

CURRENT LEGISLATION

STATE AIR POLLUTION CONTROL LEGISLATION

I. INTRODUCTION

The term "air pollution" encompasses any substance which by its presence in the atmosphere impairs the public health and welfare, the use and enjoyment of land, or the economy. It has been estimated that over 1.6 million patients are treated annually for conditions resulting from excess air pollution.¹ The most dramatic evidence of the effects of air pollution on public health has resulted from studies of extreme air pollution conditions during short periods of time.² In Donora, Pennsylvania, where the normal death rate was one death every three days, 17 people died on one day during a severe smog,³ and in a London smog of 1952, 4000 more deaths than normal occurred during a four-day period.⁴ As dramatic as these air pollution incidents are, the Surgeon General of the United States has stated that the subtler, long-range effects of air pollution produce much more serious health consequences.⁵

In addition to damaging the health of human beings, plants and animals, air pollution causes extensive property damage,⁶ including disfigurement and soiling of buildings and cars. Air pollution can also be quite annoying since it is likely to impair visibility and produce offensive odors.

Regulation of air pollution, for the most part, has been aimed at all its injurious effects. As a result, the legal definitions of air pollution encompass all that is included within the common parlance definition. In most control legislation, air pollution is defined as

the presence in the outdoor atmosphere of one or more air pollutants or any combination thereof in such quantities and of such characteristics and duration as to be, or be likely to be, injurious to public welfare, to the health of human, plant

¹ New Medical Materia, Feb. 1963, at 30.

² The most famous of the air pollution "episodes" occurred in the industrialized Meuse Valley of Belgium in 1930, in Donora, Pennsylvania in 1948, in New York City in 1953, and in London, England in 1952 and 1962. Hearings on S. 780 Before the Subcomm. on Air and Water Pollution of the Senate Comm. on Public Works, 90th Cong., 1st Sess., pt. 3, at 1120 (1967) [hereinafter cited as 1967 Hearings].

³ Id.

⁴ Id.

⁵ "[A]ir pollution is a health hazard [not] only when unusually severe weather conditions conspire to produce localized disasters." Id. (statement by William H. Stewart, Surgeon General of the United States Public Health Service). The Surgeon General also warned that the long range effects of air pollution should not be obscured by the occasional major tragedy.

⁶ U.S. Dep't of Health, Education, and Welfare, The Federal Air Pollution Program 18-19 (1966).

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or animal life, or to property, or as unreasonably to interfere with the enjoyment of life and property.⁷

Air contaminants include dust, fumes, gas, mist, smoke, vapor, odors, particulate matter or any combination of the above in the atmosphere.⁸ The legal definitions differ from the common parlance definition in only one aspect: Air contamination existing within commercial and

⁷ This is the wording of the Connecticut statute. P.A. 754, § 1, 1967 Conn. Laws (Conn. Leg. Serv. 1079-80 (1967)). A number of states have substantially similar language. See Ark. Stat. Ann. § 82-1933(2) (Supp. 1967); ch. 67-436, § 4(3), 1967 Fla. Laws (Fla. Sess. Law Serv. 932 (1967)) (definition covers both air and water pollution); S. Bill 428, § 2(b), 1967 Kan. Laws; Ky. Rev. Stat. Ann. § 224.310(6) (Supp. 1967); Miss. Code Ann. § 7106-112(2)(b) (Supp. 1966); Mont. Rev. Codes Ann. § 69-3906(2) (Supp. 1967); N.J. Stat. Ann. § 26:2C-2 (Supp. 1967); N.M. Stat. Ann. § 12-14-2(B) (Supp. 1967); Tex. Rev. Civ. Stat. Ann. art. 4477-5, §§ 2(C), (D) (Supp. 1967); ch. 61, § 1(2), 1967 Wash. Laws (Wash. Leg. Serv. 568 (1967)); ch. 83, § 6-144.30, 1967 Wis. Laws.

A number of statutes require actual injurious effect rather than only a likelihood of injurious effect. See Colo. Rev. Stat. Ann. § 66-29-3 (Supp. 1967); Del. Code Ann. tit. 7, § 6202(a) (Supp. 1966); Ga. Code Ann. § 88-902(b) (Supp. 1967); Hawaii Rev. Laws § 47-61 (Supp. 1965); Ill. Ann. Stat. ch. 111½, § 240.2(c) (Smith-Hurd 1966); Ind. Ann. Stat. § 35-4602(c) (Supp. 1967); Me. Rev. Stat. Ann. tit. 38, § 461(2) (Supp. 1967); Mich. Stat. Ann. § 14-58(2)(c) (Supp. 1965); N.Y. Pub. Health Law § 1267(4) (McKinney Supp. 1967); H. Bill 689, § 1-3704.01(B), 1967 Ohio Laws; ch. 80, § 2(B)(g), 1967 Okla. Laws (Okla. Sess. Law Serv. 114-15 (1967)); Ore. Rev. Stat. § 449.760(3) (1965); Pa. Stat. Ann. tit. 35, § 4003(5) (1964); Tenn. Code Ann. § 53-3409(c) (Supp. 1967); Utah Code Ann. § 26-24-2(3) (Supp. 1967); Wyo. Stat. Ann. § 35-489(b) (Supp. 1967).

The Maryland control statute requires that injury can be predicted with reasonable certainty. Md. Ann. Code art. 43, § 691(a) (Supp. 1967).

The Missouri statute requires that the air contaminants "directly and proximately cause or contribute to injury." Mo. Ann. Stat. § 203.020(4) (Supp. 1967).

Iowa requires that the air contaminants be injurious to "normal human, plant, or animal life . . ." H. File 480, § 2(3), 1967 Iowa Acts (Iowa Leg. Serv. 277 (1967)).

Three states, Idaho, Virginia and West Virginia, limit air pollution to air contaminants put in the air by man. Idaho Code Ann. § 39-2902 (Supp. 1967); Va. Code Ann. § 10-17.10(b) (Supp. 1966); W. Va. Code Ann. § 16-20-2 (Supp. 1967).

Two states, New Hampshire and Rhode Island, include within air pollution air contaminants that create disagreeable or unnatural odors or obscure visibility. H. Bill 352, § 1-125:79(I), 1967 N.H. Laws; R.I. Gen. Laws Ann. § 23-25-3 (Supp. 1966).

Arizona and North Carolina do not include air contaminants that interfere only with enjoyment of life and property. Ariz. Rev. Stat. Ann. § 36-1701(1) (Supp. May 1967); N.C. Gen. Stat. § 143-213(5) (Supp. 1967).

Louisiana and South Carolina do not have definitions of air pollution, but do have definitions of "undesirable levels" of air contaminants. The Louisiana definition of "undesirable levels" is very similar to those definitions of air pollution that require actual injurious effect. La. Rev. Stat. Ann. § 40:2202(c) (1965). The South Carolina definition of "undesirable levels" is similar to Louisiana's but excludes interference with enjoyment of life and property. S.C. Code Ann. § 70-101(17) (Supp. 1965).

A few states have statutes on air pollution without defining the term "air pollution." See Mass. Gen. Laws Ann. ch. 111, § 31C (Supp. 1966); Cal. Health & Safety Code §§ 24198-341 (West 1967). The United States statutes that have dealt with air pollution have not defined the term. See 42 U.S.C. §§ 1857a-1857f (1964), as amended, (Supp. I 1965), as amended, (Supp. Feb. 1968).

⁸ See, e.g., Del. Code Ann. tit. 7, § 6202(b) (Supp. 1966); ch. 727, § 2(A), 1967 Tex. Laws (Vernon's Tex. Sess. Law Serv. 1942 (1967)).

industrial plants is excluded from the legal definitions, since workmen's compensation and labor laws provide rights and remedies sufficient to control this indoor air pollution.⁹

The sources of air pollution are numerous and varied,¹⁰ but some broad categories can be delineated: (1) industrial and commercial sources—this group includes such major concerns as oil refineries, power plants, steel mills and chemical plants as well as such commercial sources as dry-cleaning establishments and restaurants; (2) municipal sources—this category includes municipally owned power plants, garbage dumps and municipally sponsored demolition and construction operations; (3) transportation sources—automobiles, trucks, airplanes and ocean-going vessels are included within this group; (4) agricultural and natural sources—this category includes crop spraying (agricultural) and forest fires (natural); and (5) individual sources—in this category fall private home and apartment house heating plants and incinerators.

Technological progress, industrial expansion, urbanization and the increased use of motor vehicles have brought about a tremendous increase in the amount of pollution in the air. Although the effect of air pollution on the cleanliness of communities, on visibility, and on the health and comfort of the people has been recognized in the past, it has been tolerated, for the most part, as the necessary result of the increased industrialization and population density in the cities. Recently, however, contamination of the atmosphere has increased to such a level that the assumption that air pollution must accompany the present level of urbanization and industrialization has been questioned. Methods of control are being sought for all of the types of air pollution sources. Where methods of control are not being found, the economic and social value of particular air pollution sources is being reevaluated.

In response to public pressure, most state and local governments have been adopting air pollution control legislation. Nearly every state in the United States has considered air pollution control legislation over the last couple of years or is considering it now,¹¹ and Congress

⁹ See, e.g., N.Y. Workmen's Comp. Law § 3(2) (McKinney 1965). See generally 58 Am. Jur. Workmen's Compensation § 252 (1948).

¹⁰ See U.S. Dep't of Health, Education, and Welfare, Technological Change as It Relates to Air Pollution, in 5 Technology and the American Economy V-135 (1966).

¹¹ Forty-four states have legislation aimed specifically at air pollution control. Alaska Stat. §§ 18.30.010-.020 (1962) (nuisance provision aimed at air pollution, enacted in 1949; Alaska also has an administrative code enacted pursuant to its public health law. See U.S. Dep't of Health, Education, & Welfare, Digest of State Air Pollution Laws 2-4 (1966)); Ariz. Rev. Stat. Ann. §§ 36-1701 to -1719 (Supp. May 1967) (enacted in 1967); Ark. Stat. Ann. §§ 82-1931 to -1943 (Supp. 1967) (enacted in 1965); Cal. Health & Safety Code §§ 24198-341 (West 1967) (Air Pollution Control District Act, enacted in 1947 and amended periodically); ch. 1545, 1967 Cal. Laws (Cal. Leg. Serv. 2765-88

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(1967)) (Mulford-Carrell Air Resources Act, enacted in 1967); Cal. Health & Safety Code §§ 24345-74 (West 1967) (Bay Area Control Act, enacted in 1955 and amended periodically; the Los Angeles County Air Pollution District has also promulgated regulations for control in Los Angeles. See 1967 Hearings 1174); Colo. Rev. Stat. Ann. §§ 66-29-1 to -16 (Supp. 1967) (enacted in 1966); P.A. 754, 1967 Conn. Laws (Conn. Leg. Serv. 1079-84 (1967)); Del. Code Ann. tit. 7, §§ 6001-33 (Supp. 1966) (enacted in 1966); ch. 67-436, 1967 Fla. Laws (Fla. Sess. Law Serv. 931-41 (1967)), repealing Fla. Stat. Ann. §§ 403.01-21 (1960), as amended, (Supp. 1966) (the original act was enacted in 1957 and amended periodically thereafter; the comprehensive revision and repealer of the original act was enacted in 1967); Ga. Code Ann. §§ 88-901 to -916 (Supp. 1967) (enacted in 1967); Hawaii Rev. Laws §§ 47-60 to -79 (Supp. 1965) (enacted in 1957 and amended in 1965); Idaho Code Ann. §§ 39-2901 to -2923 (Supp. 1967), repealing §§ 39-2901 to -2923 (1961) (original statute enacted in 1959; new statute enacted in 1967); Ill. Ann. Stat. ch. 111½, §§ 240.1-17 (Smith-Hurd 1966) (enacted in 1963 and amended periodically thereafter); Ind. Ann. Stat. §§ 35-4601 to -4608 (Supp. 1967) (enacted in 1961); H. File 480, 1967 Iowa Acts (Iowa Leg. Serv. 276-85 (1967)) (enacted in 1967); S. Bill 428, 1967 Kan. Laws (enacted in 1967); Ky. Rev. Stat. Ann. §§ 77.005-990 (1963), as amended, (Supp. 1967) (Air Pollution Control District Act, enacted in 1952 and amended in 1966); Ky. Rev. Stat. Ann. §§ 224.310-991 (Supp. 1967) (state-wide control act, enacted in 1966); La. Rev. Stat. Ann. §§ 40:2201-16 (1965), as amended, (Supp. 1967) (enacted in 1964 and amended in 1967); Md. Ann. Code art. 43, §§ 690-704 (Supp. 1967), repealing Md. Ann. Code art. 43, §§ 690-706 (1965) (original statute enacted in 1963 and amended in 1964 and 1966; new statute enacted in 1967); Mass. Gen. Laws Ann. ch. 111, § 31C (1958), as amended, (Supp. 1966) (enacted in 1954 and amended in 1963); Mass. Gen. Laws Ann. ch. 111, §§ 142A-142C (Supp. 1966), formerly Mass. Gen. Laws Ann. ch. 111, § 142A (1958) (original statute enacted in 1954; new statute enacted in 1959 and amended thereafter); Mich. Stat. Ann. §§ 14.58(1)-(26) (Supp. 1965), as amended, P.A. 95, 1966 Mich. Laws (Mich. Stat. Ann., Current Material 172-73 (1966)) (enacted in 1965 and amended in 1966); Minn. Stat. Ann. § 144.12(14) (Supp. 1967) (enacted in 1957); Miss. Code Ann. §§ 7106-111 to -136 (Supp. 1966) (enacted in 1966); Mo. Ann. Stat. §§ 203.010-180 (Supp. 1967) (enacted in 1965); Mont. Rev. Codes Ann. §§ 69-3904 to -3923 (Supp. 1967) (enacted in 1967); Nev. Rev. Stat. §§ 445.400-595 (1967); H. Bill 352, 1967 N.H. Laws (enacted in 1967); N.J. Stat. Ann. §§ 26:2C-1 to -23 (1964), as amended, (Supp. 1967) (enacted in 1954 and amended periodically thereafter); ch. 108, 1967 N.J. Laws (N.J. Sess. Law Serv. 372 (1967)) (emergency control act added in 1967); N.M. Stat. Ann. §§ 12-14-1 to -13 (Supp. 1967) (enacted in 1967); N.Y. Pub. Health Law §§ 1264-98 (McKinney Supp. 1967) (enacted in 1957 and amended periodically thereafter); N.C. Gen. Stat. §§ 143-211 to -215.10 (Supp. 1967) (air and water pollution control statute enacted in 1967); H. Bill 689, 1967 Ohio Laws (enacted in 1967); ch. 80, 1967 Okla. Laws (Okla. Sess. Law Serv. 114-20 (1967)) (enacted in 1967); Ore. Rev. Stat. §§ 449.015-.070, 449.760-990 (1965) (enacted in 1959 and amended in 1961); Pa. Stat. Ann. tit. 35, §§ 4001-15 (1964), as amended, (Supp. 1967) (enacted in 1960 and amended in 1966); R.I. Gen. Laws Ann. §§ 23-25-1 to -22 (Supp. 1966), formerly R.I. Gen. Laws Ann. §§ 23-25-1 to -27 (1956) (enacted in 1966 to replace the 1902 smoke abatement act); S.C. Code Ann. §§ 70-101 to -139 (1962), as amended, (Supp. 1967) (enacted in 1952 as a water pollution control act and amended in 1965 to include air pollution); Tenn. Code Ann. §§ 53-3408 to -3422 (Supp. 1967), repealing Tenn. Code Ann. §§ 53-3401 to -3407 (1966) (original statute enacted in 1959, present statute enacted in 1967); Tex. Rev. Civ. Stat. Ann. art. 4477-5 (Supp. 1967), repealing Tex. Rev. Civ. Stat. Ann. art. 4477-4 (1966) (original statute enacted in 1965, new statute enacted in 1967); Utah Code Ann. §§ 26-24-1 to -18 (Supp. 1967) (enacted in 1967); Va. Code Ann. §§ 10-17.10 to -17.30 (Supp. 1966) (enacted in 1966); Wash. Rev. Code Ann. §§ 70.94.010-900 (1962), as amended, (Supp. 1967), as amended, ch. 238, 1967 Wash. Laws (Wash. Leg. Serv. 568-91 (1967)) (enacted in 1957 and amended periodically thereafter); W. Va. Code Ann. §§ 16-20-1 to -13 (1966), as amended, (Supp. 1967) (enacted in 1961 and amended in 1963 and 1967); ch. 83, 1967 Wis. Laws (enacted in 1967); Wyo. Stat. Ann. §§ 35-487 to -502 (Supp. 1967) (enacted in 1967).

has passed the Air Quality Act of 1967¹² to aid the states in their control programs.

The judicial and legislative responses to the air pollution problem have been varied. In some cases, when individuals have brought actions alleging damage from air pollution, courts have applied nuisance and trespass theories to grant relief. Municipal and state legislative bodies have enacted ordinances and statutes to provide public remedies against air pollution. Intermunicipal and interstate control agencies have been set up where, because of the scope and location of the air pollution, existing political subdivisions cannot provide adequate control. A number of federal statutes, including one in 1967, have been enacted to fund local control programs and to control interstate air pollution where the states affected are unable to provide this control.

Because of the scope and complexities of the legal responses to the air pollution problem, this comment will not attempt a complete exposition of the law in the area. Instead this comment will attempt to familiarize the reader with those aspects of air pollution control that will be of value in assessing the fairness and effectiveness of existing legal responses. To this end the comment will first survey the various means of control that now exist: common law nuisance and trespass theories, statutory nuisance, municipal air pollution codes, intermunicipal control acts, state control legislation, interstate air pollution compacts, and federal Clean Air legislation. Following this, the comment will analyze the state air pollution legislation since most of the present day air pollution control is being performed at the state level. The first step in this analysis will be to examine the constitutional boundaries upon the enforcement of the prohibitions of these statutes in order to determine how much these boundaries impair the effectiveness of state air pollution control. Second, the statutes will be examined to determine the point at which they strike a balance between the public and private benefits from air pollution sources and the detrimental effects of air pollution. From this, overall conclusions will be formed about the fairness and effectiveness of the state control legislation.

II. THE EXISTING LAW OF AIR POLLUTION

A. *Common Law*

1. *Private Nuisance Action*.—The unreasonable use of one's property so as to cause substantial interference with the use and enjoyment of another's land is a common law nuisance actionable by the person who

In the District of Columbia, the Department of Public Health has been given the responsibility of creating a control program. There have been efforts in North Dakota to obtain a control statute. See 1967 Hearings 1183, 1226, 1242.

¹² 81 Stat. 485, 42 U.S.C. §§ 1857-1857I (Supp. Feb. 1968).

is deprived of the beneficial use of his land.¹³ The plaintiff's remedy is ordinarily restricted to money damages, but if the plaintiff can show that this legal remedy is inadequate a court will enjoin the defendant from continuation of his conduct.¹⁴

In order to recover in nuisance against one who is emitting air contaminants, the plaintiff must show: (1) a substantial interference¹⁵ with the use and enjoyment of his land, (2) that the defendant's conduct was either (a) intentional¹⁶ and unreasonable or (b) unintentional and actionable under the rules governing liability for negligent, reckless or ultrahazardous conduct,¹⁷ and (3) that the defendant's conduct was the proximate cause of the interference. If intent is found, the unreasonableness of the invasion is determined by a balancing process in which the gravity of harm done to the plaintiff is weighed against the social utility of the defendant's business and the suitability of the defendant's business to its location.¹⁸ If the defendant's conduct is unintentional, the plaintiff must show that the possibility of injury created an unreasonable risk of harm.

Although nuisance theory has been used for recovery of personal injury or property damages caused by air pollution,¹⁹ the obstacles to the plaintiff's case are formidable. Since multiple sources of emissions often contribute to the air pollution in a given locality, it is often impossible for the plaintiff to show which among several air pollution sources in an urban area is the proximate cause of his harm. Although all of the sources might be joined, the majority of courts require the plaintiff to show that the injury was traceable directly to each defendant.²⁰ Depending upon the type of injury that is being claimed, the plaintiff will not always be able to show the requisite substantial interference. Certainly, if all the plaintiff can show is that the pollution is annoying, he will not prevail.²¹ Moreover, if he tries to recover

¹³ *Asphalt Prods. Co. v. Marable*, 65 Ga. App. 877, 16 S.E.2d 771 (1941). See generally 39 Am. Jur. Nuisances § 2 (1942).

¹⁴ See *Griffith v. Newman*, 217 Ga. 533, 123 S.E.2d 723 (1962); *Pendoley v. Ferreira*, 345 Mass. 309, 187 N.E.2d 142 (1963).

¹⁵ W. Prosser, *Torts* § 88, at 598 (3d ed. 1964).

¹⁶ Defendant's conduct is "intentional" when he is substantially certain that he will interfere with another's use and enjoyment of land. *Restatement of Torts* § 825 (1939).

¹⁷ See *Luthringer v. Moore*, 31 Cal. 2d 489, 190 P.2d 1 (1948); *Hagy v. Allied Chem. & Dye Corp.*, 122 Cal. App. 2d 361, 265 P.2d 86 (1953).

¹⁸ *Patterson v. Peabody Coal Co.*, 3 Ill. App. 2d 311, 122 N.E.2d 48 (1954); *Restatement of Torts* §§ 826-28 (1939).

¹⁹ See *Asphalt Prods. Co. v. Marable*, 65 Ga. App. 877, 16 S.E.2d 771 (1942). See generally *Annot.*, 54 A.L.R.2d 764 (1957).

²⁰ See *O'Neal v. Southern Carbon Co.*, 216 La. 95, 43 So. 2d 230 (1949); *Maas v. Perkins*, 42 Wash. 2d 38, 253 P.2d 427 (1953). But cf. *British-American Oil Producing Co. v. McClain*, 191 Okla. 40, 41, 126 P.2d 530, 531 (1942).

²¹ See *Thiel v. Cernin*, 224 Ark. 857, 858, 276 S.W.2d 677, 679 (1955); *Reynolds v. Community Fuel Co.*, 309 Ky. 716, 720, 218 S.W.2d 950, 952-53 (1949).

for the types of injuries to health that would be considered substantial, he faces the burden of proving a cause and effect relationship. Since the types of injuries that air pollution causes might be brought about by conditions other than air pollution, the burden is often insurmountable.²²

Finally, the burden placed on the plaintiff to prove that the defendant was negligent or that his conduct was intentional and unreasonable is often very great.²³ The reasonableness of the defendant's conduct is determined by weighing the social utility of the defendant's activity and the suitability of this activity to its location against the gravity of harm to the plaintiff. Since the major producers of air pollution are large industrial and commercial concerns which have a considerable amount of economic and social value and are most often located in suitable places, the injury to the plaintiff will have to be very great before a nuisance suit will be successful.²⁴

Even if nuisance actions could successfully be maintained, they would not be effective vehicles for air pollution control. Since litigation is expensive and many people would rather submit to the status quo than litigate, few suits are likely to be brought. As a result, industries which cause much of the pollution are not likely to curtail emissions because of the threat of private nuisance actions. The cost of purchasing air pollution control devices is often much greater than the cost of paying out claims to those few plaintiffs who file and successfully maintain private nuisance suits.²⁵

2. *Trespass*.—Under the Restatement of Torts definition,²⁶ a person is liable in trespass if he intentionally causes an unprivileged entry of a person or object on land possessed by another. To establish trespass, one need only show an intentional, unprivileged entry onto the land, whereas to prove nuisance, a substantial and unreasonable interference with the use and enjoyment of land must be shown. In most cases, the proof necessary for trespass is easier because the burden of showing that the defendant's conduct is unreasonable is absent. Also, no

²² See Council of State Governments, State Air Pollution Control Act, in 26 Suggested State Legislation A-3 (1967); Griswold, Response: The Reasonable Approach to Air Pollution Control, in National Conference on Air Pollution Proceedings 13 (U.S. Dep't of Health, Education, and Welfare (1963)); 1967 Hearings 1119 (statement of William Stewart, Surgeon General of the United States Public Health Service); *Rheingold, Civil Cause of Action for Lung Damage Due to Pollution of Urban Atmosphere*, 33 Brooklyn L. Rev. 17, 30 (1966).

²³ See *Patterson v. Peabody Coal Co.*, 3 Ill. App. 2d 311, 122 N.E.2d 48 (1954).

²⁴ See *Fuchs v. Curran Carbonizing & Eng'r Co.*, 279 S.W.2d 211, 218 (Mo. Ct. App. 1955), in which the court stated that persons who live in cities must submit without recourse to annoyances and discomforts incident to municipal life because commercial enterprises are necessary for the progress of the public at large.

²⁵ See *Reynolds Metals Co. v. Lampert*, 324 F.2d 465, 466 (9th Cir. 1963).

²⁶ Restatement of Torts § 158 (1934).

substantial injury need be shown in a trespass action—the mere entry is sufficient.²⁷

One requirement has, however, made it difficult to recover in air pollution cases under a trespass theory: There must be a physical entry by a person or object. In defining "object" some courts have noted that it must be sufficiently substantial to deprive the possessor of his right to exclusive possession of his land. As a result, many courts have held that the entry of fumes, smoke, dust, and gas onto the plaintiff's land is not substantial enough to be a trespass.²⁸ Other courts have accomplished the same end without depending on the insubstantiality of the invasion by requiring that the invasion be direct. Since an intervening force, such as wind, is usually necessary to carry air contaminants from their source, the entry is held not to be direct.²⁹

In *Martin v. Reynolds Metals Co.*,³⁰ the Supreme Court of Oregon refused to accept distinctions based on the size of the interfering particle or the way it was placed on the plaintiff's land. Instead, the court emphasized the object's energy or force and held that the intrusion of invisible fluoride particulates and gases onto the plaintiff's land constituted a trespass. The court defined trespass as the invasion of a landowner's right to exclusive possession whether by visible or invisible substances.³¹ Recognizing *sub silentio* that this departure from the traditional definition of trespass would impose a heavy burden on industry, however, the court stated that a balancing-of-interests test, similar to that involved in nuisance law, must be used to decide if the defendant's intrusion violated a legally protected interest of the plaintiff.³²

In *Martin*, the artificial distinctions of the majority rule were discarded so that the plaintiff had a remedy in trespass against air pollution. Since the court held that it must balance the interests in the same manner, however, whether the suit is brought in nuisance or trespass, the only practical advantage in bringing a trespass action is the longer statute of limitations.³³

Even under *Martin*, trespass theory is inadequate for the effective control of air pollution. The difficulty in pinpointing which among

²⁷ Longenecker v. Zimmerman, 175 Kan. 719, 267 P.2d 543 (1954); 1 F. Harper & F. James, Torts § 1.8, at 26 (1956).

²⁸ See Ryan v. City of Emmetsburg, 232 Iowa 600, 4 N.W.2d 435 (1942); Annot., 54 A.L.R.2d 764, 778 (1957).

²⁹ Arvidson v. Reynolds Metals Co., 125 F. Supp. 481, 488 (W.D. Wash. 1954).

³⁰ 221 Ore. 86, 342 P.2d 790 (1959).

³¹ Id. at 94, 342 P.2d at 794.

³² Id. at 96, 342 P.2d at 795.

³³ Compare Ore. Rev. Stat. § 12.080 (1963) (trespass—six years) with Ore. Rev. Stat. § 12.110 (1967) (nuisance—two years). Some states have the same statute of limitations for both trespass and nuisance. See, e.g., Tex. Rev. Civ. Stat. Ann. art. 5526 (1958).

many possible air pollution sources in an area is causing the plaintiff's injury, the cost of litigation and the willingness of many people to accept the status quo, all tend to discourage the filing of trespass suits as they do nuisance suits.

3. *Public Nuisance*.—A nuisance is common or public when it affects the rights of the public as a group; it is private when it affects one individual or a determinable number of individuals in the enjoyment of some private right not common to the public.³⁴ Also possible is a mixed nuisance where the right affected is public, yet the nuisance causes special damage to an individual.³⁵ The difference between public and private nuisance is not in the nature or character of the activity involved, but in the extent and scope of its injurious effect. Therefore, the elements to be proved are the same whether the nuisance is public or private,³⁶ and the same balancing process to determine the reasonableness of the defendant's conduct is present in the public nuisance suit.³⁷ Unlike the private nuisance action, however, a public nuisance suit is brought by the state or municipality, and either a criminal penalty or an injunction is sought.³⁸

The common law public nuisance action offers more effective control of air pollution than does the private nuisance or trespass action. In the private nuisance suit, injunctions are given only where it can be shown that the damage remedy is inadequate. In the public nuisance suit, on the other hand, injunctions are likely to be given as a matter of course. Also, since the state or municipality brings the suit, some of the obstacles faced by private litigants may be eliminated or reduced, e.g., the ability to pay the costs of litigation and the resignation of private individuals to the status quo. Despite these advantages, however, public nuisance remains inadequate in controlling air pollution. It is often as difficult for the state to prove that the interference is substantial and unreasonable as it is for the private litigant.³⁹

³⁴ See W. Prosser, *Torts* § 87, at 593-94 (3d ed. 1964).

³⁵ *Woods v. Rock Hill Fertilizer Co.*, 102 S.C. 442, 86 S.E. 817 (1915). See W. Prosser, *supra* note 34, § 87, at 593-94.

³⁶ See *Kinney v. Koopman*, 116 Ala. 310, 22 So. 593 (1897); *Harris v. Poulton*, 99 W. Va. 20, 28-29, 127 S.E. 647, 650-51 (1925).

³⁷ See *People v. Transit Dev. Co.*, 131 App. Div. 174, 115 N.Y.S. 297 (1909).

³⁸ The adequacy of the criminal remedy is considered by the court in determining whether to exercise its equity jurisdiction. See *Engle v. Scott*, 57 Ariz. 383, 114 P.2d 236 (1941); *People ex rel. Barrett v. Fritz*, 316 Ill. App. 217, 45 N.E.2d 48 (1942).

³⁹ The general rule is that people who live in cities must submit to the discomforts and annoyances of city life such as dust, smoke and odors. To constitute a nuisance, the annoyance must be of a substantial character, and often it is difficult to ascertain whether the effect of the defendant's emissions on the public will be considered substantial. Because the reasonableness of the defendant's conduct will be determined by weighing the social utility of the activity and suitability of its location to the area against the gravity of harm to the public, the state would have to prove that the emission of air con-

B. Statutory Law

1. *Statutory Nuisance.*—A nuisance per se at common law was an act or occupation, which, because of its inherent qualities, was a nuisance at all times and under all circumstances, regardless of the location or surroundings.⁴⁰ Although the emission of smoke and other air contaminants was not considered a nuisance per se at common law,⁴¹ a state⁴² or municipality,⁴³ by exercising its police power, may declare the emission of certain quantities of air contaminants a nuisance per se. Under such a statute, the state can establish a public nuisance merely by showing that the defendant has committed the act which the statute declares a nuisance.

Those states and municipalities which have not enacted comprehensive air pollution statutes or ordinances rely on public nuisance provisions of existing health statutes⁴⁴ and ordinances⁴⁵ to control air pollution. Statutory nuisance law is certainly more effective in controlling air pollution than common law nuisance or trespass. Declaring the emission of a certain quantity of air contaminants a public nuisance eliminates the requirement of proving actual injury or inconvenience to the public. Also, the state no longer has to show that the defendant's conduct was unreasonable. On the other hand, public nuisance law, while effective in controlling air pollution, leaves no room for a judicial balancing of the equities. In order to be fair to the defendant, a balance must be struck so that the public will endure some inconvenience, and the defendant will be able to use his property as long as the harm he causes is not unreasonable. Although, presumably, there is some balancing of the interests when a regulation is promulgated by a state or municipality, a new balance cannot be struck as times and conditions change. In short, statutory nuisance law, in its rigidity, cannot undertake the necessary balancing process by which the rights and privileges of both the particular defendant and the public are adjusted to meet the needs of society.

taminants by large industries which have much social and economic value and are normally suitably located to the area, is producing grave harm to the public.

⁴⁰ *Kays v. City of Versailles*, 224 Mo. App. 178, 180, 22 S.W.2d 182, 183 (1929); *Kinney v. Koopman*, 116 Ala. 310, 318, 22 So. 593, 594 (1897).

⁴¹ *Kennedy*, *The Legal Aspects of Air Pollution Control with Particular Reference to the County of Los Angeles*, 27 S. Cal. L. Rev. 373, 379 (1954).

⁴² See *State v. Tower*, 185 Mo. 79, 84 S.W. 10 (1904).

⁴³ *Town of Green River v. Fuller Brush Co.*, 65 F.2d 112 (10th Cir. 1933); *Huron Portland Cement Co. v. City of Detroit*, 355 Mich. 227, 93 N.W.2d 888 (1959), *aff'd*, 362 U.S. 440 (1960); *Board of Health v. New York Central R.R.*, 4 N.J. 293, 72 A.2d 511 (1950).

⁴⁴ See Ala. Code tit. 22, § 75 (1958); Me. Rev. Stat. Ann. tit. 17, § 2802 (1965), as amended, (Supp. 1967); N.D. Cent. Code § 23-05-04 (1960), as amended, (Supp. 1967); S.D. Code §§ 58.0201(9)(d), (i) (Supp. 1960); Vt. Stat. Ann. tit. 18, § 610 (1959).

⁴⁵ See ordinances collected in U.S. Dep't of Health, Education, and Welfare, *Digest of Municipal Air Pollution Ordinances* (1962).

2. *Municipal Air Pollution Codes.*—The size of the municipality and the extent of air pollution existing within it normally control the type of air pollution program which is enacted.⁴⁶ A city with an inconsequential amount of air pollution may not enact an air pollution code, but instead may rely on a general nuisance ordinance. Cities such as Chicago and New York, however, have enacted comprehensive air pollution codes under which an administrative agency is created and given the power to promulgate and enforce restrictions upon the output of various air contaminants.⁴⁷

Air pollution is for the most part a local problem; the amount of air pollution in a city is affected by that city's industrialization, population, topography, climate, and prevailing wind directions and velocities. Because the amount of air pollution can vary so greatly from city to city within a state, municipal programs play a very important role in controlling air pollution.

There are two major dangers in allowing municipal codes to be the sole control of air pollution. First, the cities often lack the financial resources necessary to purchase air pollution measurement and detection devices and to hire air pollution inspectors.⁴⁸ Without these resources a city's control program is likely to be inadequate since the administrative agency cannot determine if its rules and regulations are being observed. Second, although air pollution may be primarily a local problem, it is not confined by political boundaries.⁴⁹ The emission of certain contaminants into the air from a source within one municipality may have adverse effects on another municipality; yet, only the first municipality can control the air pollution source.

3. *Intermunicipal Control.*—A regional or area-wide approach to air pollution control has become prevalent in recent years because of the limitations of municipal control.⁵⁰ In addition, the federal government has provided incentive for the regional approach by granting more funds to area-wide programs than to municipal programs.⁵¹ Under an area-wide approach, many political subdivisions may participate in one control program. Of the approximately 70 area-wide air pollution programs now existing, there are two basic types of arrangements: (1) those connected with studies, information, and advice, and

⁴⁶ See 1967 Hearings 1371.

⁴⁷ The comprehensive program may also include measuring pollutants, investigating the adverse effects of air pollution, conducting public information campaigns, issuing permits for installation and operation of potential air pollution sources, operating a laboratory and examining and evaluating control devices. See id. 1370-71.

⁴⁸ See id. 1363.

⁴⁹ See note 174 *infra*.

⁵⁰ See 1967 Hearings 1364-67.

⁵¹ 42 U.S.C. § 1857(c)(a)(1) (Supp. Feb. 1968).

(2) those concerned with enforcement.⁵² California,⁵³ Kentucky,⁵⁴ Maryland⁵⁵ and Washington⁵⁶ have used the second type of arrangement and created air pollution control regions in which control agencies have extensive rulemaking and enforcement authority. The largest and most important example of such area-wide control is the Los Angeles County District, which has jurisdiction over 4083 square miles and 71 cities within the county.⁵⁷

4. *State Control.*—In recent years the trend has been to state-wide air pollution control, partially because of the limitations of localized control programs and partially because of the availability of federal funds under the Clean Air Act of 1963.⁵⁸ Nearly every state has considered control legislation in the past couple of years or is considering it now.⁵⁹ As a result, over 40 states now have air pollution control legislation.⁶⁰

The statutes establish air pollution control commissions or boards which are given the power to adopt, after a public hearing, reasonable rules and regulations for the control of air pollution throughout the state.⁶¹ The air pollution agency is also given the power to enforce these rules and regulations, and in doing so is often instructed to consider the reasonableness of the defendant's emissions.⁶² Reasonableness is determined in each individual case by weighing a number of factors, the most common of which are: (1) the type of injury or interference with safety, health or use of property which is caused or threatened; (2) the social and economic value of the activity involved; (3) the suitability of the activity to its location; and (4) the scientific and economic practicability of reducing or eliminating the discharge resulting from the activity.⁶³

Many of the states authorize the administrative agency to establish state-wide air pollution standards of two types:⁶⁴ air quality stand-

⁵² *Id.*

⁵³ Cal. Health & Safety Code §§ 24198-341 (West 1967).

⁵⁴ Ky. Rev. Stat. Ann. §§ 77.005-.990 (1963), as amended, (Supp. 1967).

⁵⁵ Md. Ann. Code art. 43, § 693 (Supp. 1967).

⁵⁶ Ch. 238, 1967 Wash. Laws (Wash. Leg. Serv. 568-91 (1967)).

⁵⁷ See 1967 Hearings 1368.

⁵⁸ 77 Stat. 392 (1963).

⁵⁹ See note 11 *supra*.

⁶⁰ See statutes cited note 11 *supra*. In 1967 alone the following states have enacted air pollution statutes for the first time or have considerably revised older ones: Arizona, California, Connecticut, Florida, Georgia, Idaho, Iowa, Kansas, Maryland, Montana, Nevada, New Hampshire, New Jersey, New Mexico, North Carolina, Ohio, Oklahoma, Tennessee, Texas, Utah, Washington, West Virginia and Wyoming.

⁶¹ See, e.g., Mo. Ann. Stat. §§ 203.050(1)(1), .070 (Supp. 1967).

⁶² See, e.g., Tex. Rev. Civ. Stat. Ann. art. 4477-5, § 4(5)(b) (Supp. 1967).

⁶³ See pp. 748-52 *infra*.

⁶⁴ See, e.g., Mo. Ann. Stat. §§ 203.050(1)(1)(b), .050(1)(2). See also 1967 Hearings 1380.

ards, which refer to the quality of the air in the state as a whole, and emission standards, which are the restrictions on specified emissions from an air pollution source necessary to meet the air quality standards. The establishment of state-wide emission standards provides regulation of air pollution in a municipality where local government fails to act. Most states recognize the need for more stringent emission standards in some areas of the state than in others by allowing local jurisdictions to promulgate stricter standards than those established by the state air pollution control agency.⁶⁵

5. *Interstate Compacts.*—The realization that state control of air pollution may be ineffective when the pollution is caused by a source in a neighboring state has led to the enactment of interstate air pollution compacts between Indiana and Illinois,⁶⁶ and between New York, New Jersey and Connecticut.⁶⁷ To facilitate the attack on interstate air pollution, Congress, in the Clean Air Act of 1963, provided grants to interstate air pollution control agencies in amounts up to three-fourths of the cost of developing and establishing regional air pollution control programs, and up to three-fifths of the maintenance costs of such control programs.⁶⁸

6. *Federal Legislation.*—In 1955, Congress responded to the air pollution crisis by authorizing a federal program of research and technical assistance to state and local governments.⁶⁹ In this initial legislation, Congress established the policy that state and local governments should have primary responsibility in dealing with air pollution problems, and that the federal government's obligation should be to provide leadership and support. In 1959, Congress enacted legislation directing every federal installation to cooperate with interstate, state, or local air pollution control agencies.⁷⁰ In 1960, it enacted the Schenk Act which directed the Surgeon General of the United States to conduct a thorough study of air pollution caused by motor vehicles.⁷¹

Through the Clean Air Act of 1963,⁷² the federal government

⁶⁵ See, e.g., Del. Code Ann. tit. 7, § 6207 (Supp. 1966). Some states specifically preclude municipalities from enacting ordinances to control pollution. See, e.g., R.I. Gen. Laws Ann. § 23-25-19 (Supp. 1966).

⁶⁶ See Ill. Ann. Stat. ch. 111½, § 240.31 (Smith-Hurd 1966); Ind. Ann. Stat. § 35-4621 (Supp. 1967).

⁶⁷ See P.A. 554, 1967 Conn. Laws (Conn. Leg. Serv. 707-14 (1967)); N.J. Stat. Ann. §§ 32:29-1 to -39 (Supp. 1967); N.Y. Pub. Health Law §§ 1299-m to -s (McKinney Supp. 1967). There is a compact between Kansas and Missouri. Missouri has enacted the compact, but, as of this writing, the Kansas version was unavailable. See Mo. Ann. Stat. § 203.600 (Supp. 1967). There is also a compact between West Virginia and Ohio. See Ohio Rev. Code §§ 3723.01-.03 (Supp. 1967); W. Va. Code §§ 29-16-1 to -5 (Supp. 1967).

⁶⁸ 42 U.S.C. § 1857 (c)(a)(1) (Supp. Feb. 1968).

⁶⁹ 69 Stat. 322 (1955).

⁷⁰ 73 Stat. 646 (1959).

⁷¹ 74 Stat. 162 (1960).

⁷² 77 Stat. 392 (1963).

broadened its role in air pollution control by requiring that: (1) the Secretary of Health, Education and Welfare develop air quality criteria⁷³ to guide control agencies in protecting the public health and welfare; (2) federal financial assistance be given to interstate, state, regional, and local agencies to help finance the establishment and development of air pollution control programs; and (3) the Secretary of Health, Education and Welfare participate in controlling interstate and, upon request of the state concerned, intrastate air pollution endangering health and welfare. The Clean Air Act was amended in 1965⁷⁴ to enable the Secretary to establish national motor-vehicle emission standards and again in 1966⁷⁵ to authorize increased federal grants to air pollution control agencies.

The Air Quality Act of 1967⁷⁶ was enacted to supplement the Clean Air Act of 1963. While the new legislation allocates larger sums to the control of air pollution, it continues the federal policy that controlling air pollution is primarily the responsibility of the state and local governments. As a result, when the Johnson Administration proposed that national emission standards be created on an industry-wide basis, Congress refused to enact the standards since to do so would shift the burden of control onto the federal government.⁷⁷

Some of the more important sections of the Air Quality Act provide: (1) more funds to expand research activities⁷⁸ and to grant technical and financial assistance to state and local governments to develop and maintain their air pollution control programs;⁷⁹ (2) grants to state air pollution control agencies which develop uniform state inspection and testing programs for air pollution control devices on motor vehicles;⁸⁰ (3) strict controls on the introduction of fuel additives into interstate commerce;⁸¹ and (4) the Secretary of Health, Education and Welfare, after consulting with state and local authorities, with the duty of designating air quality control regions based on jurisdictional boundaries, urban-industrial concentrations and other factors.⁸² The states must then adopt air quality standards applicable to air quality regions or portions thereof located within their bound-

⁷³ Air quality criteria are not regulations or standards for the control of air pollution; they are merely an indication of the effect that can be expected from exposure to various concentrations of a particular air contaminant or a combination of air contaminants. U.S. Dep't of Health, Education and Welfare, *The Federal Air Pollution Program* 20 (1966).

⁷⁴ 79 Stat. 992 (1965).

⁷⁵ 80 Stat. 954 (1966).

⁷⁶ 81 Stat. 485, 42 U.S.C. §§ 1857-1857i (Supp. Feb. 1968).

⁷⁷ *Wall Street Journal*, Nov. 22, 1967, at 8, col. 2.

⁷⁸ 42 U.S.C. §§ 1857b, 1857b-1 (Supp. Feb. 1968).

⁷⁹ *Id.* § 1857c.

⁸⁰ *Id.* § 1857f-6b.

⁸¹ *Id.* § 1857f-6c.

⁸² *Id.* § 1857c-2.

aries.⁸³ If a state fails to take reasonable action to enforce such standards within 180 days after it is notified by the Secretary of Health, Education and Welfare that they are being violated, the federal government can bring suit to abate the pollution provided that the air pollution is interstate. If the air pollution is intrastate, however, the federal government can step in only if requested to do so by the governor of the state.

III. STATE AIR POLLUTION CONTROL

A. *Basic Structure of Regulation*

The heart of any state control is in its basic prohibitions or emission standards. Around these emission standards, one of two basic types of control systems may be formed: the "prohibitory system" or the "permit system." In the "prohibitory system" emission standards or restrictions on the use of materials or processes⁸⁴ are created either by the state legislature⁸⁵ or by an administrative agency⁸⁶ under a grant of power from the legislature.⁸⁷ In some situations the legislature may allow the municipalities to create additional or more restrictive standards.⁸⁸ Enforcement of the standards is normally performed by an administrative agency, although in some cases existing criminal law enforcement methods may be used. The enforcement agency may also have the power to issue variances, that is, statements that they will not enforce the standard. Violation of a standard will result in a penal sanction, either a fine or an injunction or both.⁸⁹

⁸³ Id. § 1857d.

⁸⁴ See Cal. Health & Safety Code § 24242 (West 1967):

A person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is: (a) As dark or darker in shade as that designated as No. 2 on the Ringelmann Chart, as published by the United States Bureau of Mines, or (b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subsection (a) of this section.

⁸⁵ See id.; Colo. Rev. Stat. Ann. § 66-29-5(3) (Supp. 1967) which prohibits:

[Allowing] combustion gas from any fuel-burning equipment in excess of 0.85 pounds per 1000 pounds of such gas, adjusted to 12 per cent carbon dioxide, or solid particulates in any other gas in excess of 0.85 pounds per 1000 pounds of undiluted gas, to escape into the atmosphere or pass any convenient measuring point in a discharge system.

⁸⁶ "Administrative agency" is intended to include air pollution control boards, air pollution control commissions, air pollution control authorities, departments of health, and similar designations in the various state statutes.

⁸⁷ See, e.g., Ariz. Rev. Stat. Ann. § 36-1707(A) (Supp. May 1967); Cal. Health & Safety Code § 24260 (West 1967); N.Y. Pub. Health Law § 1271(1)(a) (McKinney Supp. 1967).

⁸⁸ See note 65 supra.

⁸⁹ A determination that an individual has violated a restriction will generally result

AIR POLLUTION LEGISLATION

In the second method of controlling air pollution, the "permit system,"⁹⁰ standards are created just as they are in the "prohibitory system." In addition, an administrative agency is given the duty of reviewing plans and specifications for proposed or already existing sources of air contamination. The agency then endeavors to ascertain whether the source will be able to comply with applicable standards. If compliance with such standards is deemed possible, then a permit is issued enabling the applicant to build or operate.⁹¹ The permit will usually set forth the terms upon which its validity is conditioned, often simply a restatement of the standard.⁹² On the other hand, if compliance with the standards is not deemed possible, then a permit will not be issued and the proposed or existing air pollution source will not be allowed to operate. Building or operating a potential air pollution source without a required permit will generally result in a penal sanction.⁹³ A penal sanction will also be imposed upon an individual who violates the provisions of any permits which are granted.⁹⁴

This section of the comment will analyze the "prohibitory system" and "permit system" to determine their fairness and effectiveness as means of air pollution control. The initial discussion will center around the due process clause of the federal constitution and the limitation that this concept of fairness imposes upon the effectiveness of the control systems. The discussion will then broaden to a treatment of how state control legislation protects the various interests involved

in either a finding of a misdemeanor punishable by fine, see, e.g., Ark. Stat. Ann. § 82-1909(a) (Supp. 1967), or the issuance of an injunction, see, e.g., Ariz. Rev. Stat. Ann. § 36-1715 (Supp. May 1967). Thus, the ultimate penal sanction derives either from the violation of the standard itself or from violation of an injunction issued pursuant to violation of a standard. On the latter point, see H. McClintock, *Principles of Equity* § 17 (2d ed. 1948).

⁹⁰ Twenty-four states have enabling legislation for a permit system. See Ark. Stat. Ann. § 82-1935(j) (Supp. 1967); Cal. Health & Safety Code §§ 24263-82 (West 1967); Del. Code Ann. tit. 7, § 6203(7) (Supp. 1966); ch. 67-436, § 7(16), 1967 Fla. Laws (Fla. Sess. Law Serv. 935 (1967)); Hawaii Rev. Laws § 47-64(d) (Supp. 1965); Ill. Ann. Stat. ch. 111½, § 240.5-1.2 (Smith-Hurd 1966); H. File 480, § 5(7), 1967 Iowa Acts (Iowa Leg. Serv. 280 (1967)); S. Bill 428, § 8, 1967 Kan. Laws; Ky. Rev. Stat. Ann. § 224.360 (Supp. 1967) (Control Act); Ky. Rev. Stat. Ann. § 77.195 (1963) (Control District Act); Mich. Stat. Ann. § 14.58(5)(h) (Supp. 1965); Miss. Code Ann. §§ 7106-116(1), -118(a) (Supp. 1966); Mo. Ann. Stat. § 203.050(3)(b) (Supp. 1967); Mont. Rev. Codes Ann. § 69-3911 (Supp. 1967); N.J. Stat. Ann. § 26:2C-9.2 (Supp. 1967); N.Y. Pub. Health Law § 1271(1)(b)(4) (McKinney Supp. 1967); N.C. Gen. Stat. § 143-215.1(b) (Supp. 1967); H. Bill 689, § 1-3704.03(J), 1967 Ohio Laws; Ore. Rev. Stat. § 449.795 (1965); R.I. Gen. Laws Ann. § 23-25-5(k) (Supp. 1966); S.C. Code Ann. § 70-108 (1962), as amended, (Supp. 1965); Tenn. Code Ann. §§ 53-3412(2)(c), (4)(c) (Supp. 1967); Va. Code Ann. § 10-17.21 (Supp. 1966); ch. 238, §§ 29(1), 58, 1967 Wash. Laws (Wash. Leg. Serv. 578, 590 (1967)); ch. 83, § 6-144.39, 1967 Wis. Laws.

⁹¹ See, e.g., H. File 480, § 5(7), 1967 Iowa Acts (Iowa Leg. Serv. 280 (1967)).

⁹² Cf. *Madeiras v. Board of Aldermen*, 350 Mass. 767, 213 N.E.2d 921 (1966).

⁹³ See, e.g., Cal. Health & Safety Code § 24279 (West 1967).

⁹⁴ See, e.g., *id.* § 24280.

in air pollution control. For the major part of this analysis, primary emphasis will be placed on the promulgation and enforcement of standards to be used either in a "prohibitory" or "permit system." Later, additional features of the "permit system" will be discussed and related to conclusions drawn about the creation and enforcement of standards.

B. *Constitutional Limitations*

An attribute of many air pollution control standards is their use of words such as "reasonable," "disagreeable" and "obnoxious" in order to obtain flexibility in their enforcement.⁹⁵ When the terms of a state penal statute are so vague that men of ordinary intelligence must guess at their meaning and differ as to their application, the requirements of due process are not fulfilled.⁹⁶ Thus there is a substantial possibility of conflict between air pollution control standards and due process of law, since many standards employ such vague words and violation of a standard results ultimately in a penal sanction.⁹⁷

The terms used in penal statutes can be divided into two categories: precise terms, which, on their face, can convey only one reasonable meaning to the man of ordinary intelligence; and terms which, on their face, are susceptible of more than one reasonable meaning.⁹⁸ Obviously, precise terms can never be held vague⁹⁹ because, by definition, a man of ordinary intelligence would not have to guess at their meaning.

Statutes which contain ambiguous terms may be struck down because they deny due process of law. For two reasons, however, such statutes will not always be voided. First, a court may supply a precise external definition to an ambiguous term. Second, even if a precise external definition has not been supplied, a court will balance the loss to the individual resulting from upholding the statute against the public injury if it is invalidated. If it finds that the public injury is greater than the loss to the individual, it will uphold the statute.

Illustrative of providing a precise external definition is *Bandini Petroleum Co. v. Superior Court*,¹⁰⁰ where the Supreme Court of the

⁹⁵ To the extent that permits issued in the "permit system" contain such terms as conditions, the following discussion of the effect of due process requirements upon standards in the "prohibitory system" will apply with equal force to such permits. However, where the standard contains such terms, but the permit issued pursuant to it does not, then the permit will not be affected by due process requirements.

⁹⁶ *Connally v. General Constr. Co.*, 269 U.S. 385, 391 (1926).

⁹⁷ See note 89 *supra*.

⁹⁸ This categorization is an adaptation of that used by Freund, *The Use of Indefinite Terms in Statutes*, 30 *Yale L.J.* 437 (1921).

⁹⁹ Note, *The Void-For-Vagueness Doctrine in the Supreme Court*, 109 *U. Pa. L. Rev.* 67, 90-91 (1960).

¹⁰⁰ 284 U.S. 8 (1931).

United States considered a California statute prohibiting "the unreasonable waste of natural gas" in oil operations. In such oil operations, natural gas is often found under the ground, either above an oil formation or mixed in solution with the oil. The natural gas increases the fluidity of the oil and makes it easier to lift. The California Supreme Court had held that the term "unreasonable waste of natural gas" meant allowing gas to come to the surface without using its lifting power to bring the largest possible amount of oil to the surface.¹⁰¹ Before supplying this definition, the court noted that it was entitled to take judicial notice of matters of science and common knowledge, including the condition and development of the petroleum industry.¹⁰² The court then concluded that when the statute is read with the added definition, it is possible for a person to determine when he is complying.¹⁰³ The Supreme Court of the United States affirmed, holding that the statute was not unconstitutionally vague because it could be read with the construction placed upon it by the California Supreme Court and that construction created a sufficiently precise standard.¹⁰⁴

As illustrated in *Bandini*, a court will often supply a precise external definition to an imprecise term if it finds that one is commonly used in the industry involved. The willingness of a court to supply an external definition to a standard should be influenced by a further factor: the types of standards which had been promulgated in surrounding locales. If a court observed that the surrounding locales were uniformly using the same precise standard, it might be willing to define the imprecise standard before it in terms of that precise standard.¹⁰⁵

Absent a definition in general usage, industry practice or other standards, a court will not generally attempt to create a precise definition for an ambiguous term. Although the reason for not supplying a definition is often unexplained, a rationale can be constructed around a number of other pertinent considerations. First, supplying a definition where one is not readily available from custom and usage would amount to legislation and, as such, should be within the sole province of the legislature.¹⁰⁶ Second, the individual who is alleged to have violated the imprecise standard would not have had the advantage of any precise definition that the court might add. If, on the other hand, there were a precise definition available, the individual would at least have a guideline in regulating his conduct. Finally, the imprecise term may be one which is inherently incapable of being precisely defined.

¹⁰¹ Id. at 17.

¹⁰² Id. at 16.

¹⁰³ Id. at 18.

¹⁰⁴ Id.

¹⁰⁵ See, e.g., *Hoellinger v. Molzhon*, 77 N.D. 108, 110, 41 N.W.2d 217, 219 (1950).

¹⁰⁶ Cf. *Anderson v. Carlson*, 171 Neb. 741, 745, 107 N.W.2d 535, 538 (1961); *Murphy Motor Sales, Inc. v. First Nat'l Bank*, 122 Vt. 121, 124, 165 A.2d 341, 343 (1960).

When a court refuses to supply a precise external definition to an ambiguous term a due process problem arises. The cases which have considered statutes containing such imprecise terms have reached seemingly irregular decisions on their constitutional validity.¹⁰⁷ Statutes containing terms such as "unjust or unreasonable rate or charge"¹⁰⁸ or "reasonable profit"¹⁰⁹ have been held to be unconstitutionally vague, while those containing terms such as "reasonable allowance"¹¹⁰ or "unjust and unreasonable" rent¹¹¹ have been upheld.

The irregularity of the decisions can be attributed to a subjective weighing process by the courts, balancing the loss to the individual resulting from upholding the standard against the public injury if it is invalidated.¹¹² The loss to the individual can be determined by evaluating the activity that an individual may believe is unlawful under the standard. If the individual would believe that that standard invalidates a broad range of conduct, then the loss to the individual if the standard is upheld is large, since he will not engage in any of that conduct for fear of violating the standard.¹¹³ In the case of manufacturing processes, this may mean the shutdown of factories for fear of violation of the standard.

Balanced against the individual's loss is the public injury which would result if the standard were invalidated. A major factor in determining the public's injury is the availability of other more precise standards or enforcement methods that would accomplish virtually the same end as the standard under consideration.¹¹⁴ Obviously, if it is found that other standards or enforcement methods which are founded upon more precise terms are available, then the injury to the public resulting from invalidation of the standard is small.

The vagueness principles outlined above are likely to have an effect on standards aimed at control of three types of pollutants: smoke, gases and odors. Smoke control is a major element of effective air pollution control. Historically, it was one of the first attempts at

¹⁰⁷ Compare *Cline v. Frink Dairy Co.*, 274 U.S. 445, 465 (1927) (the Court stated that "it will not do to hold an average man to the peril of an indictment for the unwise exercise of his economic or business knowledge involving so many factors of varying effect that neither the person to decide in advance nor the jury to try him after the fact can safely and certainly decide the result."), with *Nash v. United States*, 229 U.S. 373, 377 (1913) (the Court stated that "the law is full of instances where a man's fate depends on his estimating rightly, that is, as the jury subsequently estimates it, some matter of degree. If his judgment is wrong, not only may he incur a fine or a short imprisonment, as here; he may incur the penalty of death.").

¹⁰⁸ See *United States v. L. Cohen Grocery Co.*, 255 U.S. 81 (1921).

¹⁰⁹ *Cline v. Frink Dairy Co.*, 274 U.S. 445 (1927).

¹¹⁰ *United States v. Ragen*, 314 U.S. 513 (1942).

¹¹¹ *Edgar A. Levy Leasing Co. v. Siegel*, 258 U.S. 242 (1922).

¹¹² Note, *The Void-For-Vagueness Doctrine in the Supreme Court*, *supra* note 99, at 95-96.

¹¹³ *Id.* at 94.

¹¹⁴ *Id.* at 95.

control because smoke is visible and, therefore, people were aware of its existence.¹¹⁵ A number of ambiguous standards have been created using such language as "unnecessary and unreasonable smoke."¹¹⁶ One of these standards came before the Appellate Division of the California Superior Court in *People v. San Pedro Lumber Co.*¹¹⁷ The court held that a citizen could not discover in advance whether his discharge of smoke would be held to violate the standard. The court noted that, if a limiting definition were available from other standards or custom and usage, it could use that definition to uphold the standard. It could, however, find no such limiting definition. Although it recognized the existence of other, more precise, smoke control standards in California, it would not use these to narrow the standard before it because there was no reference in the standard before it to these more precise standards.

Although there is no doubt that the court was correct in finding that "unnecessary and unreasonable smoke" is ambiguous, a full appraisal of the decision can be made only through an independent examination of the availability of limiting definitions and the public interest in upholding the standard. In this case there was available a standard based on the Ringelmann Smoke Chart¹¹⁸ that is in such common usage in California and throughout the country that it is, in effect, synonymous with "unnecessary and unreasonable smoke." The standard prohibits discharges which are as dark or darker than section two on the chart. The chart is used by placing it approximately 50 feet from an observer. When viewed from this distance, each of the four rectangular sections of the chart appears as a different shade of gray. Estimates of the density of a discharge of smoke are made by comparing the shade of the smoke to that section of the chart which most nearly resembles it.

Since the Ringelmann Chart smoke control standard is in such common use, it would appear that the court in *San Pedro Lumber* should have used it as a limiting definition for the vague language it had before it. If it had reached that stage, there is little doubt that the court would have upheld the standard before it. The Ringelmann

¹¹⁵ See U.S. Dep't of Interior, Bureau of Mines, Information Circular 8333: Ringelmann Smoke Chart 1 (1967), which discussed the use of the Ringelmann Smoke Chart in a smoke ordinance enacted as early as 1910 in Boston, Massachusetts.

¹¹⁶ See *People v. San Pedro Lumber Co.*, Super. Ct. No. CR A 2677 (Cal. App. Dep't Super. Ct., filed Jan. 25, 1951), where the court considered the Los Angeles, Cal., Municipal Code § 37.19.1 which provided that "no person by himself, or his employee or agent, or as an employee or agent of another, shall cause, suffer or permit to be discharged from any source whatsoever within the City of Los Angeles any unnecessary or unreasonable smoke, dust, soot or fumes."

¹¹⁷ Super. Ct. No. CR A 2677 (Cal. App. Dep't Super. Ct., filed Jan. 25, 1951).

¹¹⁸ See note 115 *supra*. On the widespread use of the Ringelmann Smoke Chart, see 1967 Hearings 1556.

Chart standard has been held by the California courts to be sufficiently precise to withstand constitutional challenge.¹¹⁹

Once the court overlooked the possibility of supplying a precise definition, however, it was almost necessarily led to the conclusion that the standard was invalid. Upholding a standard prohibiting the emission of "unnecessary and unreasonable smoke" would impose a substantial burden on a person who is emitting smoke. There appears to be a large range of conduct in which this person would not engage because it would be impossible for him to determine if he is emitting "unnecessary and unreasonable smoke." In fact, an individual might be hesitant to emit any smoke at all, fearing that a court might hold even the slightest emission to be "unnecessary and unreasonable." As a result, the vagueness in the standard could result in curtailment of manufacturing processes or private incineration where smoke is likely to be emitted.¹²⁰

The public harm if this standard were invalidated and no other smoke control standard were available would be quite large. The harmful health effects, both physical and psychological, and the impairment of property values, all of which result from smoke, would not be controlled. Yet, this large potential harm resulting from invalidation of the standard is unlikely to materialize, since the precise standard based on the Ringelmann Chart is available as an alternative.

There is some doubt, however, whether the Ringelmann standard would be as effective in controlling smoke. The Ringelmann Chart standard is not as flexible as a standard using reasonableness or necessity as a base. Situations may occur where an individual is emitting smoke which is allowable under the Ringelmann Chart standard, but which is nevertheless unreasonable in the sense that it is resulting in damage to health or property.¹²¹ Conceivably, the vague standard could have been used to prohibit such emissions, and in this respect its probable invalidity would appear to impair effective smoke control. This impairment, however, is likely to be more than counterbalanced by two additional factors. First, the standard founded upon the Ringelmann Chart has been widely accepted apparently because it has proved to prohibit most harmful smoke. Therefore, the instances where the emission of smoke allowable by the Ringelmann Chart standard does cause harm are likely to be few. Second, the standard

¹¹⁹ See *People v. International Steel Corp.*, 102 Cal. App. 2d 935, 226 P.2d 587 (App. Dep't Super. Ct. 1951); *People v. Plywood Mfrs.*, 137 Cal. App. 2d 859, 291 P.2d 587 (App. Dep't Super. Ct. 1955), appeal dismissed, 351 U.S. 929 (1956).

¹²⁰ See p. 730 *supra*.

¹²¹ Such a situation might well occur where the geographic and prevailing wind conditions combine to create an abnormally slow dispersion of the smoke which is emitted, thereby creating a "build-up" of smoke even though there is compliance with the standard.

based upon the Ringelmann Chart appears easier to use than the vague standard, since it eliminates much guesswork by an enforcement agency as to whether an individual is violating the standard. In addition, it appears to be easier to prove a violation of the Ringelmann Chart standard. With the standard prohibiting "unnecessary and unreasonable smoke" extensive time and effort would be required to establish that an emission was "unreasonable and unnecessary." Consequently, there appears to be little foundation for doubts regarding the effectiveness of the Ringelmann Chart for smoke control.

The regulation of the emission of gases is a second area which has received considerable attention. As in the case of smoke, ambiguous standards regulating the emission of gases have been enacted to achieve flexibility.¹²² For example, a typical standard prohibits the emission of "gases . . . in such places or manner as to be detrimental to any person, or to the public by endangering the health, comfort and safety of any person, or of the public or in such manner as to cause injury or damage to property or business . . ."¹²³ Although there are no decisions on the constitutional validity of such standards, it is clear that they would be found unconstitutional unless a court is willing to supply a precise definition or finds it in the public interest to uphold them.

The problem here is somewhat different from that created by the vagueness of the smoke control standards. A court would not find, as in the case of smoke, any generally accepted standard for any particular gas.¹²⁴ Therefore, it probably would not be willing to create a limiting definition and use it to make a gas standard precise.

Since the balancing process is reached, however, the constitutional analysis of smoke control and gas control standards lead to similar results. Certainly, the private harm from the imprecision in the standard is the same whether a gas or smoke control standard is involved. Likewise, the public harm is similar if the standard is invalidated since precise standards could be used for gas control with some loss in flexibility.¹²⁵ As a result, absent a limiting definition, a gas control

¹²² See, e.g., Miami Beach, Fla., Ordinance 1318, Oct. 15, 1958; Baltimore, Md., Ordinance 358, § 7A, April 9, 1956; Birmingham, Mich., Ordinance 450, § 2, April 5, 1954. The ordinances are reprinted in U.S. Dep't of Health, Education and Welfare, Digest of Municipal Air Pollution Ordinances (1962).

¹²³ See, e.g., Birmingham, Mich., Ordinance 450, § 2, April 5, 1954 (U.S. Dep't of Health, Education and Welfare, Digest of Municipal Air Pollution Ordinances 182-83 (1962)).

¹²⁴ The federal government is presently developing air quality criteria for use in setting emission standards. Thus far, air quality criteria have been developed solely for sulfur dioxide. U.S. Dep't of Health, Education, and Welfare, Air Quality Criteria for Sulfur Oxides (1967). Criteria for other important pollutants are also being developed, and they will be ready for publication in the near future. 1967 Hearings 1154.

¹²⁵ There can be no doubt that a precise standard can be set to regulate the emission of most gases. Pennsylvania has adopted air quality criteria for some of the major

standard using terms such as "unnecessary" or "unreasonable" should be found to be unconstitutionally vague.

A final area of air pollution control which has been particularly troublesome is regulation of the emission of odors. Standards created for the control of odors invariably contain ambiguous terms, such as "disagreeable or obnoxious odors." In *Verona v. Shalit*,¹²⁶ the New Jersey Superior Court found this standard unconstitutionally vague, since people are affected differently by smells.¹²⁷

In *Verona*, the court found the standard unconstitutionally vague without reference to the possibility of limiting definitions or to the public interest that would be injured if the standard were struck down. Even if the court had explored the possibility of supplying such a standard with a precise definition it is unlikely that it would have found a precise definition to use. There is no objective standard by which to measure all types of odors.¹²⁸ Any such standard must be subjective. Each specific odor, such as onion smell, may have an objective standard of measurement, but it would be impossible to have one for each type of odor. In essence, terms such as "disagreeable or obnoxious odors" are inherently incapable of being precisely defined.

gases such as sulfur dioxide, nitrogen dioxide, oxidants, hydrogen sulfide and carbon monoxide. Hearings on S. 780 Before the Subcomm. on Air and Water Pollution of the Senate Comm. on Public Works, 90th Cong., 1st Sess., pt. 4, at 2396 (1967). It is then only one short step to set precise emission standards from these criteria. After a standard has been set, samples of emissions may be subjected to laboratory analysis to determine the content of that type gas in the emission. *Id.* at 2397. This is not to suggest, however, that such precise standards may not be subject to constitutional attack upon other grounds to be discussed later in this comment.

¹²⁶ 92 N.J. Super. 65, 222 A.2d 145 (Essex County Ct. 1966).

¹²⁷ The force of *Verona* is somewhat weakened by *Department of Health v. Owens-Corning Fiberglas Corp.*, 36 U.S.L.W. 2679 (N.J. Super. Ct., App. Div., April 17, 1968). In *Owens-Corning*, the court upheld a section of the New Jersey Air Pollution Code which provided: "no person shall cause, suffer, allow or permit to be emitted into the outdoor atmosphere substances in quantities which shall result in air pollution." "Air pollution" is defined in the New Jersey Air Pollution Control Act to include odors of quantities and characteristics as to be likely to be injurious to public welfare, to human, plant or animal life, or to property, or as to be likely unreasonably to interfere with the enjoyment of life and property. See note 7 *supra*. After finding that the Air Pollution Code provision was not overbroad, the court went on to find that the Department of Health could regulate odors under this provision since odors come within the Air Pollution Control Act definition of "air pollution" and were "substances" within the meaning of the Air Pollution Code.

Special circumstances were present in *Owens-Corning*, however, that may make it distinguishable from *Verona*. In *Owens-Corning*, the defendant knew for more than six years that the Department of Health considered its emissions to be in violation of the Code. The defendant attempted, unsuccessfully, to stop or reduce the emissions. These facts led the court to conclude that the defendant could not seriously contend that it was not sufficiently informed of the Code standard. As a result, the case can be read to say that the defendant was not a proper person to allege vagueness, but does not have to be read to say that no one could have shown vagueness sufficient to make the statute unenforceable as to him.

¹²⁸ Bishop, *Air Pollution from Industrial Operations and Its Control*, in *National Conference on Air Pollution Proceedings* 93 (1963).

Nor is a balance of public injury against private injury likely to save the standard. The burden imposed on the individual as a result of upholding a vague odor standard is as substantial as that imposed by a vague gas or smoke standard. Many industries, particularly those which manufacture chemicals, must emit large quantities of odors to make their product. As a result, fear of violation of the standard may cause these industries to curtail or discontinue production. The public interest in upholding the standard, however, is much smaller than that in upholding the smoke or gas standards. Although the presence of "disagreeable or obnoxious odors" many interfere with the use and enjoyment of property and create adverse psychological health effects, these odors will not have any direct physical effects on health or property. Therefore, the magnitude of harm which might result from allowing the unregulated emission of odors is not as large as the harm which might result from allowing the unregulated discharge of some other air contaminant. On the other hand, there appears to be no available precise standard directed specifically at odors which will eliminate their potential harm. An odor, however, does not usually exist as a separate entity, but is often accompanied by some other air contaminant. Therefore, to the extent that the emission of these other air contaminants may be controlled by precise standards, the potential public harm from an odor is reduced.

On balance, it appears that the result in *Verona* was correct—the standard is unconstitutionally vague. A corollary to this conclusion is that all odor standards are bad because it is impossible to find a more objective one. Although it appears that, at least in part, odors will be controlled as a by-product of the control of other air contaminants creating the odors, optimum control of odors will not result.

The scientific data for many air contaminants has been sketchy or inconsistent, and there may not be enough data for analysis and creation of precise standards for these contaminants. Moreover, to the extent that sufficiently precise standards have been promulgated with sketchy or inconsistent data, constitutional problems may arise. Fourteenth amendment due process of law would not be present in the enforcement of a standard in which the prohibitions bear no relation to the interest that is being protected.¹²⁹ A constitutional attack on air pollution control standards upon the ground that there is no such reasonable relation may take two forms. First, a standard may be

¹²⁹ *Nebbia v. New York*, 291 U.S. 502 (1934). It should also be noted that, as with the first due process requirement previously mentioned, this second requirement applies to permits issued in the "permit system" as well as to standards promulgated in the "prohibitory system." Such a result obtains since a permit, by hypothesis, is issued pursuant to a regulating standard.

invalidated if it has no justifiable foundation in fact.¹³⁰ Second, a standard may be invalidated if there exists a less restrictive alternative that will accomplish the same end as the standard in question.¹³¹

An air pollution control standard can be invalidated under the first method only when it can be shown that there is a lack of scientific knowledge to demonstrate a causal relationship between the given standard and the injury to public health, welfare or property.¹³² Even if a standard is enacted with little or no scientific knowledge, however, the defendant's burden of proving this is almost insurmountable. A strong presumption of validity exists in favor of any standard.¹³³ This presumption of validity may be rebutted only by proving beyond a reasonable doubt that the standard has no scientific basis.¹³⁴ In the case of certain air contaminants about which scientific knowledge is still sketchy¹³⁵ it may be possible to rebut the presumption of validity. As a practical matter, however, most standards are not promulgated unless they are based on information which has been published and confirmed either by independent investigators or an air pollution staff.¹³⁶ This information would tend to make the presumption of validity in favor of these standards virtually irrebuttable since it would always raise a reasonable doubt that such standards did, in fact, have a scientific basis.

To illustrate the difficulty of showing that a standard has no basis in fact, one may consider the debate presently taking place over prohibitory standards for sulfur dioxide. The United States Department of Health, Education and Welfare established air quality criteria for sulfur dioxide¹³⁷ after a detailed study of its effects upon health and property. The Department of Health, Education and Welfare reported that sulfur dioxide concentrations above 0.1 parts per million parts of air over a 24-hour period would injure health. From this air quality criterion, sulfur dioxide emission control standards can be enacted to keep the concentration of sulfur dioxide in the air below that specified in the criterion.¹³⁸

¹³⁰ See *Union Carbide & Carbon Corp. v. White River Distribs., Inc.*, 224 Ark. 558, 566, 275 S.W.2d 455, 460 (1955).

¹³¹ This is the principle advanced by Struve, *The Less-Restrictive-Alternative Principle and Economic Due Process*, 80 Harv. L. Rev. 1463 (1967).

¹³² See *Union Carbide & Carbon Corp. v. White River Distribs., Inc.*, 224 Ark. 558, 275 S.W.2d 455 (1955).

¹³³ See *Bibb v. Navajo Freight Lines, Inc.*, 359 U.S. 520, 524 (1959); *People v. Tatje*, 203 Misc. 949, 953, 121 N.Y.S.2d 147, 151 (N.Y. City Magis. Ct. 1953).

¹³⁴ See *People v. Tatje*, 203 Misc. 949, 953, 121 N.Y.S.2d 147, 151 (N.Y. City Magis. Ct. 1953).

¹³⁵ Nitrogen dioxide is an example. See 1967 Hearings 1146-47.

¹³⁶ This is the practice in California. *Maga & Goldsmith, Standards for Air Quality in California*, 10 J. Air Pollution Control Ass'n 453, 454 (1960).

¹³⁷ See 1967 Hearings 1140.

¹³⁸ See U.S. Dep't of Health, Education, and Welfare, *Air Quality Criteria for Sulfur Oxides* iv (1967).

The Department of Health, Education and Welfare's criterion has been subjected to criticism on the basis that there is presently no valid scientific evidence demonstrating the relationship of *any* given quantity of sulfur dioxide to "significant" adverse health and property effects.¹³⁹ The critics believe that much more work needs to be done before an accurate scientific judgment can be made on the effects of sulfur dioxide. As a practical matter, however, the testimony of such critics would be insufficient to show a lack of foundation in fact of a sulfur dioxide standard. The strong presumption in favour of such a standard could never be overcome, since the findings of the Department of Health, Education and Welfare would always leave some reasonable doubt in favor of the scientific basis of the standard.

It is not suggested, however, that this method of constitutional attack will never succeed against air pollution control standards. Standards which have been promulgated without the substantial basis of either a Department of Health, Education and Welfare criterion or another published scientific work relating the emissions to adverse health and property effects are certainly vulnerable. One example is a standard regulating the emission of nitrogen dioxide, a gas for which there is relatively little information concerning its effect upon man.¹⁴⁰

The second method by which a standard may be attacked as having no reasonable relation to the interest protected is through the less-restrictive-alternative principle.¹⁴¹ This method is similar to the first except that it places a burden on the defendant of proving beyond a reasonable doubt that a less restrictive standard accomplishes the same purposes as the challenged standard *equally effectively*.¹⁴² The factual basis of the challenged standard does not have to be attacked directly. The less-restrictive-alternative principle is a good basis of attack where scientific knowledge is present to show the need for some standard. If, in this case, the defendant can show that the underlying scientific evidence does not demonstrate the need for a standard as strict as the one challenged to protect the public health effectively, the challenged standard may be invalidated. Where scientific evidence is lacking, however, the less-restrictive-alternative principle is not a good theory of attack. In such a case, it is difficult to find scientific evidence that will support the proposition that the standard is too strict. Of course, the fact that scientific evidence is lacking may go to a showing of inadequate foundation for the standard and, thus, result in a finding of unconstitutionality.

¹³⁹ Clean Air News, Sept. 6, 1967, at 5-6.

¹⁴⁰ See 1967 Hearings 1146-47.

¹⁴¹ See generally Struve, *supra* note 131.

¹⁴² *Id.* at 1463.

C. *Considerations of Public and Private Interests*

To a certain extent the due process requirements of the fourteenth amendment discussed above compel the administrative agency to balance various interests involved in air pollution control when promulgating and enforcing standards. Yet, the fourteenth amendment can impose only the outer boundaries of fairness. Within these boundaries, the control legislation must still strike a proper balance between the competing interests involved.

In order to understand the attempts of existing statutes to strike a proper balance, it is first necessary to list the interests in air pollution control. These are: (1) the public's need for clean air; (2) the need of industry, which emits air contaminants, to be able to operate efficiently and economically; and (3) the public's need in having industry continue to operate so that it may employ people, produce a particular product, and stimulate the economy. If air pollution control is to strike a proper balance among these competing and conflicting interests, the legislature or administrative agency must take the interests into consideration when promulgating and enforcing standards and also when granting, denying or revoking permits. Although legislators, ideally, strive to be fair to competing interests, complete fairness is not always possible within the confines of the prohibitory or permit system. A great deal of arbitrariness is present because of the practical limitations on the ability of a state or municipality to police and enforce the standards. Two examples will demonstrate this necessary arbitrariness in the standards.

As noted above,¹⁴³ standards based on the Ringelmann Chart are sufficiently precise to withstand constitutional challenge. It is this precision, however, that results in arbitrariness. For example, a typical standard may prohibit the discharge into the air of any smoke which is dark, darker, or as opaque as section 2 of the Ringelmann Smoke Chart for more than three minutes during any one hour.¹⁴⁴ One who emits smoke which is barely a shade below section 2 does not violate the standard even though he discharges smoke 24 hours a day. As a result, the emission of one who complies with the standard may be considerably more harmful to health than the emission of one who does not; yet, as a practical matter, it is difficult to create a standard that takes such a result into account. A sliding scale, juxtaposing darkness or opacity of smoke with the amount of smoke being released each day could be used, but it would necessitate an inspector's spending too much time in observing one emission source in order to detect violations. It would appear that the arbitrariness is a necessary result if administrative impracticability is to be avoided.

¹⁴³ See p. 732 *supra*.

¹⁴⁴ See, e.g., Cal. Health & Safety Code § 24242 (West 1967).

A second example is those standards which prohibit the use of certain fuels¹⁴⁵ or prohibit particular processes, such as incineration.¹⁴⁶ Although the use of these fuels or processes may result in increased air pollution, this is not necessarily the case. The danger from an emission source using these fuels or processes may be minimized by the use of pollution control devices.¹⁴⁷ For one who can obtain control devices and reduce his output so that he does not violate any emission standard, an *input* or *process* prohibition seems unduly harsh. The harshness of the standard, however, may be necessary in view of the cost of promulgating and enforcing a more flexible standard based on the *output* of air contaminants. The money and time which must be expended to investigate and prove violation of an emission standard based on output would appear to be much greater than that needed to investigate and prove violation of a standard based on input.¹⁴⁸ All the inspector need do to detect a violation of an input standard is to observe the products being placed into the industrial process.

Although the practical limitations upon the state and municipality in enforcing standards may necessitate a certain amount of arbitrariness, for the most part, harshness to the various competing parties involved in air pollution control can be somewhat diminished by consideration of the interests of all parties at the different stages of control. Such consideration is written into air pollution statutes in three ways.

The majority of statutes state that before a standard can be adopted, notice must be given and a meeting held in which the public is given an opportunity to be heard.¹⁴⁹ Although this allows all interested parties to express their views on the proposed standard, there is, of course, nothing which compels the body promulgating standards to agree with them or to give any weight to their opinions in deciding whether to enact a standard.

¹⁴⁵ See New York, N.Y., Local Law No. 14, § 1-893-2.0(b), May 20, 1966: "no person shall use bituminous coal in fuel burning equipment for the purpose of providing heat or hot water for any structure or any building . . ." See also subsection (a) of the same section which allows bituminous coal to be used in fuel burning equipment for purposes other than providing heat or hot water if a control apparatus capable of preventing the emission of at least 99% of all solid particulate matter is installed.

¹⁴⁶ See New York, N.Y., Local Law No. 14, § 1-893-3.0, May 20, 1966, which prohibits the use of refuse burning equipment.

¹⁴⁷ An air pollution control device is a piece of equipment which removes or reduces the quantity and quality of air contaminants which are emitted into the atmosphere.

¹⁴⁸ Consider the differences in cost between investigating and proving that harmful amounts of a particular gas or odor are being emitted and investigating and proving that excess amounts of a particular fuel are being used.

¹⁴⁹ See, e.g., N.J. Stat. Ann. § 26:2C-8 (1964), as amended, (Supp. 1967); N.Y. Pub. Health Law § 1276(2) (McKinney Supp. 1967); Va. Code Ann. § 10-17.18(b) (Supp. 1966).

A more formal means of insuring that the competing interests will be considered in promulgating and enforcing standards is to establish a board or commission whose membership consists of various technical and interest groups: industry, the public, government, and the medical and engineering professions.¹⁵⁰ Placing the various interest groups on

¹⁵⁰ See *Ariz. Rev. Stat. Ann.* § 36-1704 (Supp. May 1967) (hearing board to be made up of persons who are "knowledgeable in the field of air pollution"); *Ark. Stat. Ann.* § 36-1903(a) (Supp. 1967) (Arkansas Air and Water Pollution Control Commission made up of persons appointed by the Board of Health, Game and Fish Commission, Oil and Gas Commission, Soil and Water Commission, State Forestry Commission and the Governor (to represent industry, municipalities, and agricultural interests)); *Colo. Rev. Stat. Ann.* § 66-29-7(1) (Supp. 1967) (Variance Board to be made up of a professional engineer, a physician or toxicologist, three representatives of industry, and three representatives of the public); *P.A. 754, § 2, 1967 Conn. Laws* (Conn. Leg. Serv. 1080 (1967)) (Commission to be made up of a physician, a professional engineer, a representative of industry, an electric utility employee, and six representatives of the public); *Ill. Ann. Stat. ch. 111½, § 240.4* (Smith-Hurd 1966) (Control Board to be made up of the Director of Public Health, a professional engineer, a physician, a conservationist, a representative of industry, a representative of labor, a person engaged in municipal government, and two representatives of the public); *Ind. Ann. Stat.* § 35-4603 (Supp. 1967) (Control Board to be made up of the Secretary of the Board of Health, a physician, an engineer, a representative of agriculture, a representative of industry, a representative of municipal government, and a representative of the general public); *H. File 480, § 3(1), 1967 Iowa Acts* (Iowa Leg. Serv. 277 (1967)) (Commission to be made up of the Commissioner of Public Health, a professional engineer, a physician, a representative of industry, a conservationist, a representative of labor, a representative of government, and two representatives of the public); *S. Bill 428, § 4, 1967 Kan. Laws* (Commission to be made up of the state health officer, the Director of the Department of Economic Development, the Director of the Department of Labor, the Secretary of the Board of Agriculture, a representative of industry, a representative of local government, a representative of the public, and one other member); *Ky. Rev. Stat. Ann.* § 224.420(2) (Supp. 1967) (Commission to be made up of the Commissioner of Health, the Commissioner of Commerce, the Attorney General, the Commissioner of Natural Resources, the Commissioner of Agriculture, a representative of the public, three representatives of industry at least one of which is an engineer, an engineering professor, and a representative of a local Control District); *La. Rev. Stat. Ann.* § 40:2203 (1965) (Commission to be made up of the President of the State Board of Health, the Director of the State Board of Commerce and Industry, the Commissioner of Agriculture, a professional engineer, a physician, a representative of industry and a representative of municipal government); *Mich. Stat. Ann.* § 14.58(3) (Supp. 1965) (Commission to be made up of the Commissioner of Health, the Director of Conservation, the Director of Agriculture, two representatives of industry of which one shall be a professional engineer, two representatives of local pollution control bodies, a physician, and a representative of the public); *Miss. Code Ann.* § 7106-113(a) (Supp. 1966) (Air and Water Pollution Control Commission to be made up of the Director of the Division of Sanitary Engineering, the Director of the Game and Fish Commission, the State Water Engineer, the Supervisor of the Oil and Gas Board, the Director of the Plant Board, the Secretary of the Marine Conservation Commission, a representative of municipal government, two representatives of industry, and a conservationist); *Mo. Ann. Stat.* § 203.040 (Supp. 1967) (Commission to be made up of the Director of Health and six others selected as to represent industry, labor, agriculture, municipal or county government, and the public); *Nev. Rev. Stat.* §§ 445.490, .505 (1967) (state control hearing board to be made up of five persons chosen from a group made up of two representatives of the public and eight persons representing agriculture, industry, mining, construction contractors, public utilities, tourism, transportation, and the cities and towns; county and district control hearing boards to be made up of three

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the board encourages examination and representation of different points of view and interests in the policy making and enforcement process.¹⁵¹ Representation on a control board, however, is not a panacea. Since the board members often have full-time jobs outside the board, it may not be possible within the time available to maintain an effective air pollution control program.¹⁵² In addition, there is a chance that placing private interest groups on the board will serve to

to five members, one of which is to be an attorney, and one of which is to be a professional engineer); H. Bill 352, §1-127:80(III), 1967 N.H. Laws (Commission to be made up of three representatives of industry, a representative of municipal government, a physician, a representative of the field of recreation and three representatives of the public); N.Y. Pub. Health Law § 1268(1) (McKinney Supp. 1967) (Board to be made up of the Commissioners of the Departments of Health, Agriculture, Commerce, Conservation and Labor, a physician, a professional engineer, a representative of industry, and a representative of a political subdivision); H. Bill 689, § 1-3704.02, 1967 Ohio Laws (Board to be made up of the Director of Health, the Director of Development, and representatives of municipal government, industry and agriculture); ch. 80, § 2(E), 1967 Okla. Laws (Okla. Sess. Law Serv. 115-16 (1967)) (Council to be made up of a professional engineer, a professor of engineering, and representatives of industry (3), agriculture and municipal government); Pa. Stat. Ann. tit. 35, § 4005 (1964) (Commission to be made up of the Directors of the Departments of Health, Commerce, Labor, Mines and Agriculture, a toxicologist, three representatives of industry of which one shall be a professional engineer, another professional engineer, and a member of the public); S.C. Code Ann. § 70-104 (Supp. 1965) (Authority to be made up of the state health officer and two members of the Board of Health, representatives of the cotton and paper and pulp industries, a conservationist, a representative of municipal government, a farmer, and two representatives of labor); Tenn. Code Ann. § 53-3411 (Supp. 1967) (Board to be made up of the Commissioner of Public Health, a professional engineer, a physician, a conservationist, a manufacturer, a judge, a person engaged in municipal government, and two representatives of industry); Tex. Rev. Civ. Stat. Ann. art. 4477-5, § 3 (Supp. 1967) (Board to be made up of the Commissioner of Health, the Director of the State Industrial Commission, the Director of the Animal Health Commission, a professional engineer, a physician, a representative of industry, a representative of municipal government, and two representatives of the public); Utah Code Ann. § 26-24-4 (Supp. 1967) (Council to be made up of the Director of the Department of Health, a physician, a professional engineer, and representatives of municipal government, agriculture, the mining industry, the fuel industry, manufacturing and the public); Wash. Rev. Code Ann. § 70.94.300 (Supp. 1967) (Board to be made up of the Director of Health, an educator, a representative of the public, a representative of labor, a city official, a member of the Board of County Commissioners, a representative of agriculture, and two representatives of industry); W. Va. Code Ann. § 16-20-4 (Supp. 1967) (Commission to be made up of the State Director of Health, the Commissioner of Agriculture, two representatives of industry, and three representatives of the public); Wyo. Stat. Ann. § 35-490 (Supp. 1967) (Council to be made up of a representative of the Board of Health, the Commissioner of Agriculture, the Chairman of the Land and Water Conservation Commission, a representative of municipal government, three representatives of industry, and two representatives of the public).

¹⁵¹ One widely held view is that in almost all cases the public interest will be successfully realized only if full participation by affected interest groups is allowed and encouraged. See Council of State Governments, *State Air Pollution Control Act*, in 26 *Suggested State Legislation* A-4 (1967).

¹⁵² See Statement by Lewis Green, Chairman of the Missouri Air Conservation Commission: "I am Chairman of this Commission only as a part time hobby." Hearings on S. 780 Before the Subcomm. on Air and Water Pollution of the Senate Comm. on Public Works, 90th Cong., 1st Sess. pt. 2, at 991 (1967).

channel favoritism,¹⁵³ although it is more likely that the need to compromise will be so overriding that any favoritism will not affect the ultimate decisions.¹⁵⁴ These disadvantages have caused some states to turn to a departmental type of organization with full-time officials in charge of promulgating and administering standards.¹⁵⁵ The departmental organization also has the advantage of efficiency and orderly administration, but, of course, the interests affected by air pollution control legislation have no decision-making power. A few states have adopted a compromise between a part-time control board with representation from the interest groups and a full-time control board with no representation. Under these statutes, the State Board of Health¹⁵⁶ is empowered to administer the act, and the Governor is authorized to appoint an Air Pollution Advisory Council comprised of representatives of the various technical and interest groups.¹⁵⁷ The Council, however, can make only recommendations to the Board and advise on standards which are presented to it by the Board. Although the various interests are represented on the Advisory Council, they have no real decision-making power.

It is submitted that a more advantageous type of administrative organization would be a mixed commission comprised of both state air pollution officials and representatives from technical and interest groups. This kind of organization is beneficial because full-time public officials on the Commission are paid to spend their time on air pollution matters, unlike the representatives from various interest groups who hold full-time jobs outside the Commission. At the same time, this kind of organizational structure fulfills the need to balance the competing social and economic interests involved.

A further means of insuring that conflicting interests will be balanced by an administrative agency or board is to make consideration of the interests mandatory either when the agency is promulgating

¹⁵³ The National Association of Counties, in a Community Action Guide for Air Pollution Control, has stated that representatives of industry should not be allowed to sit on decision-making bodies because of their vested interests. See 1967 Hearings 1378.

¹⁵⁴ For a discussion of the arguments pro and con, see W. Boyer, *Bureaucracy on Trial* (1964).

¹⁵⁵ See Ga. Code Ann. §§ 88-903, -904 (Supp. 1967); Hawaii Rev. Laws § 47-62 (Supp. 1965); Mass. Gen. Laws Ann. ch. 111, § 142A (1958), as amended, (Supp. 1966); N.M. Stat. Ann. § 12-14-5 (Supp. 1967).

¹⁵⁶ It has been customary practice to assign air pollution control responsibilities to the Health Department rather than to any other unit of state government. See Council of State Governments, *State Air Pollution Control Act*, in 26 *Suggested State Legislation A-5* (1967).

¹⁵⁷ See Ariz. Rev. Stat. Ann. § 36-1703 (Supp. May 1967); Cal. Health & Safety Code § 24356 (West 1967) (Bay Area Control Act); ch. 1545, § 5-39022, 1967 Cal. Laws (Cal. Leg. Serv. 2767 (1967)) (Mulford-Carrell Air Resources Act); Md. Ann. Code art. 43, § 695 (Supp. 1967); Mont. Rev. Codes Ann. § 69-3908 (Supp. 1967); N.J. Stat. Ann. § 26:2C-3.2 (Supp. 1967); R.I. Gen. Laws Ann. § 23-25-4(b) (Supp. 1966); ch. 83, § 6-144.37, 1967 Wis. Laws.

standards, when it is enforcing them, or at both times.¹⁵⁸ At the enforcement stage, the agency may consider the interests when it decides whether to issue an order against one who is violating the standard,

¹⁵⁸ All of the state air pollution statutes or administrative procedures acts have provisions for judicial review of an administrative rule, order or variance. Any person aggrieved by the administrative action has a right to judicial review and the scope of this review is usually set forth clearly in the statute.

Many states provide for judicial review to determine if the administrative order is erroneous in law, arbitrary, capricious, an abuse of discretion, clearly erroneous or the like. See Colo. Rev. Stat. Ann. § 66-29-13 (Supp. 1967) (refers to Colo. Rev. Stat. Ann. § 3-16-5(7) (1963) which sets out rules for judicial review); P.A. 754, § 13, 1967 Conn. Laws (Conn. Leg. Serv. 1082-83 (1967)) (scope of review has been established by judicial decision. See *Jaffe v. Department of Health*, 135 Conn. 339, 64 A.2d 330 (1949)); H. Bill 352, § 1-125:82, 1967 N.H. Laws (refers to N.H. Rev. Stat. Ann. § 541:13 (1955) which defines the scope of review); N.M. Stat. Ann. § 12-14-7 (Supp. 1967) (applies only to rules and regulations); W. Va. Code Ann. § 16-20-7 (1966) (scope of review set out in Administrative Procedures Act, W. Va. Code Ann. § 29A-5-4(g) (1966)).

Some states provide for a trial de novo to review any decisions of the administrative agency. See Ark. Stat. Ann. §§ 82-1906(7), -1906(9) (Supp. 1967) (administrative finding is prima facie valid); Cal. Health & Safety Code § 24323 (West 1967) (Air Pollution Control District Act); Del. Code Ann. tit. 7, § 6012(e) (Supp. 1966) (unclear, but specifies that the superior court shall hear and determine the matter as a suit in law and equity); Ga. Code Ann. § 88-915 (Supp. 1967) (refers to Ga. Code Ann. § 88-305(a) (Supp. 1967) which deals with judicial review); Hawaii Rev. Laws § 47-73 (Supp. 1965); Idaho Code Ann. § 39-2920(4) (Supp. 1967); H. File 480, § 10, 1967 Iowa Acts. (Iowa Leg. Serv. 282 (1967)); Ky. Rev. Stat. Ann. § 77.305(2) (1963) (Air Pollution Control District Act); La. Rev. Stat. Ann. § 40:2213 (1965); Mich. Stat. Ann. § 14.58(13) (Supp. 1965); Nev. Rev. Stat. § 445.575 (1967); N.M. Stat. Ann. § 12-14-11 (Supp. 1967) (applies only to enforcement); N.C. Gen. Stat. § 143-215.5 (Supp. 1967); H. Bill 689, § 1-3704.06, 1967 Ohio Laws; R.I. Gen. Laws Ann. § 23-25-10 (Supp. 1966); Tex. Rev. Civ. Stat. Ann. art. 4477-5, § 11 (Supp. 1967); Va. Code Ann. § 10-17.27 (Supp. 1966); ch. 238, §§ 36, 48(3), 1967 Wash. Laws (Wash. Leg. Serv. 582, 585 (1967)). Even though a statute may expressly provide for review through a trial de novo, some courts refuse to exercise this independent judgment because they feel it is a usurpation of the administrative function. See *Peck, The Scope of Judicial Review of Administrative Action in Washington*, 38 Wash. L. Rev. 55, 56-61 (1958). Other courts follow the literal meaning of the statutes, especially where the court decides that the administrative agency has exercised a judicial function. See *Commonwealth v. Emerick*, 373 Pa. 388, 96 A.2d 370 (1953).

Some states provide for review to determine if the administrative order is supported by substantial evidence. See Ariz. Rev. Stat. Ann. § 36-1716 (Supp. May 1967) (scope of review has been established by Ariz. Rev. Stat. Ann. § 12-910 (1956) and by judicial decision. See cases collected in *Davis, An Administrative Procedure Act for Arizona*, 2 Ariz. L. Rev. 17, 35-36 (1966)); Cal. Health & Safety Code § 24368.4 (West 1967) (Bay Area Control Act, refers to Cal. Civ. Code § 1094.5 (West 1955) which established substantial evidence rule); ch. 1545, § 5-39506, 1967 Cal. Laws (Cal. Leg. Serv. 2785-86 (1967)) (Mulford-Carrell Air Resources Act); ch. 67-436, § 18, 1967 Fla. Laws (Fla. Sess. Law Serv. 938 (1967)) (scope of review of administrative orders has been set by judicial decisions. See *Degroot v. Sheffield*, 95 So. 2d 912 (Fla. 1957)); Ind. Ann. Stat. § 35-4606 (Supp. 1967) (refers to Ind. Ann. Stat. § 63-3018 (1961) which defines the scope of review); S. Bill 428, § 14(c), 1967 Kan. Laws (scope of review has been established by judicial decision. See *Timmons v. McGaughey*, 193 Kan. 171, 392 P.2d 835 (1964)); Md. Ann. Code art. 43, § 700 (Supp. 1967) (refers to Md. Ann. Code art. 41, § 255 (1965) where the scope of review is set out); Mo. Ann. Stat. § 203.130 (Supp. 1967) (refers to Mo. Ann. Stat. § 536.140(2) (Supp. 1967) which defines the scope of review); Mont. Rev. Codes Ann. § 69-3917(4)(c) (Supp. 1967); N.J. Stat. Ann. § 26:2C-20

or whether to grant a variance from the standard, or both. Although the legislatures of most of the states recognize the need to consider interests at some stage in the control process, the statutes differ as to when the agency must consider the interests.¹⁵⁹ They also differ as to

(1964), as amended, (Supp. 1967) (scope of review has been established by judicial decision. See *Thomas v. Board of Educ.*, 89 N.J. Super. 327, 215 A.2d 35 (Super. Ct. 1965)); N.Y. Pub. Health Law § 1283(1) (McKinney Supp. 1967) (refers to N.Y. Civ. Prac. Law § 7803(4) (McKinney 1963) which defines the scope of review); ch. 80, § 2(I)(g), 1967 Okla. Laws (Okla. Sess. Law. Serv. 119 (1967)) (scope of review has been established by judicial decision. See *In re White*, 355 P.2d 404 (Okla. 1960)); Ore. Rev. Stat. § 449.805 (1965) (scope of review has been established by Ore. Rev. Stat. § 183.480 (1965) and by judicial decision. See *Bay v. State Bd. of Educ.*, 233 Ore. 601, 378 P.2d 558 (1963)); Pa. Stat. Ann. tit. 35, § 4005(g) (1964) (refers to Pa. Stat. Ann. tit. 71, § 1710.44 (1962) where the scope of review is defined); Tenn. Code Ann. § 53-3417 (Supp. 1967) (scope of review has been established by judicial decision. See *Pace v. Garbage Disposal Dist.*, 390 S.W.2d 461 (Tenn. Ct. App. 1965)); Utah Code Ann. § 26-24-12 (Supp. 1967); Wis. Stat. Ann. § 227.20 (1957) (Administrative Procedure Act); Wyo. Stat. Ann. §§ 35-497(e), -498 (Supp. 1967) (refers to Wyo. Stat. Ann. § 9-276.32 (Supp. 1967) which sets out the scope of review).

Some states provide for judicial review in which the agency determination is deemed *prima facie* true. See Ill. Ann. Stat. ch. 111½, § 240.13 (Smith-Hurd 1966) (refers to Ill. Ann. Stat. ch. 110, § 274 (Smith-Hurd 1956); also requires that review be based only on the evidence before the agency); Ky. Rev. Stat. Ann. § 224.460(2) (Supp. 1967) (Control Act); S.C. Code Ann. § 70-130 (1962).

One state provides for judicial review to determine if there has been prejudicial error. See Miss. Code Ann. § 7106-128 (Supp. 1966).

¹⁵⁹ See Ariz. Rev. Stat. Ann. § 36-1712 (Supp. May 1967) (variance proceedings); Ark. Stat. Ann. §§ 82-1936, -1939 (Supp. 1967) (promulgation of rules, enforcement, variance proceedings); Cal. Health & Safety Code §§ 24296-97 (West 1967) (Air Pollution Control District Act—variance proceedings); Cal. Health & Safety Code § 24365.5 (West 1967) (Bay Area Control Act—variance proceedings); ch. 1545, § 5-39475, 1967 Cal. Laws (Cal. Leg. Serv. 2783 (1967)) (Mulford-Carrell Air Resources Act—variance proceedings); H. Bill 1024, § 11, 1966 Colo. Laws (U.S. Dep't of Health, Education & Welfare, Digest of State Air Pollution Laws 49-50 (1966)) (variance proceedings); P.A. 754, §§ 5, 14(a), 1967 Conn. Laws (Conn. Leg. Serv. 1080-81, 1083 (1967)) (promulgation of rules, enforcement, variance proceedings); ch. 67-436, § 21, 1967 Fla. Laws (Fla. Sess. Law Serv. 940 (1967)) (variance proceedings); Ga. Code Ann. §§ 88-906, -912 (Supp. 1967) (promulgation of rules, enforcement, variance proceedings); Idaho Code Ann. § 39-2909 (Supp. 1967) (promulgation of rules, enforcement); Ill. Ann. Stat. ch. 111½, §§ 240.5-1.4, -1.11 (Smith-Hurd 1966) (enforcement, variance proceedings); Ind. Ann. Stat. § 35-4604(A)(2) (Supp. 1967) (enforcement); H. File 480, §§ 4(8)(a), 13(1), 1967 Iowa Acts (Iowa Leg. Serv. 279, 282 (1967)) (enforcement, variance proceedings); S. Bill 428, § 13(a), 1967 Kan. Laws (variance proceedings); Ky. Rev. Stat. Ann. § 77.260 (1963) (Air Pollution Control District Act—variance proceedings); Ky. Rev. Stat. Ann. §§ 224.340, .410 (Supp. 1967) (Control Act—promulgation of rules, variance proceedings); La. Rev. Stat. Ann. §§ 40:2204(A)(5)(ii), :2211 (1965) (enforcement, variance proceedings); Md. Ann. Code art. 43, § 697(c) (Supp. 1967) (promulgation of rules); Mich. Stat. Ann. §§ 14.58(19), (20), (21) (Supp. 1965) (variance proceedings); Mo. Ann. Stat. § 203.110 (Supp. 1967) (variance proceedings); Mont. Rev. Codes Ann. § 69-3916 (Supp. 1967) (variance proceedings); Nev. Rev. Stat. § 445.525 (1967) (promulgation of rules); H. Bill 352, § 1-125:83, 1967 N.H. Laws (variance proceedings); N.M. Stat. Ann. §§ 12-14-5(B)(1), -8, -11(E) (Supp. 1967) (promulgation of rules, enforcement, variance proceedings); N.Y. Pub. Health Law § 1282(3) (McKinney Supp. 1967) (enforcement); N.C. Gen. Stat. § 143-215.2(b) (Supp. 1967) (enforcement); H. Bill 689, §§ 1-3704.03(E), .03(F), .06, 1967 Ohio Laws (promulgation of rules, enforcement, variance proceedings); ch. 80, §§ 2(I)(d), (J)(b), 1967 Okla. Laws (Okla. Sess. Law Serv. 118, 119 (1967)) (enforcement, variance proceedings); Ore. Rev. Stat.

what interests should be considered.¹⁶⁰ Where variance proceedings are used, they differ as to whether the grant of a variance should be

§§ 449.785, .810 (1965) (promulgation of rules, variance proceedings); R.I. Gen. Laws Ann. §§ 23-25-5(h), -15 (Supp. 1966) (enforcement, variance proceedings); S.C. Code Ann. §§ 70-123.1(A)(4)(ii), -123.3 (Supp. 1965) (enforcement, variance proceedings); Tenn. Code Ann. § 53-3413 (Supp. 1967) (promulgation of rules, enforcement, variance proceedings); Tex. Rev. Civ. Stat. Ann. art. 4477-5; §§ 4(5)(b), 9(A) (Supp. 1967) (enforcement, variance proceedings); Utah Code Ann. § 26-24-5(7) (Supp. 1967) (variance proceedings); Va. Code Ann. § 10-17.18(e) (Supp. 1966) (promulgation of rules, enforcement); ch. 238, § 31, 1967 Wash. Laws (Wash. Leg. Serv. 579-80 (1967)) (variance proceedings); Wyo. Stat. Ann. §§ 35-494(b), -497 (Supp. 1967) (promulgation of rules, variance proceedings).

¹⁶⁰ See Ariz. Rev. Stat. Ann. § 36-1712 (Supp. May 1967) (variance—Hearing Board must weigh the advantages and disadvantages of forcing compliance to the public and to the business involved. If enforcement will result in arbitrary and unreasonable taking of property or practical closing and elimination of a business without corresponding benefit, other requirements are set); Ark. Stat. Ann. §§ 82-1936, -1939 (Supp. 1967) (promulgation of rules—quantity, characteristics and duration of contaminants; physical condition; prevailing wind direction and velocity; atmospheric conditions; chemical effect of contaminants in the atmosphere; character of development of area of state; availability and economic feasibility of air cleaning devices; health effects of particular contaminants; property damage possible from particular contaminants; effect on comfort and conduct of business from contaminants; volume of air contaminants emitted from a particular class of source; economic development of state; social and economic value of air contaminant source; the maintenance of the enjoyment of the state's natural resources; and others. Enforcement—same. Variance—harshness of requiring strict compliance, including consideration of whether substantial curtailment or closing of a business will result and whether an alternative facility or method of handling is available); Cal. Health & Safety Code §§ 24296, 24297, 24365.5 (West 1967) (Control District Act and Bay Area Control Act; variance—Board to determine if enforcement will result in arbitrary and unreasonable taking of property or practical closing and elimination of a business without sufficient public benefit); ch. 1545, § 5-39475, 1967 Cal. Laws (Cal. Leg. Serv. 2783 (1967)) (Mulford-Carrell Air Resources Act; variance—same as Control District and Bay Area Control Acts); H. Bill 1024, § 11(2), 1966 Colo. Laws (U.S. Dep't of Health, Education & Welfare, Digest of State Air Pollution Laws 50 (1966)) (variance—Board to determine if enforcement will result in arbitrary and unreasonable taking of property or in the practical closing of a business without sufficient public benefit); P.A. 754, §§ 5, 14(a), 1967 Conn. Laws (Conn. Leg. Serv. 1080-81, 1083 (1967)) (promulgation of rules—character and degree of interference with safety, health or use of property that is caused or threatened, the social and economic value of the activity involved, the suitability of activity to area in which it is located, and the practicability of reducing the discharge; enforcement—same; variance—Commission to determine that discharges are not a danger to health, and compliance would produce practical difficulty or hardship without sufficient public benefit); ch. 67-436, § 21, 1967 Fla. Laws (Fla. Sess. Law Serv. 940 (1967)) (variance—Commission to determine that (a) there is no means of compliance, or (b) compliance will take a long time, or (c) hardship will result from compliance); Ga. Code Ann. §§ 88-906, -912 (Supp. 1967) (promulgation of rules—the quantity, characteristics and duration of air contaminants, the physical conditions, the prevailing wind directions and velocities, atmospheric conditions, chemical effect of contaminants, predominant character of development in the area, the priority of location in the area, availability and feasibility of air cleaning devices, effect of contaminants on health, extent of danger to property to be expected, effect on comfort and conduct of business from contaminants, volume of air contaminants from a class of sources, the economic development in the state, the social and economic value of the source, the maintenance of the enjoyment of the state's natural resources, and others; enforcement—same; variance—Department to determine if requiring compliance will be harsh or inappropriate because of factors beyond control of

polluter, or if compliance will result in curtailment or closing down of business, Board must weigh the effect on health in this determination); Idaho Code Ann. § 39-2909 (Supp. 1967) (promulgation of rules—the character and degree of injury to safety, health or use of property caused or threatened, the social and economic value of activity involved, suitability of activity to area, the practicability of reducing the discharge, and generally the advantages and disadvantages of requiring compliance; enforcement—same); Ill. Ann. Stat. ch. 111½, §§ 240.5-1.4, -1.11 (Smith-Hurd 1966) (enforcement—character and degree of injury to health, general welfare and property, the social and economic value of the source, the suitability of the source to the area, the practicability of reducing the emissions; variance—Board to determine if compliance will result in arbitrary or unreasonable taking of property or in practical closing and elimination of a business without sufficient public benefit); Ind. Ann. Stat. § 35-4604(A)(2) (Supp. 1967) (enforcement—character and degree of injury to comfort, safety, health or use of property, social and economic value of activity, the practicability of reducing the emissions); H. File 480, §§ 4(8)(a), 13(1), 1967 Iowa Acts (Iowa Leg. Serv. 279, 282 (1967)) (enforcement—character and degree of injury to health and property, the practicability of reducing emissions, the suitability of the source to the area; variance—Commission to determine that the emissions do not endanger or tend to endanger human health, safety or property, and compliance will produce serious hardship without a sufficient public benefit); S. Bill 428, § 13(a), 1967 Kan. Laws (variance—Commission to determine that the emissions do not endanger human health or safety and compliance would produce serious hardship); Ky. Rev. Stat. Ann. §§ 224.340, .410 (Supp. 1967) (Control Act; promulgation of rules—physical conditions, public benefit, area of the state involved, relation between intensity of pollution and public health and damage to property; variance—Commission to determine that the discharges do not constitute a danger to public health or safety, and compliance would produce serious hardship without sufficient public benefit); Ky. Rev. Stat. Ann. § 77.260(1) (1963) (Control District Act; variance—Board to determine if requirement of compliance would result in an arbitrary and unreasonable taking of property or in the practical closing of a business without a sufficient public benefit); La. Rev. Stat. Ann. §§ 40:2204(A)(5)(ii), :2211 (1965) (enforcement—character and degree of injury to health and property, the social and economic value of the source, priority of location in the area, the practicability of reducing the emissions; variance—Commission to determine if requiring compliance will result in an arbitrary and unreasonable taking of property or in the practical closing of a business without sufficient public benefit); Md. Ann. Code art. 43, § 697(c) (Supp. 1967) (promulgation of rules—nature of area affected, zoning, nature and source of pollution, the problems of business that may be affected by the rule, environmental conditions, and population and topography); Mich. Stat. Ann. §§ 14.58(19), (20), (21) (Supp. 1965) (variance—Commission to determine if requiring compliance would be inequitable or create undue hardship, or the hardship would be out of proportion to the benefit); Mo. Ann. Stat. § 203.110 (Supp. 1967) (variance—Commission to determine if requiring compliance will result in an arbitrary and unreasonable taking of property or in the closing of a business without sufficient public benefit and without creating a continuing health hazard); Mont. Rev. Codes Ann. § 69-3916(1) (Supp. 1967) (variance—Board to determine that emissions do not constitute a danger to public health or safety, and compliance would produce hardship without equal public benefit); Nev. Rev. Stat. § 445.525 (1967) (promulgation of rules—character and degree of injury to health, property or conduct of business, social and economic value of the source, practicability and reasonableness of reducing or eliminating contaminants, location of the source, population density at the source, atmospheric conditions at the source, relation of emissions to conditions in the area, the cost of control equipment and efforts previously made to reduce emissions); H. Bill 352, § 1-125:83, 1967 N.H. Laws (variance—progress of polluter in eliminating pollution, character and degree of injury to health and property, the social and economic value of source; ultimate determination whether enforcement would produce serious economic hardship without equal public benefit); N.M. Stat. Ann. §§ 12-14-5(B)(1), -8, -11(E) (Supp. 1967) (promulgation of rules—character and degree of injury to health, welfare and property, the public interest, including social and economic value of source, practicability of reducing contaminants with control equipment; enforcement—injury to

human, plant, and animal life or property, interference with the use of property, practicability of compliance; variance—Board to determine that requiring compliance will result in an arbitrary and unreasonable taking of property or will impose an undue burden on business and granting variance will not result in injury to health or safety); N.Y. Pub. Health Law § 1282(3) (McKinney Supp. 1967) (enforcement—in fashioning remedy, Board to determine if compliance would be impossible or impracticable either because no means is available or because of financial inability to comply); N.C. Gen. Stat. § 143-215.2 (Supp. 1967) (enforcement—feasibility of compliance with standard); H. Bill 689, §§ 1-3704.03(E), .03(F), .06, 1967 Ohio Laws (promulgation of rules—conditions that will result from compliance and the benefit to the public from compliance, quantity and characteristics of contaminants, topography and prevailing winds; enforcement—physical and economic feasibility of compliance; variance—Board to determine if compliance is impractical, compliance is not feasible or unreasonable, and emissions have little effect on health); ch. 80, §§ 2(I)(d), (J)(b), 1967 Okla. Laws (Okla. Sess. Law Serv. 118, 119 (1967)) (enforcement—character and degree of injury to health, welfare and property, social and economic value of the source, suitability of the source to the locality, priority of location in the area, practicability and reasonableness of reducing the emissions, the quantity or characteristics of air contaminants; variance—Council to determine that requiring compliance will result in arbitrary and unreasonable taking of property or practical closing of a business without sufficient public benefit; Ore. Rev. Stat. §§ 449.785, .810 (1965) (promulgation of rules—the quantity, characteristics and duration of air contaminants in the area, existing physical conditions, including winds, topography, atmospheric conditions, and possible chemical reactions, predominant character of development of the area, availability and feasibility of air cleaning devices, effect on health, property and comfort of particular air contaminants, volume of contaminants emitted, economic and industrial development of the state, others; variance—Authority to determine if compliance is inappropriate due to conditions beyond the control of the polluter or because of special circumstances that make compliance burdensome or because compliance will result in curtailment or closing of a business or because no alternative facility is available); R.I. Gen. Laws Ann. §§ 23-25-5(h), -15 (Supp. 1966) (enforcement—population density, air pollution levels, character and degree of injury to health or property, economic and social necessity of source; variance—Director to determine if requiring compliance would produce undue hardship without a sufficient public benefit, no person may obtain a variance if he is creating a danger to public health or safety); S.C. Code Ann. §§ 70-123.1(A)(4)(ii), -123.3 (Supp. 1965) (enforcement—character and degree of injury to health and property, social and economic value of the source, priority of location in the area, the practicability and reasonableness of reducing the emissions; variance—Authority to determine if requiring compliance will result in an arbitrary and unreasonable taking of property or in closing and elimination of a business without sufficient public benefit); Tenn. Code Ann. § 53-3413 (Supp. 1967) (promulgation of rules—character and degree of injury to health, welfare and property, the social and economic value of the source, the suitability of the source to its location, the practicability and reasonableness of reducing the emission of contaminants; enforcement—same; variance—same); Tex. Rev. Civ. Stat. Ann. art. 4477-5, §§ 4(5)(b), 9 (Supp. 1967) (enforcement—character and degree of injury to health and property, social and economic value of the source, priority of location in the area, practicability and reasonableness of reducing the emissions; variance—Board to determine if requiring compliance will result in an unreasonable and arbitrary taking of property or the closing and elimination of a business without sufficient public benefit); Utah Code Ann. § 26-24-5(7) (Supp. 1967) (variance—Council to determine if requiring compliance will result in an arbitrary and unreasonable taking of property or closing of a business without sufficient public benefit); Va. Code Ann. § 10-17.18(e) (Supp. 1966) (promulgation of rules—character and degree of injury to safety, health and property, social and economic value of the source, suitability of the activity to its location, the practicability of reducing the discharge; enforcement—same); ch. 238, § 31, 1967 Wash. Laws (Wash. Leg. Serv. 579-80 (1967)) (variance—Board to determine that the emission, occurring or proposed, will not endanger public health or safety and that compliance would produce serious hardship without sufficient public benefit; Board must weigh relative interests of the applicant, owners of property affected

discretionary or mandatory on the consideration of certain interests or on the finding of certain facts.¹⁶¹

The majority of the statutes which set forth factors to be considered by the agency in promulgating standards simply list the variables which help determine the amount of air pollution in a particular area of the state.¹⁶² Because the same amount of air contaminants in two different areas of the state may produce varying degrees of air pollution, the stringency of an emission standard must depend on the topography, the climate, the direction and velocity of prevailing winds, the zoning classifications, and other pertinent factors in each area. As a result, the factors considered by the agency at this stage insure that the standards are created commensurate with the threat of health or property damage in an area.

The competing interests in air pollution control are given the most consideration at the enforcement level. In deciding whether to issue an order against one who has violated an emission standard or permit, the agency is instructed by many of the statutes to determine the reasonableness of the defendant's emissions by considering a

by discharge and the public); Wyo. Stat. Ann. §§ 35-494(b), -497 (Supp. 1967) (promulgation of rules—the character and degree of injury to health and property of the public and the flora and fauna of the state, the social and economic value of the source, the priority of location in the area, the practicability and the reasonableness of reducing the emissions; variance—Council to determine that the emissions do not endanger or tend to endanger human health or safety and that compliance would produce serious hardship without sufficient public benefit).

¹⁶¹ See Ariz. Rev. Stat. Ann. § 36-1712 (Supp. May 1967) (mandatory); Ark. Stat. Ann. § 82-1939 (Supp. 1967) (permissive); Cal. Health & Safety Code §§ 24296, 24365.5 (West 1967) (Control District Act and Bay Area Control Act—mandatory); ch. 1545, § 5-39475, 1967 Cal. Laws (Cal. Leg. Serv. 2783 (1967)) (Mulford-Carrell Air Resources Act—mandatory); H. Bill 1024, § 11, 1966 Colo. Laws (U.S. Dep't of Health, Education & Welfare, Digest of State Air Pollution Laws 49-50 (1966)) (permissive); P.A. 754, § 14(a), 1967 Conn. Laws (Conn. Leg. Serv. 1083 (1967)) (permissive); ch. 67-436, § 21, 1967 Fla. Laws (Fla. Sess. Law Serv. 940 (1967)) (permissive); Ga. Code Ann. § 88-912 (Supp. 1967) (permissive); Ill. Ann. Stat. ch. 111½, § 240.11 (Smith-Hurd 1966) (permissive); H. File 480, § 13, 1967 Iowa Acts (Iowa Leg. Serv. 282 (1967)) (permissive); S. Bill 428, § 13(a), 1967 Kan. Laws (mandatory); Ky. Rev. Stat. Ann. § 224.410 (Supp. 1967) (Control Act; permissive); Ky. Rev. Stat. Ann. § 77.260(1) (1963) (Control District Act—mandatory); La. Rev. Stat. Ann. § 40:2211 (1965) (permissive); Md. Ann. Code art. 43, § 698(b) (Supp. 1967) (permissive); Mich. Stat. Ann. §§ 14.58(19), (20), (21) (Supp. 1965) (generally permissive, but mandatory on finding that hardship is out of proportion to benefits); Mo. Ann. Stat. § 203.110(1) (Supp. 1967) (permissive); Mont. Rev. Codes Ann. § 69-3916(1) (Supp. 1967) (permissive); Nev. Rev. Stat. § 445.545(1)(b) (1967) (permissive); H. Bill 352, § 1-125:83, 1967 N.H. Laws (permissive); N.M. Stat. Ann. § 12-14-8(A) (Supp. 1967) (permissive); H. Bill 689, § 1-3704.03-(F), 1967 Ohio Laws (permissive); ch. 80, § 2(J)(b), 1967 Okla. Laws (Okla. Sess. Law Serv. 119 (1967)) (permissive); Ore. Rev. Stat. § 449.810 (1965) (permissive); R.I. Gen. Laws Ann. § 23-25-15(a) (Supp. 1966) (permissive); S.C. Code Ann. § 70-123.3(a) (1962) (permissive); Tenn. Code Ann. § 53-3415(c) (Supp. 1967) (permissive); Tex. Rev. Civ. Stat. Ann. art. 4477-5, § 9(A) (Supp. 1967) (permissive); Utah Code Ann. § 26-24-5(7) (Supp. 1967) (permissive); ch. 238, § 31(1), 1967 Wash. Laws (Wash. Leg. Serv. 579 (1967)) (permissive); Wyo. Stat. Ann. § 35-497(a) (Supp. 1967) (permissive).

¹⁶² See, e.g., Del. Code Ann. tit. 7, § 6203(b) (Supp. 1966).

number of factors. Although the number and exact wording of the factors may differ from state to state,¹⁶³ most of the statutes borrow heavily from nuisance law. As a result, the four factors considered in nuisance law—(1) the type of injury or interference with safety, health, or use of property which is caused or threatened; (2) the social and economic value of the activity involved; (3) the suitability of the activity to its location; and (4) the scientific and economic practicability of reducing or eliminating the discharge resulting from the activity—are representative of those used in the statutes and may be used for purposes of analysis.¹⁶⁴ The first factor—the type of injury or interference caused or threatened—is a complex one. In assessing this factor, the agency should consider the character and extent of the harm involved. The character of the harm may be damage to land, crops, livestock, or buildings, injury to health, or simply personal discomfort or annoyance. Since the emission of air contaminants may have varied effects on individuals, ranging from slight inconvenience to major respiratory diseases,¹⁶⁵ the degree of interference should be considered in determining the extent of the harm. Because the extent of the harm increases as the interference grows in duration, the agency should also ascertain whether the emissions occur periodically or continually.

Although this factor is, on its face, identical to that used in nuisance law,¹⁶⁶ it is important to recognize one difference. In nuisance law, the gravity of the harm is looked at in terms of the normal man with ordinary sensibilities,¹⁶⁷ whereas, in most states, the model of comparison in promulgating and enforcing an air pollution standard is the most susceptible man in the community.¹⁶⁸ Consequently, an emission source using the most modern air pollution control devices and, therefore, emitting only a small quantity of smoke each day, may be deemed to be causing grave harm even though the man with normal sensibilities is not affected by the smoke.

The second factor for the agency to consider in determining the reasonableness of the defendant's emission—the social and economic value of the activity involved—pertains to the utility of the defendant's business. Under this factor the agency should assess the weight of the public's interest in having the defendant continue to operate his busi-

¹⁶³ See note 160 *supra*.

¹⁶⁴ See *Clinic & Hospital, Inc. v. McConnell*, 236 S.W.2d 384, 391 (Mo. Ct. App. 1951); Restatement of Torts §§ 827, 828 (1939).

¹⁶⁵ See Rheingold, Civil Cause of Action for Lung Damage Due to Pollution of Urban Atmosphere, 33 Brooklyn L. Rev. 17, 21-24 (1966).

¹⁶⁶ See Restatement of Torts § 827 (1939).

¹⁶⁷ See *Beckman v. Marshall*, 85 So. 2d 552, 555 (Fla. 1956); Restatement of Torts § 827, Comment *d*.

¹⁶⁸ 1967 Hearings 1578. See also S. Edelman, The Law of Federal Air Pollution Control, Paper presented at 59th Annual Meeting of the Air Pollution Control Association 9-10 (1966).

ness so that it will produce its product and provide employment.¹⁶⁹ In assessing this interest, the number of people employed should be considered in determining the economic value of the activity, and the benefit that society derives from the type of product that is being produced should be considered in determining the activity's social value. The agency, however, must be careful not to overemphasize the economic and social value of the activity involved in determining the reasonableness of defendant's emissions because those industries which are often accused of causing or contributing the most to air pollution are those which employ millions, produce necessary products, and contribute greatly to the economic well being of our country.¹⁷⁰

The suitability of the defendant's activity to its location is the third factor listed for the agency's consideration. The suitability of a particular activity to a locality is dependent on its compatibility with the predominant activities in that locality.¹⁷¹ Zoning ordinances can play a large role in an agency's determination of this question. This factor has been included in nuisance law because the courts have realized that public policy demands people to carry on business in suitable places so as to avoid as much conflict as possible between incompatible interests. Also the courts recognize that the activity can often be conducted elsewhere with less harm resulting to the individuals who live nearby.¹⁷²

Air pollution, however, does not lend itself to such a simplistic remedy. It is true that individuals who live near an emission source would be affected by air pollution to a lesser extent if all emission sources were located in one industrial area far away from their homes. But by placing all emission sources in one location, severe harm would most likely be caused to the many individuals who work in that particular location.¹⁷³ Suitability of the activity to its location may be of small consequence to the ultimate harm caused to the public, inasmuch as air contaminants may cause harm far from their source.¹⁷⁴ Moreover, the general air mass over an urban area will, for the most part, remain the same regardless of where the emission sources are located.¹⁷⁵

¹⁶⁹ Cf. *Gronn v. Rogers Constr., Inc.*, 221 Ore. 226, 350 P.2d 1086 (1960).

¹⁷⁰ See U.S. Dep't of Health, Education and Welfare, *The Federal Air Pollution Program* 5 (1966); Rheingold, *supra* note 165, at 19.

¹⁷¹ See Restatement of Torts § 828, Comment f (1939).

¹⁷² See *id.*

¹⁷³ See L. Herber, *Crisis in Our Cities* 56-57 (1965).

¹⁷⁴ Air contaminants originating in Texas and Oklahoma were identified in Cincinnati over 1000 miles away. Forests in the Great Smokies are being damaged by pollutants emitted from TVA installations in Knoxville and Chattanooga. U.S. Dep't of Health, Education, and Welfare, *Technological Change as It Relates to Air Pollution*, in 5 *Technology and the American Economy* V-136 (1966). See also Gruber, *The Role to be Played by Local and State Government*, in *National Conference on Air Pollution Proceedings* 322 (U.S. Dep't of Health, Education, and Welfare 1963).

¹⁷⁵ There are of course exceptions such as where the city is located near an ocean

Because the emission of air contaminants may produce harm to the public regardless of location of its source, it is extremely difficult to see what relevance the suitability of the activity to its location has in an agency's determination of the reasonableness of the defendant's emission of air contaminants.¹⁷⁶

The final factor for the agency to consider is the scientific and economic practicability of reducing or eliminating the discharge resulting from the activity. The defendant's conduct would be considered unreasonable if he fails to take practicable steps to reduce the harm that his activities cause.¹⁷⁷ Scientific practicability should be contingent on the "state of the art,"¹⁷⁸ and economic practicability should exist where one can substantially reduce the harm without abandoning his activity or incurring expense or hardship of a magnitude which would make it considerably less profitable to continue. According to the Restatement of Torts,¹⁷⁹ the test of practicability in nuisance law is whether the defendant could effectively and profitably achieve his main objective in such a way that the harm to others would be substantially reduced or eliminated. If he could, then the failure to avoid the harm deprived his conduct of reasonableness it might otherwise have, and the interference is deemed unreasonable as a matter of law.

The consideration of this fourth factor by the agency takes into account the main interests involved in air pollution control. The public's interest in clean air is considered, for industry must do all that is scientifically and economically practicable to reduce its emissions and comply with the standard. At the same time the interest of industry in operating, and the public's interest in the continuous operation of the plant are also considered because the industry will most likely not be forced to cease operating in order to comply with the standard.¹⁸⁰

Although the statutes do not state how the factors listed are to be balanced by the agency in determining the reasonableness of the defendant's emissions, the nature of the factors gives some evidence of the

and the winds carry the air contaminants over the ocean. The location of the emission source could be important in a rural community where only one mill is located, but location of the source in New York City, Los Angeles, Chicago or other large urban areas may not have a great effect on the overall general air mass.

¹⁷⁶ Some states omit this factor from those that the agency must consider. See, e.g., Ind. Ann. Stat. § 35-4604(A)(2) (Supp. 1967).

¹⁷⁷ See Restatement of Torts § 828, Comment g (1939).

¹⁷⁸ See Hearings on S. 780 Before the Subcomm. on Air and Water Pollution of the Senate Comm. on Public Works, 90th Cong., 1st Sess., pt. 4, at 2384-85 (1967).

¹⁷⁹ See Restatement of Torts § 828, Comment g (1939).

¹⁸⁰ In *People v. Peterson*, 31 Misc. 2d 738, 226 N.Y.S.2d 1004 (Erie County Ct. 1961), *People v. Savage*, 1 Misc. 2d 337, 148 N.Y.S.2d 191 (Sup. Ct. 1955), and *People v. Oswald*, 1 Misc. 2d 726, 116 N.Y.S.2d 50 (N.Y. City Magis. Ct. 1952), the New York courts held that where the defendant has done everything possible at the time of the alleged violation of an air pollution standard in order to comply with it, he will not be found guilty of the offense charged.

weight to be given each. The first factor the agency should consider is the scientific practicability and economic reasonableness of reducing the emissions. Because the primary goal of air pollution control is to achieve clean air, no emission source, regardless of its social and economic value, which may injure or interfere with the health or physical property of individuals should be considered reasonable unless everything practicable is done to reduce or eliminate the emissions. If the agency finds that the defendant is doing all that is possible, within the limits of technical and economic practicability, to reduce his air contaminant emissions, it should then weigh the gravity of the harm to the public against the economic and social value of the emission source. The defendant's emission of air contaminants should be considered unreasonable by the agency, unless the utility of the defendant's activity outweighs the gravity of the harm that is caused or threatened. Only by employing this test in the enforcement of an air pollution standard can the agency strike a proper balance.

The conflicting interests may also be considered by the administrative agency at the enforcement level through a proceeding to determine whether to grant a variance. A variance is a statement by the administrative agency that it will not attempt to enforce a standard against an individual and that the individual will be allowed to discharge air contaminants for a longer period of time or to a greater extent than provided in the standard.¹⁸¹ The right to emit air contaminants under a variance is not usually unlimited, however. The variance will often require the individual to comply with a standard that is less rigid than the one contained in the applicable regulation or statute.¹⁸²

A variance proceeding, like a proceeding to enforce a standard, involves consideration of conflicting interests. As a result, most of the statutes¹⁸³ do not provide both for issuance or variances and consideration of conflicting interests in the enforcement proceeding. There are, however, three essential differences between these two proceedings. First, the sole purpose of a variance proceeding is to grant or deny a variance from a standard. Thus, the variance proceeding is unlike an enforcement proceeding, since it is not directed at determining whether an individual has violated a standard nor at determining what sanctions should be imposed if a violation is found.¹⁸⁴ Second, and most important, the vast majority of statutes which contain variance provisions

¹⁸¹ See Cal. Health & Safety Code § 24291 (West 1967).

¹⁸² See, e.g., La. Rev. Stat. Ann. § 40:2211(B) (1965); Mo. Ann. Stat. § 203.110(3) (Supp. 1967).

¹⁸³ Arkansas, Connecticut, Georgia, Illinois, Iowa, Louisiana, New Mexico, Ohio, Rhode Island, South Carolina, Tennessee and Texas are the only states which have these considerations at both types of proceedings. See note 159 *supra*.

¹⁸⁴ See p. 726 *supra*.

do not *require* the agency to grant a variance even after it balances the conflicting considerations in a manner favorable to the individual. In an enforcement proceeding, the agency is required to act in accordance with the weight of the various considerations.¹⁸⁵ In a variance proceeding, the agency may be required to find certain facts before it can grant the variance, but the decision to grant the variance is generally discretionary.¹⁸⁶ Third, a determination of whether to grant a variance is generally made upon application by the individual,¹⁸⁷ whereas a determination of whether to impose a sanction is initiated by the agency.

A determination of whether to grant a variance could include consideration of the four factors which are used in determining whether to enforce a standard, in order to strike a complete balance of all interests. Likewise, a variance could be granted as a matter of right when the administrative agency balances all interests and finds that the public's interest in clean air is outweighed by the need to continue the activity which results in the emission of air contaminants. Existing statutes, however, do not use the variance proceeding in this way. Variances are not granted as a matter of right. In addition, the ultimate questions to be answered by the agencies, in determining whether to grant a variance, give more weight to the public's interest in clean air than do the four factors considered in deciding whether to impose a sanction.

The variance provisions in the statutes generally fall into two categories, with no statute containing both provisions. Those provisions in the first category instruct the agency to consider whether compliance with the standard will result in an arbitrary and unreasonable taking of property or in the practical closing and elimination of any business, occupation or activity, in either case without sufficient corresponding benefit or advantage to the public.¹⁸⁸ The great weight accorded to the public's interest in clean air is manifest by the requirement that no variance will be allowed unless compliance with a standard will virtually close a business or result in arbitrary and unreasonable taking of property. The factors considered at an enforcement proceeding are aimed at determining whether the emission of air contaminants was reasonable. Under this provision, however, the agency could not

¹⁸⁵ See, e.g., P.A. 754, § 5, 1967 Conn. Laws (Conn. Leg. Serv. 1080-81 (1967)); Ill. Ann. Stat. ch. 111½, § 240.5-1.4 (Smith-Hurd 1966).

¹⁸⁶ Of the statutes that provide for variance proceedings, 25 are permissive, whereas only six are mandatory. See note 161 *supra*.

¹⁸⁷ See, e.g., La. Rev. Stat. Ann. § 40:2211(D) (1965); Mo. Ann. Stat. § 203.110(4) (Supp. 1967).

¹⁸⁸ Arizona, California, Colorado, Illinois, Kentucky (Control District Act), Louisiana, Missouri, Oklahoma, South Carolina, Texas and Utah have similar or identical provisions. See note 160 *supra*.

issue a variance merely because it finds the emissions to be reasonable. It must find them to be so necessary to the continuation of the activity that produces the emissions that compliance with the standard will result in discontinuance of that activity. In addition, it must find that, on balance, the public benefit to be derived from requiring compliance with the standard will not outweigh the hardship that compliance would produce. The exact meaning of this second requirement is somewhat unclear, since the term "public benefit" is so broad. The "public benefit" to be considered could be the benefits that result from a reduction in air contaminants.¹⁸⁹ Another interpretation is that the "public benefit" is determined by weighing the benefit accruing from reduction of air contaminants against the public burden accruing from any loss of employment and loss of a product that might result from requiring compliance. This latter interpretation seems superior since, as the statutory inclusion of a balancing process demonstrates, the policy of the statutes is not to make reduction of contaminants an absolute where such reduction will result in other public burdens.

The provisions in the second category instruct the agency to consider whether the emissions occurring or proposed to occur endanger or tend to endanger public health or safety, and whether compliance with the standard would produce practical difficulty or hardship.¹⁹⁰ Such a provision does not involve any balancing of interests since the effect of the emission on health and safety will always be a controlling consideration. A variance will never be permitted if the emissions tend to endanger public health or safety, regardless of the public and private interest in continued operation of a business. It should be noted that if the emissions tend solely to endanger *property*, this provision would appear to allow a variance since there is no mention of the danger to property.¹⁹¹ Practically speaking, however, it is unlikely that a danger to property would result without a danger to public health or safety.

If the emissions do not tend to endanger public health or safety, it appears that a variance may be granted quite readily, since the agency need only find that compliance with the standard would result in "practical difficulty or hardship." The meaning of "practical difficulty or hardship" is not defined in the statute, but is to be determined

¹⁸⁹ See Ariz. Rev. Stat. Ann. § 36-1712 (Supp. May 1967) and Cal. Health & Safety Code § 24296 (West 1967) which add the words "in the reduction of air contaminants" to adopt this meaning.

¹⁹⁰ Connecticut, Iowa, Kansas, Kentucky (Control Act), Michigan, Montana, New Hampshire, New Mexico, Ohio, Rhode Island, Washington and Wyoming have similar or identical provisions. The remaining states that have variance proceedings (Arkansas, Florida, Georgia, Oregon and Tennessee) all emphasize harshness to the individual, but do not require that the emissions have no bad effects on human health. See note 160 *supra*.

¹⁹¹ But see H. File 480, § 13(1)(a), 1967 Iowa Acts (Iowa Leg. Serv. 282 (1967)).

in each individual case by the administrative agency.¹⁹² It is clear, however, that an agency will most often find "practical difficulty or hardship" rather than require the "virtual closing of a business."

If the *sole* objective of air pollution control is to eliminate all the harmful effects of the emission of air contaminants, then the second type of variance provision is preferable to the first since it places exclusive priority on the need for clean air. It is submitted, however, that the objective of air pollution control is to *reduce* the adverse effects of the emission of air contaminants while at the same time maintaining a proper balance among the competing interests. Thus, the first type of variance provision would be preferable since it does provide for some balancing of interests.

Likewise, it would appear that if the goal of air pollution control is to maintain a proper balance among all conflicting interests while reducing the adverse effects of air pollution, this goal can be better accomplished by a proceeding to enforce a standard than by a variance proceeding. This conclusion is the result of two factors: the fact that variances are not granted as a matter of right; and the fact that, even with the preferable first type of variance provision, not all the conflicting interests are weighed in a variance proceeding.

IV. CONCLUSION

In recent years, the amount of air pollution has increased and the health effects of air pollution have become more evident. Since the common law and statutory nuisance actions are inadequate to control air pollution, and because federal policy has been directed at encouraging state and local control, there has been a recent proliferation of state air pollution control statutes.

Air pollution control is generally accomplished through the promulgation of emission standards. Because of the paucity of scientific data and a desire for flexible enforcement, these standards have often been so vague or arbitrary that their enforcement results in a denial of due process of law. In recent years, however, methods have been developed to quantize the relation between air contaminants and their effects on health. The Ringelmann Smoke Chart has come into widespread use. Federal and state governments have created air quality criteria and emission standards for some gases. As this information becomes available and control standards are promulgated based on this information, the constitutional problems will disappear. At the present, the constitutional problems do not appear to impair effective air pollution control.

There is, however, a crucial problem remaining in air pollution

¹⁹² See *L. & M. Inv. Co. v. Cutler*, 125 Ohio St. 12, 21, 180 N.E. 379, 383 (1932).

control. Although there is no doubt of the desirability of clean air, there is also no doubt that the major sources of air pollution are industries of great social and economic value. In order completely to attain clean air, many of these industries would be forced to close. Therefore, there must be a balance struck between the reduction of air pollution and the allowance of industry to continue operation if the United States is to maintain its industrial-based economy. After the extremely tragic occurrence which took the lives of 17 residents in 1948, the town of Donora, Pennsylvania, decided that it was necessary to control air pollution. The measures which were adopted were effective in virtually eliminating all air pollution in Donora. As a result, however, the industry on which the town depended was forced to discontinue operation. Donora is now a ghost-town.¹⁰³

Consequently, to the extent that the constitutional requirements must be met and the competing interests must be considered, the effectiveness of air pollution control will be somewhat diminished. Whether the "prohibitory" or "permit system" is utilized, the degree to which the effectiveness is diminished will be the same. The effectiveness of the "prohibitory system" is further weakened by the fact that it can only begin to operate after an individual has already emitted air contaminants. In addition, many individuals will continue to pollute the air because their emissions have not been detected by the enforcement agency. It is submitted that these two latter disadvantages of the "prohibitory system" might be corrected by the "permit system." The "permit system" is the preferable approach since its effect is to *prevent* air pollution before it occurs, in contrast to the "prohibitory system's" approach of seeking compliance with a standard after violation of that standard has already taken place¹⁰⁴ and some harm has already been caused. The "permit system" also has the advantage of requiring compliance from all possible polluters, rather than the "hit or miss" type of enforcement under the "prohibitory system," where actual violation must be observed and violators may go undetected.

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¹⁰³ Statement by Dr. Melvin First before the Mass. Special Joint Leg. Comm. on Air Pollution, Aug 24, 1967.

¹⁰⁴ See Kennedy, *The Mechanics of Legislative and Regulatory Action*, in *National Conference on Air Pollution Proceedings* 306, 311 (1962).