulated to meet the VOC standards. Because the proposed Hairspray Credit Program builds on features of the ACP program, its major provisions are outlined here (ARB, 1994a).

To participate, manufacturers must submit a detailed plan, called the ACP, for ARB approval. The period covered by each plan, called the compliance period, can be up to one year. Manufacturers must detail their plans for emissions bubbling and must specify how such plans will preserve the VOC reductions that would have occurred under the products' applicable VOC standards. Manufacturers must demonstrate how they will account for both the VOC content of their products and for product sales in an “enforceable” manner (i.e., information can be verified independently). Further, manufacturers must detail a contingency plan for offsetting any emissions that may occur in excess of those planned.

If, at the end of the compliance period, emissions were greater than in the manufacturer's ACP plan, the contingency plan is required to be rapidly implemented. When emissions exceed the planned amount, an emission reduction “shortfall” has occurred. One possible scenario where this may happen is when sales of a higher VOC-containing product exceed expectations. If shortfalls are not quickly reconciled as outlined in the contingency plan, manufacturers are subject to violation penalties. The ACP also puts limits on the magnitude of allowable shortfalls.

On the other hand, if emissions are less than what was planned, a surplus has occurred. The ACP provides for surplus reduction credits to be issued to the manufacturer in this case. Surplus credits can only be awarded if the VOC levels in the products were lower than planned, not if product sales were less than anticipated. The emission reduction credits are issued by ARB and expire after the end of the next compliance period.

Emission reduction credits can be used by the same manufacturer or can be sold to other manufacturers under certain restrictions. Large manufacturers can purchase emission reduction credits from other manufacturers to reconcile emission shortfalls, but not for other purposes. Small manufacturers or manufacturers of single products (who otherwise would be excluded from participating because they could not balance emission increases and decreases between their products) can purchase emission reduction credits so that they may participate in the ACP program.

## **B. OVERVIEW OF EMISSION CREDIT PROGRAMS**

This section highlights some major emission credit programs in California. Emission reduction credits have been used for almost two decades to provide emission offsets from stationary (industrial) sources under New Source Review permitting programs. Emission

reduction credit use has evolved and expanded in recent years under a variety of “non-traditional” programs designed to provide increased flexibility and cost savings to the regulated community in meeting clean air goals. The proposed Hairspray Credit Program is designed to provide similar flexibility and cost savings to a specific regulated industry, the consumer products industry, on a statewide basis. The proposed program has similar innovations as a recently adopted credit program for mobile sources, described below, in that the proposed program is statewide in scope and affects a specific industry.

In spite of differences in these diverse credit programs, it is important to note that they all have maintained important core criteria first established under New Source Review programs. Those criteria require that emission reductions used to establish credits are real, enforceable, quantifiable, surplus, and permanent. Also maintained is a core requirement that the use of credits does not interfere with the attainment and maintenance of ambient air quality standards (ARB, 1990). More recent concerns regarding “environmental justice” are also affecting credit programs. Such concerns center on ensuring that credit trading programs do not unfairly shift the impacts of air pollution to groups of people of lower socioeconomic status. For example, a recent lawsuit is charging that several oil companies may have unfairly burdened low income people who live near refineries with increased exposure to toxic air pollutants because the companies used mobile source emission reduction credits in lieu of controlling emissions at the refineries.

## **1. New Source Review and District Banking Programs**

Since the 1970s, local air pollution control districts have used New Source Review programs for permitting new or expanding industrial sources in regions that violate air quality standards. Those programs, required by State and federal regulations, allow for continued industrial growth while limiting new emissions of air pollutants. Industrial sources subject to New Source Review are generally required to apply stringent emission controls and, if sufficient emissions remain, provide emission reduction offsets to mitigate the impact of those emissions. Such offsets can be provided by emission reduction credits, typically generated from the control or curtailment of emissions from existing stationary sources beyond what is required by law. Once created, emission reduction credits are banked with the air pollution district for future use by the sources that generated them, used concurrently to offset new projects, or sold to other sources to use as mitigation (ARB, 1990).

## **2. Mobile Source Credit Programs**

There are two main types of mobile source credit programs in California. One program operates at the local air pollution district level, and is used to generate emission reduction credits for use in other district programs, such as New Source Review. Mobile source emission reduction credits can be created when emissions from cars or other vehicles are reduced more than what is required by law. Some examples include hastening the retirement of older, higher-polluting vehicles (“scrap programs”), purchasing new transit

buses with low emissions, purchasing electric vehicles, and installing cleaner technology in existing vehicles (ARB, 1996b).

The other mobile source credit program is available only to certain car and truck manufacturers. They can earn credits if they achieve lower average emissions than required by ARB from their “fleet” of different vehicle types for a given model year, or if they manufacture more “clean” vehicles (such as electric cars) than ARB requires. Within defined time limits, such credits could be used by the same manufacturer in other years or sold to other manufacturers to compensate for falling short of meeting the ARB requirements (ARB, 1996c).

### **3. Statewide Regulation on Credit Trading**

In response to a legislative mandate, the ARB recently adopted a statewide regulation that provides a general framework for trading interchangeable emission credits at the local air pollution control district level. While each district adopts its own emission credit rules tailored to local needs, the ARB regulation establishes criteria that districts must use as a basis for certifying, calculating, banking and authorizing the use of credits used to meet various program requirements. The framework provided in the ARB regulation ensures the validity of credits issued by districts and ensures that the use of credits does not impede progress toward reaching clean air goals. District credit programs will allow increased flexibility to industry in meeting local air pollution control requirements. For example, emission credits may be used as an alternative means of compliance with certain district rules (ARB, 1997b).

### **4. Local Programs in the South Coast Air Quality Management District**

The South Coast Air Quality Management District (SCAQMD) has developed several innovative programs that use emission credits, some predating the statewide regulation discussed above. These programs were designed to allow more flexibility and cost savings to the regulated community while still satisfying stringent air pollution control objectives. One program, called the Regional Clean Air Incentives Market (RECLAIM), places a facility-wide air pollution limit on certain industrial facilities. Each facility is then issued RECLAIM trading credits equal to its annual emissions limit and is free to choose how it will meet that limit. If a business reduces emissions more than required, it can sell its excess trading credits to another firm. RECLAIM credits are assigned each year and can be bought or sold for use within that year (SCAQMD, 1993).

Another program under development, called the Intercredit Trading Program, will allow broader generation and use of emission credits from diverse mobile and stationary sources, including some sources not subject to district permitting requirements. The credits will be traded more readily between various district programs, including RECLAIM. The Intercredit Trading Program will comprise a series of market incentive rules, of which several are in place and several are under development (SCAQMD, 1997).



## **C. RELATED FEDERAL REQUIREMENTS**

### **1. U.S. EPA's Proposed National Consumer Products Rule**

The U.S. Environmental Protection Agency (U.S. EPA) published a proposed rule, National Volatile Organic Compound Emission Standards for Consumer Products, in April 1996 (U.S. EPA, 1996). That proposed rule is similar to the ARB's consumer products regulations, although there are some differences. One difference is that ARB's regulations cover more consumer product categories. Also, the U.S. EPA's proposed rule applies nationwide to consumer product manufacturers, importers, and distributors (but not retailers), while the ARB regulations apply to any person (including retailers) who "sells, supplies, offers for sale, or manufactures consumer products for use in the State of California." The U.S. EPA's proposed rule has an unlimited "sell-through" period that allows noncomplying products manufactured before the effective date of the standards to be sold until supplies of such products are depleted, while California law allows a three-year sell-through period.

Regarding hairsprays, the proposed U.S. EPA rule specifies a VOC content limit for hairsprays of 80 percent, which is the same as ARB's first-tier hairspray standard. However, ARB's hairspray standard is more stringent than the proposed U.S. EPA hairspray standard in that it also specifies a second-tier, 55 percent VOC limit. The ARB rule also predates the proposed U.S. EPA rule by several years. The U.S. EPA's proposed rule allows states to promulgate their own VOC standards for consumer products if they are at least as stringent as federal rules. Given the serious nature of the air pollution problem in California, the benefit to human health and the environment justifies California consumer products regulations that result in greater emission reductions than would occur under the proposed U.S. EPA rule.

### **2. U.S. EPA's Economic Incentive Program Rules**

In April 1994, the U.S. EPA published rules governing state and local economic incentive programs (EIPs), such as the credit programs described above. The federal Clean Air Act requires certain areas to adopt EIPs under specific circumstances. An EIP may be required, for example, if an extreme ozone nonattainment area fails to demonstrate adequate progress toward attainment of the national ambient air quality standard for ozone. Any EIP program so mandated must be consistent with the U.S. EPA's EIP rules. The U.S. EPA also specified that the EIP rules can be used as guidance for discretionary state programs, such as the proposed Hairspray Credit Program. (U.S. EPA, 1994)

The EIP rules outline general criteria for designing EIPs. Under the rules, state EIPs should contain design features that will ensure that the EIPs are consistent with other requirements of the federal Clean Air Act and that emissions reductions credited to the EIPs are quantifiable, surplus, enforceable, and permanent over the duration of the programs. The rule outlines a number of program elements which would generally need to be included in a state EIP. Those elements include (1) clearly defined program goals and a rationale on how

the program will meet the goals, (2) a clearly defined scope which identifies affected sources and assures that the program will not interfere with other regulatory requirements, (3) a program baseline from which results such as emissions reductions can be determined, (4) procedures for quantifying emission reductions, (5) monitoring, record-keeping and reporting requirements for affected sources, (6) an implementation schedule, (7) enforcement provisions, and (8) other elements.

Because the proposed program is not mandatory, staff drew upon the EIP rules as guidance. Consistent with using the EIP rules as guidelines, the proposed program generally incorporates the program elements outlined in the EIP.

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