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Arthur B. Ferguson Jr.

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III

Direct Federal Controls: New Source Performance Standards And Hazardous Emissions

The Clean Air Act places the initial burden of developing and enforcing plans for the abatement of air pollution on the states. The role assigned to EPA in this framework is largely supervisory; the Administrator is to insure that the states fulfill their responsibilities under the Act and step in as a last resort if state regulation is ineffective.

Some air pollution problems, however—largely because they were thought to require uniform nationwide regulation—were left for solution to EPA.

Three specific areas of regulation which were left to EPA were emissions from new stationary sources, hazardous air pollutants, and mobile source emissions. This Chapter examines sections 111 and 112 of the Clean Air Act, dealing respectively with standards of performance for new stationary sources and emission standards for hazardous air pollutants, and summarizes the Administrator's actions in implementing these sections of the Act.


2. Id. §§ 110, 113(a), 42 U.S.C. §§ 1857c-5, 1857c-8(a). For discussion of state planning and enforcement, see Comment, II: State Implementation Plans and Air Quality Enforcement, 4 ECOLOGY L.Q. 595 (1975) [hereinafter cited as State Plans and Enforcement].

3. One of the more serious difficulties creating a need for nationwide regulation is the "... chronic problem of interstate economic competition, otherwise called the 'pollution haven' problem, that might result if there is variation among states in requirements applicable to major new air polluting sources." FEDERAL ENVIRONMENTAL LAW 1104 (E. Dolgin & T. Guilbert, eds. 1974).

4. A stationary source is defined as "... any building, structure, facility, or installation which emits or may emit any air pollutant." Clean Air Amendments § 111(a)(3), 42 U.S.C. § 1857c-6(a)(3) (1970).

5. A hazardous air pollutant is "... an air pollutant to which no ambient air quality standard is applicable and which in the judgment of the Administrator may cause, or contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness." Id. § 112(a)(1), 42 U.S.C. § 1857c-7(a)(1).

6. For a discussion of mobile source emission control, see Comment, IV: The Automobile Controversy—Federal Control of Vehicular Emissions, 4 ECOLOGY L.Q. 661 (1975) [hereinafter cited as The Automobile Controversy].


8. See generally Trumbull, Federal Control of Stationary Source Air Pollution, 2 ECOLOGY L.Q. 283 (1972).
NEW SOURCE PERFORMANCE STANDARDS

The Act provides for direct federal regulation of certain categories of new or modified stationary sources. The Administrator is directed to identify categories of stationary sources which will be subject to section 111 performance standards, based on his determination that such categories "may contribute significantly to air pollution which causes or contributes to the endangerment of public health or welfare." The federal performance standards, to be promulgated by the Administrator, are emission standards which reflect "the degree of emission limitation achievable" by use of the best control system that, in the judgment of the Administrator, has been adequately demonstrated. Cost is to be considered in the determination of achievable emission reduction.

After complying with the procedural requirements of section 111, the Administrator on December 23, 1971 issued a list of categories of sources to be regulated, and announced new source performance standards for each category. These first categories included Portland cement plants, sulfuric acid plants, nitric acid plants, municipal incinerators, and fossil-fuel fired generators. EPA has since promulgated final emission standards for seven additional categories of sources: asphalt concrete plants, petroleum refineries, storage vessels for petroleum liquids, secondary lead smelters, secondary brass and bronze ingot production plants, iron and steel plants, and sewage treatment plants.

10. Id.
13. Id.
14. Within 90 days of the enactment of the Act, the Administrator was to publish a list of categories of stationary sources (and from time to time revise such list) for which he would promulgate performance standards. Id. § 111(b)(1)(a), 42 U.S.C. § 1857c-6(b)(1)(A). Within 120 days, proposed regulations were to be published, followed by a period for interested persons to submit written comments. The final standards were to be published within 90 days of the proposed standards, and would be effective on that date. Id. § 111(b)(1)(B), 42 U.S.C. § 1857c-6(b)(1)(B).
16. The standards of performance for Portland cement plants limit the emission of particulate matter. Id. § 60.62. Similar standards were promulgated for incinerators. Id. § 60.52. Sulfur dioxide and acid mist limitations were set for sulfuric acid plants, id. § 60.82 and § 60.83, while nitrogen oxide emissions were set for nitric acid plants, id. § 60.72, and standards for fossil-fuel steam generators were established for particulate matter, sulfur dioxide, and nitrogen oxides. Id. § 60.42, § 60.43, and § 60.44. EPA has since made technical revisions of the standards for these sources. See Standards of Performance for New Stationary Sources, 39 Fed. Reg. 20790 (1974).
The Administrator is allowed by the Act to set different standards within the same category of sources, based on class, type, and size distinctions. The states may set performance standards for these new sources, but such standards may not be any less stringent than the federal standards. Although the President may exempt some existing federal sources from emission standards established under applicable state implementation plans, he may not so exempt federal facilities from compliance with new source performance standards. Any violation of the new source standards after their effective date is unlawful, and the Administrator may proceed with enforcement actions under sections 113 and 114.

The emission standards promulgated under section 111 apply only to a "new source," defined as any stationary source, the construction or modification of which is commenced after the publication of regulations (or, if earlier, proposed regulations) prescribing a standard of performance under this section which will be applicable to such source.

The term "construction" is not difficult to apply, but the meaning of "modification" and its interpretation by the Administrator will be crucial to the enforcement of this section. Section 111 defines a modification as "any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant.

Standards for particulate matter were set for asphalt concrete plants, petroleum refineries, secondary lead smelters, secondary brass and bronze ingot production plants, iron and steel plants, and sewage treatment plants; hydrocarbon standards were set for storage vessels for petroleum liquids; and petroleum refineries have standards set for carbon monoxide and sulfur dioxide. Id.

21. Id. § 111(e), 42 U.S.C. § 1857c 6(e).
24. The Administrator does have the authority to apply new source performance standards governing pollutants for which there are no ambient air quality criteria to existing sources of those pollutants. Clean Air Amendments § 111(d), 42 U.S.C. § 1857c-6(d) (1970). This provision has received little attention and the Administrator has not as yet taken advantage of its provisions, since none of the performance standards promulgated to date— with the exception of acid mist standards for sulfuric acid plants, supra note 16— have applied to pollutants for which ambient air quality standards have not been issued. See FEDERAL ENVIRONMENTAL LAW 1106 (E. Dolgin & T. Gulbert eds. 1974).
emitted by such source or which results in the emission of any air pollutant not previously emitted.\textsuperscript{27} The regulations attempt to clarify this by stating that "physical change" does not include routine maintenance, repair, and replacement.\textsuperscript{28} The fine line that must be drawn between "replacement" and "modification" will be crucial to owners and operators of affected sources. At the request of any owner or operator, the Administrator will review plans and make a determination of whether alterations will be considered "maintenance, repair, and replacement," or "modifications."\textsuperscript{29}

Once the performance standards are established, both the Administrator and the states are involved in the implementation and enforcement of the standards. Under section 110(a)(2)(D),\textsuperscript{30} each state must include in its state implementation plan, a "procedure . . . for review (prior to construction or modification) of the location of new sources to which a standard of performance will apply."\textsuperscript{31} These procedures must provide for state authority to prevent construction or modification of any new source at any location which the state determines would prevent the attainment or maintenance of either the primary or secondary standards.\textsuperscript{32} The procedure further must require owners or operators to submit relevant information to the state so the state may determine if either the primary or secondary standards will be violated.\textsuperscript{33} The language of sections 110(a)(2)(D) and (a)(4)\textsuperscript{34} seems to suggest that these steps are all that is required of the states in the implementation plan, though review procedures must, of course, also consider the problems of significant deterioration\textsuperscript{35} and increased mo-

\textsuperscript{27} Clean Air Amendments § 111(a)(4), 42 U.S.C. § 1857c-6(a)(4) (1970). The regulations provide that an increase in production up to the limits of designed capacity, an increase in hours of operation, and the use of alternative fuels, if the facility was designed to use such fuels, are not considered changes in methods of operation under section 111. New Source Standards, supra note 15, 40 C.F.R. § 60.2 (h)(2)(1), (ii), and (iii) (1973). Note, however, that all three of these factors may "[increase] the amount of any air pollutant emitted by [a] source . . . ." and the use of an alternative fuel may "[result] in the emission of [an] air pollutant not previously emitted."

\textsuperscript{28} New Source Standards, supra note 15, 40 C.F.R. § 60.2(h)(1) (1973).

\textsuperscript{29} Id. § 60.5.


\textsuperscript{31} Id.

\textsuperscript{32} Id. § 110(a)(4), 42 U.S.C. § 1857c-5(a)(4).

\textsuperscript{33} Id. See Requirements for Preparation, Adoption and Submittal of Implementation Plans, 40 C.F.R. § 51.11(a)(4) (1973) [hereinafter cited as Implementation Plans].

\textsuperscript{34} 42 U.S.C. §§ 1857c(a)(2)(D) and (a)(4) (1970). See also Implementation Plans, supra note 33, 40 C.F.R. § 51.18 (1973); see generally State Plans and Enforcement, supra note 2.

\textsuperscript{35} See Comment, V: Control of Complex Emissions Sources—A Step Toward Land Use Planning, 4 ECOLOGY L.Q. 693 (1975), text accompanying notes 190-218.
bile source activity that may result from the construction of a stationary source.

Section 111(c)(1) allows the states to assume responsibility for new source standards by establishing procedures for the implementation and enforcement of the performance standards. The state, however, must set standards no less strict than those set by the Administrator, and must institute a permit, licensing, or approval system for implementation. The Administrator, presumably, must adopt federal procedures for implementation and enforcement of the standards in those states where such procedures are not developed or where the Administrator finds the submitted procedures to be inadequate. Although in appropriate cases these enforcement powers are delegated to the states, EPA retains full enforcement authority over new sources subject to section 111.

Section 111 raises several additional problems. The proper role of cost considerations in establishing the standards is not clear. The decision as to what is the "best system of emission reduction which . . . the Administrator determines has been adequately demonstrated" may present difficulties.

Portland Cement v. Ruckelshaus raises a third problem. Petitioners there argued that the new source performance standards unfairly discriminated against cement plants and in favor of power plants and incinerators which were allowed to emit more particulate matter. The reason for the different standards, according to EPA, was that superior control technology (fabric-filters) was available for cement plants, a control method that had not been adequately demonstrated with respect to the other industries. The court agreed with EPA, holding:

The essential question is whether the mandated standards can be met by a particular industry for which they are set, and this can typically

36. See The Automobile Controversy, supra note 6.
41. Id. § 111(a)(1), 42 U.S.C. § 1857c-6(a)(1).
42. Id.
43. 486 F.2d 375, 5 ERC 1593 (D.C. Cir. 1973).
44. Id. See New Source Standards, supra note 15, 40 C.F.R. §§ 60.62 and 60.52 (1973).
45. 486 F.2d at 388-89, 5 ERC at 1601.
be decided on the basis of information concerning that industry alone.\textsuperscript{46}

Nevertheless, the court added that inter-industry comparison was proper in the case of industries producing substitute or alternative products and that EPA is required to consider the effects of different standards on competing industries, for that bears on the issue of cost.\textsuperscript{47} The court noted further that despite the fact that an industry could not claim it was entitled to the same standards as a noncompeting industry, an industry could seek judicial review of standards set for another industry as being too lenient and thus arbitrary. Any citizen may also challenge any standards that are set pursuant to section 307.\textsuperscript{48}

Both \textit{Portland Cement} and \textit{Essex Chemical v. Ruckelshaus}\textsuperscript{49} pointed out another difficulty with the general provisions set forth in 40 C.F.R. Part 60. To insure compliance with the performance standards, the Administrator conducts inspection and testing through performance tests.\textsuperscript{50} As originally promulgated, these tests did not exempt operations during startup, shutdown, or malfunctions which were not due to the actions of the owners or operators. Both \textit{Portland Cement} and \textit{Essex Chemical} alleged that it was unreasonable to consider excessive emissions resulting from startup, shutdown, or malfunctions during the performance tests. The court, in both cases, remanded the case for further consideration by EPA, noting that the proposed regulations for performance tests would probably be important in EPA's determinations.\textsuperscript{51} As finally promulgated and pursuant to the remand of the courts, the regulations provide that these conditions "shall not constitute representative conditions of performance tests unless otherwise specified in the applicable standard."\textsuperscript{52} Therefore, the result of the

\textsuperscript{46} Id. at 389, 5 ERC at 1602.
\textsuperscript{47} Id.
\textsuperscript{49} 486 F.2d 427, 5 ERC 1824 (D.C. Cir. 1973).
\textsuperscript{50} New Source Standards, supra note 15, 40 C.F.R. § 60.8 (1973).
\textsuperscript{51} The court stated in \textit{Portland Cement}:
In some sense [the proposed regulation of 37 Fed. Reg. 17214 (1972)] imposes a construction of 'reasonableness' to the standards as a whole and adopts a more flexible system of regulation than can be had by a system devoid of 'give.'
\textsuperscript{486 F.2d} at 399, 5 ERC at 1609. The \textit{Essex Chemical} court followed \textit{Portland Cement}, commenting:
We agree [with the court in \textit{Portland Cement}] that such variant provisions appear necessary to preserve the reasonableness of the standards as a whole and that the record does not support the 'never to be exceeded' standards currently in force. Thus, we remand for further consideration of this issue, noting that the proposed regulation should play an important role in any reconsideration.
\textsuperscript{486 F.2d} at 433, 5 ERC 1824.
\textsuperscript{52} Standards of Performance for New Stationary Sources § 60.8(c), 38 Fed. Reg. 28564, 28565 (1973).
courts' rulings and the regulations is that the emission standards and limitations may be exceeded under specified conditions and industry will not be subject to the federal enforcement provisions of section 113,53 or citizen suits pursuant to section 304,54 under these circumstances.

B

HAZARDOUS AIR POLLUTANTS

Congress vested in the Administrator primary authority for the regulation and control of hazardous air pollutants. Although the implementation and enforcement responsibilities may be delegated to the states,55 the Administrator retains complete authority to establish emission standards for hazardous pollutants, and concurrent authority to enforce them.56 Congress has defined “hazardous air pollutants” as those

to which no ambient air quality standard is applicable and which in the judgment of the Administrator may cause, or contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness.57

Although the definition may be difficult to apply, it is clear that if the Administrator sets air quality criteria and ambient air standards for a pollutant, it cannot be treated as a hazardous air pollutant within the scope of section 112. Therefore, before issuing primary and secondary standards for a pollutant,58 EPA should determine whether or not such pollutant is more properly regulated under the stricter standards imposed by section 112. If not, then the Administrator must decide whether or not to issue air quality criteria for such pollutant.59

The Act directs the Administrator to set the emission standards for hazardous air pollutants “at the level which in his judgment provides an ample margin of safety to protect the public from such ... pollutants.”60 Cost is not to be considered in the promulgation of the standards, and the existing state of control technology is only a relevant

56. Id. § 112(d)(2), 42 U.S.C. § 1857c-7(d)(2).
57. Id. § 112(d)(1), 42 U.S.C. § 1857c-7(d)(1).
60. Id. § 112(b)(1)(B), 42 U.S.C. § 1857c-7(b)(1).
concern in the case of waivers granted by the Administrator and exemptions granted by the President. In short, "the overriding considerations are health effects." These standards are uniformly applicable to all sources in each state. In furtherance of the congressional policy to give states primary responsibility for the mandates of the Act, states are permitted to set more stringent standards for hazardous air pollutants, but may not promulgate less stringent standards.

Under section 112(b)(1)(A), the Administrator had a non-discretionary duty to publish a list of those hazardous pollutants for which he intended to promulgate emission standards. On March 31, 1971, after consulting with "appropriate advisory committees, independent experts, and Federal departments and agencies," as required by section 117(f), the Administrator listed three hazardous air pollutants as candidates for regulation: asbestos, beryllium, and mercury.

62. Id. § 112(c)(2), 42 U.S.C. § 1857c-7(c)(2).
63. National Emission Standards For Hazardous Air Pollutants: Proposed Emission Standards For Asbestos, Beryllium, Mercury, 36 Fed. Reg. 23239 (Dec. 7, 1971) [hereinafter cited as Proposed Standards]. "These [proposed] standards are based on information derived from many sources, including health effects levels, meteorology, technical analysis of control capability, and consideration of economic impact. The overriding considerations are health effects." Id.
67. Clean Air Amendments § 117(f), 42 U.S.C. § 1857c(f) (1970). Within 180 days from the publication of the proposed list, the Administrator was to publish proposed emission standards for these three pollutants. He further was to hold a public hearing within 30 days and promulgate final standards within 180 days of the publication of the proposed standards. The public, at the hearing, could present information showing that the pollutants to be regulated clearly are not "hazardous air pollutants." The Administrator, on such a showing, could remove the pollutant from the list. Id. § 112(b)(1)(B), 42 U.S.C. § 1857c-7(b)(1)(B).

The Administrator, using references cited at the end of the general discussion, supported the inclusion of asbestos as a hazardous pollutant:

Many persons exposed to asbestos dust developed asbestosis when the dust concentration was high or the duration of exposure was long. A large number of studies have shown that there is an association between occupational exposure to asbestos and a higher-than-expected incidence of bronchial cancer. Asbestos also has been identified as a causal factor in the development of mesotheliomas, cancers of the membranes lining the chest and abdomen. There are reports of mesotheliomas associated with nonoccupational exposures in the neighborhood of asbestos sources. An outstanding feature has been the long period, commonly over 30 years, between the first exposure to asbestos and the appearance of a tumor. There is evidence which indicates that mesotheliomas occur after much less exposure to asbestos dust than the exposure associated with asbestos.

National Emission Standards for Hazardous Air Pollutants: Asbestos, Beryllium, and
Proposed emission standards were published on December 7, 1971. The proposed standards for asbestos were based on visible emissions only, and required the operation of specific control equipment. Where no such equipment was available, asbestos use was to be prohibited, because “there is no suitable technique for sampling and analyzing asbestos in the ambient air or in emission gases.”

Two different standards were proposed for beryllium. Beryllium emissions were “not to exceed 10 grams . . . in a 24 hour period” if the owner or operator uses emission testing procedures. Alternatively, they were not to exceed “amounts which result in an outplant concentration of 0.01 micrograms . . . per cubic meter of air averaged over a 30-day period,” if the owner or operator complies with the standard by measuring the ambient air concentration levels in the vicinity of the plant. Mercury emissions were measured on the basis of ambient air.


The justification for the inclusion of beryllium as a hazardous air pollutant rested on the following effects:

The proven effects of airborne beryllium materials on human health include both acute and chronic lethal inhalation effects, as well as skin and conjunctival effects. Insufficient data are available to incriminate beryllium as a human carcinogen, but the lack of any mechanism for the total elimination of beryllium body burdens, and the resulting possibly long residence time may enhance the opportunity for cancer induction. The Beryllium Registry now contains over 820 proven cases of beryllium-related disease, but since many of these were most likely due to exposure prior to the institution of controls, proper assessment of the period of exposure is not always possible; it is known, however, that chronic beryllium disease is associated not only with activities involving extraction processes, but also that 64 registry cases resulted from exposure during machining operations on beryllium materials. There are at least 45 cases of nonoccupationally incurred [sic] diseases on file with the registry, of which approximately half have been fatal, and retrospective studies of the concentrations of beryllium that resulted in some cases of chronic beryllium disease from nonoccupational exposure have concluded that the lowest concentration which produced disease was greater than 0.01 μg/m³ and probably less than 0.10 μg/m³.

Id. at 8823.

Mercury was included because it was found that:

Exposure to metallic mercury vapors may cause central nervous system injury, and renal damage. Experience with mercury vapor comes almost exclusively from animal experiments and industrial exposures. Animal (rat) data indicate a risk of accumulation in critical systems upon prolonged exposure, with a potential, for example, for selective brain damage. Prolonged exposure to about 100 micrograms mercury per cubic meter of air involves a definite risk of mercury intoxication.

Id. at 8824.

70. Id. at 23242.
71. Id. at 23239.
72. Id. at 23243. Special standards were set for beryllium-rocket motor firing.
Id. at 23244.
73. Id. at 23239, 23251. This is in accordance with Method 3 of the Appendix to these regulations. Id. at 23251.
74. Id. at 23243.
75. Id. at 23239.
concentrations, which were not to exceed 2,300 grams per 24 hour period.\(^7\) Public hearings were then held.\(^7\)

Although the Act required the Administrator to publish final emission standards for each pollutant within 180 days of the publication of the proposed standards,\(^7\) the Administrator failed to do so. After a year delay and in response to a court order,\(^8\) the final emission standards for asbestos, beryllium, and mercury were published.\(^9\) None of the pollutants had been removed from the list, although there were changes made in the final regulations on the basis of the hearings and the comments received by EPA.\(^8\) In addition, the Administrator made available information on control techniques for these pollutants, pursuant to section 112(b)(2).\(^8\)

The final regulations governing asbestos emissions differed in several ways from the proposed regulations. The Administrator re-emphasized the difficulties inherent in measuring asbestos emissions and in establishing any ambient air standard or mass emission limits.\(^8\) Because of this difficulty in measurement, EPA determined that it would be "impossible" to enforce a strict prohibition on asbestos emission. This conclusion is not carefully analyzed and represents a change from the proposed regulations which included such a prohibition if no control equipment was available.\(^8\) Due to the measurement problems, EPA has limited its regulation to visible emissions of asbestos.\(^8\)

\(^{76}\) Id. at 23239, 23245.


\(^{78}\) Clean Air Amendments § 112(b)(1)(B), 42 U.S.C. § 1857c-7(b)(1)(B) (1970). That this is a non-discretionary duty is clear from the language of the Act: "[n]ot later than 180 days after such publication, the Administrator shall prescribe an emission standard for such pollutant..." Id. (emphasis added).

\(^{79}\) Environmental Defense Fund v. Ruckelshaus, 3 ELR 20173 (D.D.C. Jan. 29, 1973) (ordering the Administrator to promulgate the emission standards for asbestos, beryllium, and mercury within 60 days).


\(^{83}\) Id. The problem was stated in the Administrator's comments accompanying the regulations:

Even if satisfactory means of measuring asbestos emissions (which is not practical method to do now) did exist, the previous unavailability of a satisfactory means of measuring ambient levels of asbestos makes it impossible to estimate even roughly the quantitative relationship between asbestos-caused illness and the doses which caused those illnesses.

\(^{84}\) See text accompanying notes 70-71 supra.

\(^{85}\) Standards, supra note 68 § 61.22, 38 Fed. Reg. at 8820, 8821, 8829 (1973). The final regulations altered the proposed regulations for building demolition, providing that the visible emission limitations do not apply. The regulations establish a procedure for the performance of building demolition, Id. § 61.22(d) at 8829, because "it would
The major question raised by the regulations of asbestos is whether the standards promulgated are adequate to protect the public health. The asbestos standard is based on visible emissions, but visibility by itself is a poor criterion for regulating pollutants since the harmful effects of such pollutants are not necessarily related to visibility. The standards in effect assume that the danger to public health and safety is threatened only when such emissions are visible. It is clear that there must be advanced research to develop efficient means to measure these emissions and to determine the relationship between various levels of emissions, levels below the visible stage, and illness. Section 103 provides for such research. Further, the Administrator has not defined "visible," thereby creating enforcement difficulties. EPA has since published further regulations covering friable asbestos.

Several changes also took place with respect to the beryllium standards, each of which expanded the scope of the regulations or eliminated difficulties in measurement. The most significant change removed the use of ambient air quality data, except in certain circumstances, as a method for establishing standards and measuring emissions. The final regulations now cover open burning of beryllium-containing waste, and exempt machining operations which use alloys containing less than 5 percent beryllium. The standards also apply to extraction plants, incinerators, foundries, ceramic manufacturing plants, machine shops, disposal of beryllium containing wastes, and rocket testing facilities. It is again questionable whether the standards pro-

be impracticable, if not impossible, to do such work without creating visible emissions." Id. at 8821. There is a one percent asbestos limitation on the contents of any spray-on materials and asbestos tailings are prohibited from being deposited on roadways, except for those in an area of asbestos ore deposits. Id. §§ 61.22(b) and (e) at 8829-30. The final regulations do not cover dumping and storage areas, often sources of asbestos emissions, because Bureau of Mines and Occupational Safety and Health Administration regulations govern these problems. They do not cover fabrication operations, due to applicable Occupational Safety and Health Administration regulations. Id. at 8821.

89. Id. § 61.32(c) at 8831. Such burning of beryllium-containing wastes is allowed in incinerators.
90. Id. § 61.30(b) at 8830.
91. Id. §§ 61.30(a) and (b) at 8830.
92. Id. § 61.40 at 8831. The standard for stationary sources is set such that emissions of beryllium would not exceed 10 grams over a 24 hour period. If operators of existing sources are able to provide three years of air quality data on beryllium emissions demonstrating that the ambient standard of 0.01 micrograms per cubic meter over a 30 day period has not been exceeded for three years, they will not be continued to require control through emission limitation; they may continue control through ambient air measurements. Id. § 61.32(b) at 8823, 8830. The beryllium standard was based
vide an "ample margin of safety." Although there are no known cases of illness directly caused by emissions of beryllium at the maximum level allowed, it is unclear whether this concentration could cause illness. As with asbestos, the lack of information about beryllium-caused illnesses underscores the need for further research pursuant to section 10393 to insure that adequate standards are set.

The mercury emission standards remained the same in the final regulations and apply to stationary sources producing mercury ore and using mercury cell chlor-alkali plants. The Administrator admitted that more research must be conducted on mercury.

All of the above emission standards were effective as of the date of promulgation, April 6, 1973. As of that date, absent a determination by the Administrator that the standards will not be violated, no new sources may be constructed, nor may there be modifications of existing sources which emit any of the above pollutants. Existing sources were given 90 days after the promulgation of the final standards to conform their emissions to the new standards, although they might apply for a waiver of this time requirement for up to two years.

A new source is defined as any stationary source, the construction or modification of which is commenced after the publication in the Federal Register of proposed national emission standards for hazardous air pollutants which will be applicable to such source.

Construction or modification begins when a continuous program of building or alteration is undertaken or when a binding contractual agreement is entered into to undertake and complete any such program. Thus, if an undertaking failed to meet either of these requirements by December 7, 1971, the structure is a new source for the purposes of section 112.

on research indicating that diseases were caused by concentrations in excess of 0.01 micrograms per cubic meter, and this figure was adopted as the standard. See note 68 supra.

100. Id. § 61.02(d) at 8826.
As with standards of performance for new stationary sources, there is likely to be some controversy over whether certain actions by the owner or operator of a source constitute modifications within the meaning of section 111(a). If the actions are found to be modifications, prior approval must be sought and compliance with the standards must be immediate. If, on the other hand, the changes do not constitute modifications, compliance is not required until 90 days after the effective date of the regulation, and the Administrator has the power to grant a waiver for up to two years.

Industry and EPA will be faced with the problem of determining whether a proposed change constitutes a "physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted" and is thus a modification, or whether the change is merely routine replacement, maintenance, repair, or increase in the production rate or hours of operation—which need not be reviewed. The Administrator has agreed to clarify the situation for individual owners and operators by making decisions before the change has begun based on the written application of affected parties. In any case, the potential difficulties created by this definitional problem are not as severe as in the case of new source performance standards since existing sources will eventually be required to meet the same standards. No delay is allowed beyond the 90 day compliance period, or, if a waiver is obtained, beyond two years. The Administrator may grant a waiver if he determines that extra time is needed for the installation of the necessary controls and is assured that interim control measures will be taken to protect the public from "imminent endangerment." Although no specific steps are required by the regulations, interim control measures by existing source owners

101. See text accompanying notes 26-29, supra.
102. Clean Air Amendments § 112(a)(3), 42 U.S.C. § 1857c-7(a)(3) (1970) provides that the term "modification" has the same meaning that it is given in § 111(a), 42 U.S.C. § 1857c-6(a) (1970). EPA has experienced sufficient difficulty with the definition of modifications that the term "construction or modification," used in both § 112 and § 111, has been dropped in the Administrator's regulations relating to prevention of significant deterioration of air quality in favor of the term "construction or expansion." See Complex Sources, supra note 35.
107. Standards, supra note 68, 40 C.F.R. §§ 61.02(j)(1) and (2).
108. Id. § 61.06.
110. Id. § 112(c)(1)(B), 42 U.S.C. § 1857c-7(c)(1)(B).
or operators might include curtailment of operating hours, reduction of production, or installation of temporary control mechanisms. Upon grant of a waiver, which is discretionary and therefore not subject to section 304 attack,\textsuperscript{112} the Administrator must state the termination date of the waiver and specify a compliance schedule within the waiver period to insure installation of the necessary control equipment.\textsuperscript{119} In spite of the waiver provisions, the Administrator's authority under section 114\textsuperscript{114} remains intact.\textsuperscript{118} If a waiver application is denied, the applicant must receive the reasons for such denial.\textsuperscript{116}

The Administrator may take action against any owner or operator found in violation of these standards, or, in the case of an existing source operating under a waiver, who fails to comply with the interim control measures and timetables under section 113.\textsuperscript{117} Citizens may also sue the violator for any such failure to comply with the standards.\textsuperscript{118} Because of the dangers involved in violations of the hazardous air pollutant emission standards, there are certain exceptions to the usual procedural requirements of both sections 113 and 304 when there is a violation of standards promulgated under 112.\textsuperscript{119}

The President may, if "he finds that the technology to implement such standards is not available and the operation of such source is required for reasons of national security,"\textsuperscript{120} grant exemptions from hazardous pollutant standards for any stationary source for a period of up to two years. The exemption may be extended for "one or more additional [such] periods."\textsuperscript{121} The President must report each such exemption to Congress.

A serious deficiency of section 112 is the absence of any provision for public participation designed to secure the designation of additional pollutants as hazardous. Citizen suits may only be brought against the Administrator if he has failed to perform a non-discretionary duty.\textsuperscript{122}

\begin{itemize}
  \item \textsuperscript{112} Id. § 304, 42 U.S.C. § 1857h-2. \textit{See State Plans and Enforcement, supra note 2.}
  \item \textsuperscript{113} Standards, supra note 68, 38 Fed. Reg. 8828 (1973).
  \item \textsuperscript{114} 42 U.S.C. § 1857c-9 (1970). \textit{See State Plans and Enforcement, supra note 2, text accompanying notes 207-219.}
  \item \textsuperscript{116} Id. § 61.11(d).
  \item \textsuperscript{117} Clean Air Amendments § 113, 42 U.S.C. § 857c-8 (1970). \textit{See State Plans and Enforcement, supra note 2, text accompanying notes 15-19.}
  \item \textsuperscript{119} Clean Air Amendments § 304, 42 U.S.C. § 1857h-2 (1970).
  \item \textsuperscript{120} Id. §§ 112, 118, 42 U.S.C. §§ 1857c-7, 1857f.
  \item \textsuperscript{121} Id. § 112(c)(2), 42 U.S.C. § 1857c-7(c)(2).
  \item \textsuperscript{122} Id. § 304, 42 U.S.C. § 1857h-2. \textit{See State Plans and Enforcement, supra note 2, text accompanying notes 15-19.}
\end{itemize}
Though the procedural requirements of section 112, once a pollutant is determined to be hazardous, are non-discretionary, the initial designation is not. Thus, citizens may not sue to have the Administrator review additional pollutants, nor may industry sue to remove pollutants from the "hazardous" category, though citizens can informally present evidence to the Administrator concerning the health effects of a pollutant in an attempt to have it regulated.

Hazardous pollutants are somewhat surprisingly defined by the Act in a way that makes no explicit reference to "dangerousness" or toxicity. But the very looseness of the definition gives EPA great latitude. The speed with which regulations may be put into effect coupled with the relative ease of direct enforcement by the federal government makes section 112 a powerful tool for improvement of air quality. Though enforcement has to some extent been handicapped by the lack of a thorough understanding of the health effects of the designated pollutants and measuring difficulties, both of which require further research, section 112 provides for effective control of highly toxic emissions particularly those from identifiable single sources in specific local areas. It is somewhat surprising that EPA has acted so gingerly in putting the mandate of this section of the Act into effect.

Arthur B. Ferguson, Jr.

123. Clean Air Amendments §§ 112(b)(1)(A) and (B) and § 112(b)(2), 42 U.S.C. §§ 1857c-7(b)(1)(A) and (B) and § 1857c-7(b)(2) (1970). With respect to the initial study of air pollutants, the designation of a pollutant as "hazardous" lies "in the judgment of the Administrator," a discretionary decision, not subject to judicial review through a section 304 suit. 42 U.S.C. § 1857h-2 (1970). Although he may, "in his judgment," remove a pollutant from the hazardous classification, given sufficient evidence presented at public hearings, such removal is also discretionary. Clean Air Amendments § 112(b)(1)(B), 42 U.S.C. § 1857c-7(b)(1)(B) (1970).

124. See text accompanying note 57, supra.

125. See text accompanying notes 95-99, supra.


127. See text accompanying notes 86-93, supra.
