

ENVIRONMENTAL PROTECTION AGENCY**40 CFR Part 61****[AD-FRL-3620-4]****RIN 2060-AC41****National Emission Standards for Hazardous Air Pollutants; Benzene Emissions From Maleic Anhydride Plants, Ethylbenzene/Styrene Plants, Benzene Storage Vessels, Benzene Equipment Leaks, and Coke By-Product Recovery Plants****AGENCY:** Environmental Protection Agency (EPA).**ACTION:** Final rule.

SUMMARY: On December 8, 1987, the DC Circuit Court granted the EPA's motion for a voluntary remand of the benzene equipment leaks standards and the withdrawal of proposed standards for maleic anhydride and ethylbenzene/styrene (EB/S) process vents and benzene storage vessels in light of the same court's recent decision on the vinyl chloride standards (*Natural Resources Defense Council, Inc. v. EPA*, 824 F.2d at 1146 [1987]) (hereafter referred to as *Vinyl Chloride*). On July 28, 1988 (53 FR 28496), EPA proposed four policy approaches that could be used in setting national emission standards for hazardous air pollutants (NESHAP) under section 112 of the Clean Air Act (CAA), and that would be consistent with the court's decision in *Vinyl Chloride*. The proposal included the application of each of the policy approaches to the four benzene source categories in the remand, plus an additional category, coke by-product recovery plants.

This Federal Register notice announces the EPA's final decision on the policy approach for setting NESHAP that is consistent with the requirements of *Vinyl Chloride*. This notice also promulgates final rules under section 112 for benzene emissions from coke by-product recovery plants (40 CFR part 61 subpart L) and benzene storage vessels (40 CFR part 61 subpart Y); and it presents the EPA's final decisions to require no additional control of benzene equipment leaks beyond the requirements of 40 CFR 61 Subpart J, and not to regulate benzene emissions from EB/S and maleic anhydride process vents. This notice also responds to comments on the proposed policy approaches and the standards proposed under each approach.

EFFECTIVE DATE: September 14, 1989. Under section 307(b)(1) of the CAA, judicial review of NESHAP is available

only by filing a petition for review in the United States Court of Appeals for the District of Columbia Circuit within 60 days of today's publication of these rules. Under section 307(b)(2) of the CAA, the requirements that are the subject of today's notice may not be challenged later in civil or criminal proceedings brought by EPA to enforce these requirements. The incorporation by reference of certain publications in these standards is approved by the Director of the Office of the Federal Register as of September 14, 1989.

ADDRESSES: *Background Information Document.* A background information document (BID) summarizing and responding to legal comments and technical comments on the benzene source categories and risk assessment may be obtained from the U.S. EPA Library (MD-35), Research Triangle Park, North Carolina 27711, telephone (919) 541-2777. Please refer to "Benzene Emissions from Coke By-Product Recovery Plants, Benzene Storage Vessels, Equipment Leaks, and Ethylbenzene/Styrene Process Vents—Background Information and Responses to Technical Comments for 1989 Final Decisions," (Publication No. EPA-450/3-89-31).

Dockets. Docket No. OAQPS 79-3 (Part I) contains information considered in determining health effects, listing, and regulating benzene and general public comments on the proposed policy approaches. Docket No. A-79-16 contains supporting information used in the development of the standards for coke by-product recovery plants, Docket No. A-79-27 contains supporting information used in the development of the standards for benzene equipment leaks, Docket No. A-80-14 contains supporting information used in the development of the standards for benzene storage vessels, and Docket Nos. OAQPS 79-3 (Part II) and A-79-49 contain supporting information on maleic anhydride process vents and EB/S process vents, respectively. These dockets are available for public inspection and copying between 8:00 a.m. and 3:30 p.m., Monday through Friday, at the EPA's Air Docket, Room M-1500, First Floor, Waterside Mall, 401 M Street, SW., Washington, DC. A reasonable fee may be charged for copying.

FOR FURTHER INFORMATION CONTACT: For information specific to coke by-product recovery plants or benzene storage vessels, contact Ms. Gail Lacy at (919) 541-5261, Standards Development Branch, Emission Standards Division (MD-13), U.S. Environmental Protection Agency, Research Triangle Park, North

Carolina 27711. For information specific to benzene equipment leaks, EB/S process vents, or maleic anhydride process vents, contact Dr. Janet Meyer, at the above address, telephone number (919) 541-5254. For information concerning the general policy contained in this notice, contact Mr. Fred Dimmick, at the above address, telephone number (919) 541-5625. For information concerning the health effects of benzene and the risk assessment, contact Mr. Robert Kellam at (919) 541-5647, Pollutant Assessment Branch, Emission Standards Division (MD-13), at the above address.

SUPPLEMENTARY INFORMATION: The information presented in this preamble is organized as follows:

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I. Summary of Decisions**Overview**

This section provides a description of the EPA's approach for the protection of public health under section 112. In protecting public health with an ample margin of safety under section 112, EPA strives to provide maximum feasible protection against risks to health from hazardous air pollutants by (1) protecting the greatest number of persons possible to an individual lifetime risk level no higher than

approximately 1 in 1 million and (2) limiting to no higher than approximately 1 in 10 thousand the estimated risk that a person living near a plant would have if he or she were exposed to the maximum pollutant concentrations for 70 years. Implementation of these goals is by means of a two-step standard-setting approach, with an analytical first step to determine an "acceptable risk" that considers all health information, including risk estimation uncertainty, and includes a presumptive limit on maximum individual lifetime risk (MIR) of approximately 1 in 10 thousand. A second step follows in which the actual standard is set at a level that provides "an ample margin of safety" in consideration of all health information, including the number of persons at risk levels higher than approximately 1 in 1 million, as well as other relevant factors including costs and economic impacts, technological feasibility, and other factors relevant to each particular decision. Applying this approach to the five benzene source categories in today's notice results in controls that protect over 99 percent of the persons within 50 kilometers (km) of these sources at risk levels no higher than approximately 1 in 1 million.

A principle that accompanies these numerical goals is that while the Agency can establish them as fixed numbers, the state of the art of risk assessment does not enable numerical risk estimates to be made with comparable confidence. Therefore, judgment must be used in deciding how numerical risk estimates are considered with respect to these goals. As discussed below, uncertainties arising from such factors as the lack of knowledge about the biology of cancer causation and gaps in data must be weighed along with other public health considerations. Many of the factors are not the same for different pollutants, or for different source categories.

Background

On July 28, 1988, EPA proposed decisions on standards under Section 112 for five source categories of benzene. A principal aspect of the proposal, and the basis for the proposed decisions on the source categories, were four proposed approaches for decisions under Section 112 as mandated by the DC Circuit's decision in *NRDC v. EPA*, 824 F.2d at 1146 (1987) (the "*Vinyl Chloride*" decision). The *Vinyl Chloride* decision required the Administrator to exercise his judgment under Section 112 in two steps: first, a determination of a "safe" or "acceptable" level of risk considering only health factors, followed by a second step to set a standard that provides an "ample margin of safety", in

which costs, feasibility, and other relevant factors in addition to health may be considered.

The four proposed approaches were designed to provide for consideration of a variety of health risk measures and information in the first step analysis under the *Vinyl Chloride* decision—the determination of "acceptable risk." Included in the alternative approaches were three that consider only a single health risk measure in the first step: (1) Approach B, which considers only total cancer incidence with 1 case per year (case/year) as the limit for acceptability; (2) Approach C, which considers only the maximum individual risk ("MIR") with a limit of 1 in 10 thousand for acceptability; and (3) Approach D, which considers only the maximum individual risk with 1 in 1 million as the limit. The fourth approach, Approach A, was a case-by-case approach that considers all health risk measures, the uncertainties associated with them, and other health information.

In the second step, setting an "ample margin of safety", each of the four approaches would consider all health risk and other information, uncertainties associated with the health estimates, as well as costs, feasibility, and other factors which may be relevant in particular cases. The proposal solicited comment on each of the approaches as well as other approaches for implementing the *Vinyl Chloride* decision [53 FR 28511–28532]. The Agency received many public comments on the approaches from citizen's groups, companies and industry trade groups, State and local governments, and individuals. Most of the comments supported either Approach A or D, with little comment in support of Approach B or C.

Selection of Approach

Based on the comments and the record developed in the rulemaking, EPA has selected an approach, based on Approaches A and C but also incorporating consideration of incidence from Approach B and consideration of health protection for the general population on the order of 1 in 1 million from Approach D. Thus, in the first step of the *Vinyl Chloride* inquiry, EPA will consider the extent of the estimated risk were an individual exposed to the maximum level of a pollutant for a lifetime ("MIR"). The EPA will generally presume that if the risk to that individual is no higher than approximately 1 in 10 thousand, that risk level is considered acceptable and EPA then considers the other health and risk factors to complete an overall judgment on acceptability. The

presumptive level provides a benchmark for judging the acceptability of maximum individual risk ("MIR"), but does not constitute a rigid line for making that determination.

The Agency recognizes that consideration of maximum individual risk ("MIR")—the estimated risk of contracting cancer following a lifetime exposure at the maximum, modeled long-term ambient concentration of a pollutant—must take into account the strengths and weaknesses of this measure of risk. It is an estimate of the upperbound of risk based on conservative assumptions, such as continuous exposure for 24 hours per day for 70 years. As such, it does not necessarily reflect the true risk, but displays a conservative risk level which is an upperbound that is unlikely to be exceeded. The Administrator believes that an MIR of approximately 1 in 10 thousand should ordinarily be the upper end of the range of acceptability. As risks increase above this benchmark, they become presumptively less acceptable under section 112, and would be weighed with the other health risk measures and information in making an overall judgment on acceptability. Or, the Agency may find, in a particular case, that a risk that includes MIR less than the presumptively acceptable level is unacceptable in the light of other health risk factors.

In establishing a presumption for MIR, rather than a rigid line for acceptability, the Agency intends to weigh it with a series of other health measures and factors. These include the overall incidence of cancer or other serious health effects within the exposed population, the numbers of persons exposed within each individual lifetime risk range and associated incidence within, typically, a 50 km exposure radius around facilities, the science policy assumptions and estimation uncertainties associated with the risk measures, weight of the scientific evidence for human health effects, other quantified or unquantified health effects, effects due to co-location of facilities, and co-emission of pollutants.

The EPA also considers incidence (the numbers of persons estimated to suffer cancer or other serious health effects as a result of exposure to a pollutant) to be an important measure of the health risk to the exposed population. Incidence measures the extent of health risk to the exposed population as a whole, by providing an estimate of the occurrence of cancer or other serious health effects in the exposed population. The EPA believes that even if the MIR is low, the overall risk may be unacceptable if