

UPDATED INFORMATIVE DIGEST

ADOPTION OF AMMENDMENTS TO REGULATIONS FOR THE STATE AMBIENT AIR QUALITY STANDARDS FOR SUSPENDED PARTICULATE MATTER AND SULFATES

Sections Affected: Proposed amendments to title 17, California Code of Regulations (CCR), sections 70100 and 70200; and proposed adoption of new section 70100.1.

Background: Section 39606(a)(2) of the Health and Safety Code requires the ARB to adopt ambient air quality standards in consideration of the public health, safety, and welfare, including but not limited to health, illness, irritation to the senses, aesthetic value, visibility interference and the effects of air pollution on the economy. Ambient air quality standards, as defined in section 39014 of the Health and Safety Code, reflect the relationship between the composition and intensity of air pollution to undesirable effects. Ambient standards relating to health effects, including the PM and sulfates standards, are to be based upon the recommendations of the Office of Environmental Health Hazard Assessment (OEHHA). Existing section 70100 of 17 CCR consists of definitions of ambient air quality standards, and existing section 70200 consists of a table of standards. The adopted amendments have modified the parts of those sections pertaining to suspended particulate matter (PM) and sulfates. In addition, ARB staff proposed and the Board adopted a new section 70100.1 to set forth approved samplers, measurement methods, and instruments for monitoring for compliance with PM standards.

Section 39606(d) of the Health and Safety Code (Children's Environmental Health Protection Act (SB 25, Escutia; Stats. 1999 ch. 731, sec. 3)) required the ARB, in consultation with the OEHHA, to review all California health-based ambient air quality standards to determine if any were inadequate to protect public health, including the health of infants and children. At its December 7, 2000 meeting, the Board approved a report, "Adequacy of California Ambient Air Quality Standards: Children's Environmental Health Protection Act," prepared by ARB and OEHHA staffs. The report concluded that health effects may occur in infants and children and other potentially susceptible subgroups exposed to several criteria pollutants at or near levels corresponding to their current standards. A criteria pollutant is defined as an air pollutant for which acceptable levels of exposure can be determined and for which an ambient air quality standard has been set. The report identified the standards for particulate matter (PM), including sulfates, as having the highest priority for review and revision. Section 39606(d) of the Health and Safety Code also requires the Board to revise the highest priority California ambient air quality standard (i.e. PM) by December 31, 2002. Due to the importance of the health impacts from PM pollution, the Board directed staff to prepare a proposal for revising the standards for its consideration in spring of 2002.

For the PM and sulfates standards review, ARB and OEHHA staff considered and evaluated available scientific literature regarding the impacts of PM air pollution on public health. The body of evidence reviewed demonstrated associations between health effects and both PM10 and PM2.5. PM10 is defined as suspended PM with a mean aerodynamic diameter of 10 microns or less, and PM2.5 is defined as fine suspended PM with a mean aerodynamic diameter of 2.5 microns or less. The health effects from exposure are significant and include premature death, hospital admissions for cardiopulmonary causes, emergency room visits, acute and chronic bronchitis, asthma attacks, upper respiratory symptoms, work loss, and restricted activity.

In May 2002, staff discovered that the operation of the S-Plus statistical software package by the researchers may have introduced a bias into the results of key research studies that provided significant underpinning to the justification for the proposed 24-hour PM2.5. Therefore, it was decided that the establishment of a new 24-hour standard for PM2.5 as proposed in 17 CCR section 70200 should be deferred, based on the need to review epidemiological studies showing associations between ambient PM2.5 levels and mortality and morbidity resulting from cardiopulmonary causes. As a result, the Board directed the Executive Officer to review the key corrected research studies regarding the short-term PM standards when they become available, to report the results of the review to the Board, and to recommend appropriate recommendations for further review of the standards. The Board further directed the Executive Officer to report to the Board in a publicly noticed meeting the results of the CASAC proceedings and the promulgation of any new PM standards by the EPA, with discussion of any differences with the State PM standards.

Staff Proposal: Based on a review of the scientific evidence on PM health effects and the recommendations of the OEHHA, ARB staff proposed and the Board adopted the following:

- (1) an annual-average PM10 ambient air quality standard of 20 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), not to be exceeded;
- (2) an annual-average PM2.5 ambient air quality standard of 12 $\mu\text{g}/\text{m}^3$, as an annual arithmetic mean, not to be exceeded;
- (3) a new measurement method entitled "Measurement Method for Particulate Matter in Ambient Air," currently set forth in the "Air Monitoring Quality Assurance Manual," as printed on April 17, 2002, and available from the ARB's Monitoring and Laboratory Division (MLD), as the regulatory measurement method for PM. This method has two parts, "Measurement of PM10" and "Measurement of PM2.5"; and
- (4) ARB Method MLD 007, dated April 22, 2002, as the measurement method for sulfates.

In 17, CCR, section 70100 (Definitions), ARB staff proposed and the Board adopted the following:

- replacement of subsection (k) "Total Suspended Particulate Matter" with "Fine Suspended Particulate Matter (PM2.5)." "Sulfates" were measured based upon the definition for "Total Suspended Particulate Matter," but staff

proposed a new sulfates measurement method which was approved by the Board;

- revision to subsection (j) "Suspended Particulate Matter (PM10)" to reflect updated measurement methods for PM10; and
- revision to subsection (p) "Sulfates" to reflect an updated measurement method for sulfates.

In 17, CCR, section 70200 (Table of Standards), ARB staff proposed and the Board approved the following:

- revision to the provision for "Suspended Particulate Matter (PM10)" to reflect the proposed 20 µg/m³ standard, and new measurement methods;
- a provision for "Fine Suspended Particulate Matter (PM2.5)" to reflect the proposed PM2.5 standards, and new measurement methods; and
- revision to the provision for "Sulfates" to reflect the new measurement method.

ARB staff proposed and the Board adopted a new section 70100.1, in 17, CCR, titled "Methods, Samplers, and Instruments for Measuring Pollutants." This section is a listing of specific analytical and monitoring methods, samplers and equipment to be used to measure pollutants in the ambient air to determine compliance with the State Ambient Air Quality Standards.

In light of the information learned after the May 3, 2002 release of the Staff Report, as described above, the ARB made available on August 15, 2002 a "Notice of Public Availability of Modified Text," which provided the necessary revised regulatory language to delete the proposed text for a 24-hour PM2.5 standard as initially proposed in section 70200, title 17, CCR. Additionally, on October 10, 2002 ARB made available a second "Notice of Public Availability of Modified Text" to include additional samplers to section 70100.1, title 17, CCR, entitled "Methods, Samplers, and Instruments for Measuring Pollutants." The modified regulation, with the changes to the originally proposed text clearly indicated, as required by Government Code section 11346.7(a), were mailed in accordance with section 44, title 1, California Code of Regulations, on August 15, 2002 and October 10, 2002. Pursuant to Government Code 11347.1(b), these additional documents and all other documentation relied upon in the regulatory action were made available for inspection at the ARB's Public Information Office, Environmental Services Center. The comment periods ended August 30, 2002, and October 25, 2002, respectively.

After considering the comments received in response to the Notice of Availability of Modified Text and Additional Documents and Information, the Executive Officer issued Executive Order G-02-079 adopting the publicly noticed regulations. After the Office of Administrative law approves the final regulatory package, it is filed with the Secretary of State. The modifications to the regulations will become effective no later than 30 days after the filing.

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