DISCLAIMER

This document has been reviewed in accordance with U.S. Environmental Protection Agency policy and approved for publication. Mention of trade names or commercial products does not constitute endorsement or recommendation for use.

PREFACE

On April 30, 1971 (Federal Register, 1971), in accordance with the Clean Air Act (CAA) Amendments of 1970, the U.S. Environmental Protection Agency (EPA) promulgated the original primary and secondary National Ambient Air Quality Standard (NAAQS) for particulate matter (PM). The reference method for measuring attainment of these standards was the "high-volume" sampler (Code of Federal Regulations, 1977), which collected PM up to a nominal size of 25 to 45 μm (so-called "total suspended particulate," or "TSP"). Thus, TSP was the original indicator for the PM standards. The primary standards for PM, measured as TSP, were 260 $\mu g/m^3$, 24-h average not to be exceeded more than once per year, and 75 $\mu g/m^3$, annual geometric mean. The secondary standard was 150 $\mu g/m^3$, 24-h average not to be exceeded more than once per year.

In accordance with the CAA Amendments of 1977, the U.S. EPA conducted a re-evaluation of the scientific data for PM, resulting in publication of a revised air quality criteria document (AQCD) for PM in December 1982 and a later Addendum to that document in 1986. On July 1, 1987, the U.S. EPA published final revisions to the NAAQS for PM. The principle revisions to the 1971 NAAQS included (1) replacing TSP as the indicator for the ambient standards with a new indicator that includes particles with an aerodynamic diameter less than or equal to a nominal 10 μm ("PM_{10}"), (2) replacing the 24-h primary TSP standard with a 24-h PM_{10} standard of 150 $\mu g/m^3$, (3) replacing the annual primary TSP standard with an annual PM_{10} standard of 50 $\mu g/m^3$, and (4) replacing the secondary TSP standard with 24-h and annual PM_{10} standards identical in all respects to the primary standards.

The present PM AQCD has been prepared in accordance with the CAA, requiring the EPA Administrator periodically to review and revise, as appropriate, the criteria and NAAQS for listed criteria pollutants. Emphasis has been place on the presentation and evaluation of the latest available dosimetric and health effects data; however, other scientific data are also presented to provide information on the nature, sources, size distribution, measurement, and concentrations of PM in the environment and contributions of ambient PM to total human exposure. This document is comprised of three volumes, with the present one (Volume I) containing Chapters 1 through 7.

This document was prepared by U.S. EPA's National Center for Environmental Assessment-RTP, with assistance by scientists from other EPA Office of Research and Development laboratories (NERL; NHEERL) and non-EPA expert consultants. Several earlier drafts of the document were reviewed by experts from academia, various U.S. Federal and State government units, non-governmental health and environmental organizations, and private industry. Several versions of this AQCD have also been reviewed in public meetings by the Agency's Clean Air Scientific Advisory Committee (CASAC). The National Center for Environmental Assessment (formerly the Environmental Criteria and Assessment Office) of the U.S. EPA's Office of Research and Development acknowledges with appreciation the valuable contributions made by the many authors, contributors, and reviewers, as well as the diligence of its staff and contractors in the preparation of this document.

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