

LOCAL REGULATION OF AIR POLLUTION

I. LOCAL AUTHORITY

All states have some form of air pollution control, but, recognizing the desirability of local solutions to local problems,¹ many municipal and other sub-state agencies have enacted ordinances and regulations designed to curtail local air pollution. These agencies have derived their power to regulate air pollution from a number of sources, among them the city's inherent police power,² charter provisions³ and state enabling acts.⁴

Generally, a city's "inherent" police power permits it to reasonably regulate conduct in order to promote the health, welfare and safety of its residents.⁵ However, at least one decision holds that a city charter grants no general police power to a municipality.⁶ If the state chooses

1. The Federal Government has specifically recognized the necessity for local action in this area. See Clean Air Act of 1963, 42 U.S.C. 1857(a) (1963) as amended, 42 U.S.C. 1857 (Supp. III, 1968).

2. City of St. Paul v. Gilfillan, 36 Minn. 298, 31 N.W. 49 (1886); City of St. Louis v. Edward Heitzeberg Packing & Provision Co., 141 Mo. 375, 42 S.W. 954 (1897); Bd. of Health v. N.Y. Central R.R., 4 N.J. 293, 72 A.2d 511 (1950); City of Cleveland v. Malm, 7 Ohio Dec. 124 (Clev. Pol. Ct. 1898); Sigler v. City of Cleveland, 3 Ohio N.P. 119, 4 Ohio Sup. & C.P. Dec. 166 (Cuyahoga County C.P. 1896); City of Milwaukee v. Milbrew, Inc., 240 Wis. 527, 3 N.W.2d 386 (1942).

3. See text accompanying notes 5-7, *infra*.

4. City of Rochester v. Macauley-Fien Milling Co., 199 N.Y. 207, 92 N.E. 641 (1910) (control of smoke emission). See generally U. PITT. HEALTH LAW CENTER, *Introduction to DIGEST OF MUNICIPAL AIR POLLUTION ORDINANCES* ii (Public Health Service Pub. No. 982, 1962) [hereinafter cited as *DIGEST*].

5. City of Colo. Springs v. Grueskin, 161 Colo. 281, 422 P.2d 384 (1966) (regulation of truck cargo); City of Cincinnati v. Burkhardt, 10 Ohio C.C.R. (n.s.) 495, 30 Ohio C.C.R. 350 (1908) (control of smoke emission); State *ex rel.* Myhre v. City of Spokane, 70 Wash.2d 207, 422 P.2d 790 (1967) (zoning). See *Visidor Corp. v. Borough of Cliffside Park*, 48 N.J. 214, 225 A.2d 105 (1966) (one-way street ordinance); City of Milwaukee v. Milbrew, Inc., 240 Wis. 527, 3 N.W.2d 386 (1942) (city has authority from its charter to declare and punish nuisances). Cf. *Erie R.R. v. Mayor of Jersey City*, 83 N.J.L. 92, 84 A. 697 (1912) (unreasonable regulation exceeds city's power). See also *Harmon v. City of Chicago*, 110 Ill. 400 (1884); City of St. Paul v. Gilfillan, 36 Minn. 298, 31 N.W. 49 (1886); City of St. Louis v. Edward Heitzeberg Packing & Provision Co., 141 Mo. 375, 42 S.W. 954 (1897). For a further discussion of the subject of municipal regulation of air pollution with regard to limits on time of emission, nature of contaminant and water vessels, see 62 C.J.S. *Municipal Corps.*, 298 (1949).

6. *Penn-Dixie Cement Corp. v. City of Kingsport*, 189 Tenn. 450, 225 S.W.2d 270 (1949). See *Parker v. Fairmont*, 72 W.Va. 688, 79 S.E. 660 (1913) (only smoke emission that is nuisance *per se* or made a nuisance by statute can be abated).

to delegate its own power to control air pollution to a municipality, the grant is frequently formed as a city charter provision authorizing the city to prevent and abate nuisances. Such provisions are usually construed narrowly. Many courts have reasoned that the provisions grant the city only the right to regulate common law nuisances or nuisances in fact, and not to declare nuisances or control activities not illegal at common law.⁷ However, since changes in the charter provisions can circumvent these decisions,⁸ the town charter can be effectively used as a source of municipal authority over air pollution.⁹

State enabling acts are another source of a city's power to regulate air pollution. This is probably the most popular method of delegating air pollution control responsibility to localities. Enabling acts are exceedingly flexible, allowing the municipalities to meet their own problems. They do not require the inclusion of specific language in the town charter,¹⁰ and they have been approved by the United States Supreme Court.¹¹

Nevertheless enabling acts are not without their problems. First, early municipal regulations based on enabling acts encountered judicial opposition on the ground that the acts did not specifically provide for the enactment of the challenged ordinance.¹² Recent cases indicate, however, that courts may be willing to look more to the intended

7. See *Harmon v. City of Chicago*, 110 Ill. 400 (1884); *City of St. Paul v. Gilfillan*, 36 Minn. 298, 31 N.W. 49 (1886); *City of St. Louis v. Edward Heitzeberg Packing & Provision Co.*, 141 Mo. 375, 42 S.W. 954 (1897).

8. *Ballentine v. Nester*, 350 Mo. 58, 164 S.W.2d 378 (1942). See *City of St. Paul v. Haugbro*, 93 Minn. 59, 100 N.W. 470 (1904). This decision was followed in *City of St. Paul v. Robbins*, 93 Minn. 138, 100 N.W. 1124 (1904).

9. See *State v. Chicago M. & St. P. Ry.*, 114 Minn. 122, 130 N.W. 545 (1911); *Ballentine v. Nester*, 350 Mo. 58, 164 S.W.2d 378 (1942); *Penn-Dixie Cement Corp. v. City of Kingsport*, 189 Tenn. 450, 225 S.W.2d 270 (1949). Compare *Harmon v. City of Chicago*, 110 Ill. 400 (1884), with *City of St. Paul v. Gilfillan*, 36 Minn. 298, 31 N.W. 49 (1886).

10. *Ballentine v. Nester*, 350 Mo. 58, 164 S.W.2d 378 (1942); *Penn-Dixie Cement Corp. v. City of Kingsport*, 189 Tenn. 450, 225 S.W.2d 270 (1949).

11. *Northwestern Laundry v. Des Moines*, 329 U.S. 486 (1916). State enabling acts had been previously upheld in lower courts. See, e.g., *Glucose Refining Co. v. City of Chicago*, 138 F. 209 (N.D.Ill. 1905); *Ex parte Junga*, 10 Cal. App. 602, 103 P. 159 (Ct. App. 1909); *City of Chicago v. Dunham Towing & Wrecking Co.*, 161 Ill. App. 307 (1911); *State ex rel. Kittenbrink v. Witnell*, 91 Neb. 101, 135 N.W. 376 (1912).

12. In *Sigler v. City of Cleveland*, 3 Ohio N.P. 119, 4 Ohio S. & C.P. Dec. 166 (Cuyahoga County C.P. 1896), an ordinance prohibiting smoke emission was struck down on the basis that the enabling act had granted the municipality only the authority to regulate smoke emission, not to declare it a nuisance *per se*. Compare *Commonwealth v. Standard Ice Co.*, 59 P.L.J. 133 (Allegheney C.C. 1911), with *Commonwealth v. Pollard*, 97 P.L.J. 133 (Allegheney C.C. 1948). See also *City of Cleveland v. Malm*, 7 Ohio Dec. 124 (Clev. Pol. Ct. 1898).

scope of the enabling act than to its specific language.¹³ Secondly, ordinances enacted under an enabling act are extremely vulnerable if they invade an area previously regulated solely by the state or county.¹⁴ Finally, no matter how the locality is accorded the power to regulate air pollution, its controls will not be allowed to interfere with state regulation of certain industries.¹⁵

II. THE LOCAL PROGRAM: IN GENERAL

Local air pollution control agencies function in geographic areas of varying size and complexity, ranging from small industrial districts to county administered programs encompassing many forms of air pollution.¹⁶ The basic strength of these local programs is their ability to administer closely co-ordinated, day-to-day control over recognized air pollution sources. This kind of local control is based more on active officials who are responsive to local problems and knowledgeable of

13. See *City of Chicago v. National Brick Co.*, 331 Ill. App. 614, 73 N.E.2d 647 (1947); *West Bronx Auto Paint Shop, Inc. v. City of New York*, 33 Misc. 2d 29, 223 N.Y.S.2d 984 (Sup. Ct. 1961).

14. See *Pfister Chemical Co. v. Romano*, 15 N.J. Misc. 71, 188 A. 727 (1937). *But cf.* *Highway 100 Auto Wreckers, Inc. v. City of West Allis*, 6 Wis. 2d 637, 96 N.W.2d 85, *aff'd on rehearing*, 6 Wis. 2d 423, 97 N.W.2d 423 (1959).

15. *Pennsylvania R.R. v. City of Jersey City*, 84 N.J.L. 716, 87 A. 465 (Ct. Err. & App. 1913); *Verona v. Shalit*, 92 N.J. Super. 65, 222 A.2d 145 (Essex Cty. Ct. 1966). *Cf.* *Mayor of Jersey City v. Abercrombie*, 53 A. 73 (N.J. 1904).

16. Albuquerque, N.M., Ordinance 2218, § 2(C), Dec. 18, 1962; Allentown, Pa., Ordinance 9965, § 2, Oct. 30, 1962; Birmingham, Ala., Ordinance 523-F, § 8; BOSTON, MASS., GEN. LAWS ch. 111, § 142A (1961); Charlotte, N.C., Air Pollution Control Ordinance § 3, March 29, 1967; Chattanooga, Tenn., Air Pollution Control Ordinance § 1-A, proposed Dec. 7, 1967; CHICAGO, ILL., MUN. CODE ch. 17, preamble (1966); CINCINNATI, OHIO, MUN. CODE ch. 15, § 2500 (1965); Cleveland, Ohio, Ordinance 428-A-62, ch. 13, § 4.1301, June 18, 1962; Dayton, Ohio, Ordinance 19644, § 1011-1(a), Oct. 19, 1960; Detroit, Mich., Ordinance 167-E, Aug. 15, 1947; East Chicago, Ind., Air Quality Control Ordinance 2884, § 1.2, March 27, 1967; Erie, Pa., City Bill No. 8619, preamble, Feb. 27, 1951; Evansville, Ind., Air Quality Control Ordinance § 1.2; GARY, IND., MUN. CODE, ORDINANCE 4232, § 2.1, April 4, 1967; GREEN BAY, WIS., MUN. CODE § 20.01; HARTFORD, CONN., MUN. CODE ch. 31 (1967); Kansas City, Kan., Ordinance 46114, preamble, Feb. 1, 1967; LANSING, MICH., CODE ch. 21, art. 2 (1958); Los Angeles, Calif., Rules and Regulations r. 2(g), March 3, 1967; MADISON, WIS., BUILDING CODE § 17.97 (1965); Nashville, Tenn., Air Pollution Control ch. 15, art. 3 (proposed); New Haven, Conn., Ordinance 329, § 1, May 4, 1953; New York City, N.Y., Ordinance 14, § 892-1.0, May 20, 1966; PHILADELPHIA, PA., AIR POLLUTION CODE tit. 3 (1954); PITTSBURGH, PA., CODE § 1301 (1960); ROCHESTER, N.Y., CODE ch. 100 (1951); St. Paul, Minn., Ordinance 9275, preamble, May 14, 1949; Spokane, Wash., Ordinance C2804, May 1, 1916; TOLEDO, OHIO, MUN. CODE, art. 60 (1962); Tulsa, Okla., Ordinance 10819, § 3, June 9, 1967; Youngstown, Ohio, Ordinance 54639, Feb. 13, 1952 [hereinafter cited by city name and pertinent section].

local conditions than the threat of sanctions imposed by a totally comprehensive ordinance.¹⁷ Although these local agencies are more susceptible to special interest groups and more wary of offending industry than their state, interstate, or federal counterparts, this same proximity provides them with the expertise to deal with local problems, and incidentally makes them more accessible to both complaints and lobbying from regulated industries.¹⁸

More often than not, however, the ideal of local administrators maintaining close surveillance over specifically defined problem areas is not only unrealized but unsought. According to a poll conducted by this publication, only 16 of 55 jurisdictions had either effected or proposed modern approaches to air pollution within the last five years.¹⁹ Only a handful appear to have based a local air pollution program on the peculiar strength of local regulation.²⁰

III. THE ADMINISTRATION OF LOCAL CONTROLS

The structure of local air pollution agencies follows no identifiable pattern. This survey is meant only to outline some of their characteristics and suggest how they might be most effectively structured.

The tasks of the local agencies are frequently divided into four categories: Advisory, Legislative, Executive and Appellate. One body may operate in two, three or even all of these areas.²¹

17. DIGEST at iii; see Clean Air Act of 1963, 42 U.S.C. § 1857b(a), (b) (1963) as amended 42 U.S.C. § 1857b(a), (b) (Supp. III, 1968), where the Federal Government recognized the effectiveness of local officials by making available to them information, funds, training and "encouragement." See also note 18, *infra*.

18. STATE AND LOCAL PROGRAMS IN AIR POLLUTION CONTROL 3 (Public Health Service Pub. No. 1549, 1966); STAFF OF SENATE COMMITTEE ON PUBLIC WORKS, 88TH CONG., 1ST SESS., STUDY OF POLLUTION—AIR 36 (Comm. Print 1963).

19. Birmingham, Charlotte, Chattanooga, Chicago, Cincinnati, East Chicago, Evansville, Gary, Green Bay, Hartford, Kansas City (Kan.), Los Angeles, Madison, Nashville, New York City and Tulsa.

20. DIGEST at iv & v. See, e.g., Charlotte § 1; Chicago § 17-2; East Chicago § 1.3; Gary § 1.3; Pittsburgh § 1302. Each of the sections defines the city's standards in such a way as to facilitate fast and efficient enforcement, on a continuous basis. For a list of typical definitions, see TECHNICAL ASSISTANCE BRANCH—ROBERT A. TAFT SANITARY ENGINEERING CENTER, A COMPILATION OF SELECTED AIR POLLUTION EMISSION CONTROL REGULATIONS AND ORDINANCES 4 (Public Health Service Pub. No. A65-34, 1965). See also Birmingham § 1; Wichita § 7.40.010. Tulsa, while broadly defining air pollution as any material or substance that is offensive to humans or animals, lists only seven definitions, none of which define tests or specific pollutants. Tulsa § 1.

21. E.g., Green Bay § 20.04; Chicago § 17(13); Philadelphia § 3-304.

The advisory duties of the local agency are generally carried on by a board containing from five to fifteen members, sitting for terms of between two and five years. The members are usually required to be acquainted with or professionally related to air pollution abatement problems.²² Charlotte's advisory board, for example, must consist of a professional engineer, a physician, two industrial representatives, one agricultural representative, one person from the general public, and a lawyer.²³ In general the boards are independent of the executive²⁴ and without power to enact either regulations or guidelines.²⁵ At least one city has made the consent of the advisory board necessary before the director can recommend new rules or regulations for adoption by the city.²⁶ But no matter how new rules are proposed, the legislative function is usually performed by an independent body.²⁷

There are two disquieting features to separate advisory and rule-making boards. First, separating the power to regulate from the power to study and propose regulation offers both the advisory board and the true legislative organ the opportunity to blame the other for inadequate results.²⁸ In addition, such separation gives special interest groups another opportunity to impede the air pollution abatement process. To avoid these problems, information, power and responsibility should be located in one body. Secondly, despite the explicitness with which the ordinance may describe the members of the board, unless the ordinance specifically provides that no special interest group may dominate its membership, it is possible that a majority of the board will espouse an industrial viewpoint unfavorable to proper pollution controls. This is possible even if the board's membership is as specifically defined as that of Charlotte.

At the executive level, most local air pollution organizations rely

22. *E.g.*, Chicago § 17-16. "Since many local programs were originally directed only at smoke control the personnel employed were often selected for their knowledge of fuel firing practices. The more diverse and complex sources which now present the major problems are often outside their area of competence. In such situations there may be a natural inclination for them to concentrate efforts on only those problems (*sic*) which are familiar." SENATE COMMITTEE ON PUBLIC WORKS, A STUDY OF POLLUTANTS—AIR, 88TH CONG., 1ST SESS. 36 (1963).

23. Charlotte § 2.

24. *E.g.*, Birmingham § 8; Chicago § 17-17; Cincinnati § 2500-6; East Chicago § 2.4; Tulsa § 8.

25. *E.g.*, Chicago §§ 17-15, 17-16; Charlotte § 2; Evansville § 2.4(a).

26. Chicago § 17(13)(11).

27. *E.g.*, Nashville § 3.1521 (Board of Health); Tulsa § 8 (Board of Health).

28. DIGEST at iv.

on a chief of staff, who is charged with the primary responsibility for enforcing local air pollution ordinances and regulations. The ordinances usually require some professional qualifications for this office. The executives' responsibilities include administrative duties, the recommendation of standards, enforcement, and the dissemination of information to the public.²⁹

The chief administrative officer generally has several officials under his supervision, who periodically inspect local sources of air pollution.³⁰ These officials represent the strength of local air pollution programs, since they are able to police local sources of pollution closely and continually. The effectiveness of a local air pollution program rests on their performance. The potential concurrence of interest between local inspectors and local industry therefore has been recognized officially in at least one ordinance,³¹ but it is unlikely that any provision in an ordinance can wholly eliminate this problem.

The final level of a typical air pollution authority is the "Appeal Board." Though often an independent body,³² sometimes its functions are combined with those of the advisory board.³³ Such combinations appear unsatisfactory, for they may not adequately provide impartial review.

Like the advisory boards, the appeal boards are usually composed of three to seven members representing various interests of the community as well as technical, legal and political personnel.³⁴ Procedure before a local board is usually governed by the ordinance itself.³⁵ Typically, after an adverse decision by the executive organ an aggrieved party is given a certain number of days to file an appeal. The director of the regulatory board then delivers all relevant data to the appeal board.³⁶ Subsequently a hearing date is set and notice is given to all parties. The hearing may be closed or open to the general public. At the hearing the parties are entitled to be represented by counsel, evidence may be introduced, testimony received and witnesses cross-examined.³⁷ A transcript of the proceeding is kept, since most ordi-

29. *E.g.*, Gary § 2.2; East Chicago § 2.2.

30. *E.g.*, Chicago §§ 17-3, 17-11; Gary §§ 2.1(B), 2.3(A).

31. Gary 2.3(B).

32. Chicago § 17-20; Detroit art. 1, § 1.4, art. 2, § 2.28-9.

33. *E.g.*, Green Bay § 200.02(2); East Chicago § 2.4.

34. *E.g.*, Chicago § 17-20; East Chicago § 2.4; Evansville § 2.5.

35. *E.g.*, Chicago §§ 17-20, 17-21.

36. *E.g.*, Chicago § 17-21; Dayton § 8-8-13; East Chicago § 2.5; Erie art. 5; New Haven § 4; Tulsa § 9.

37. Chicago § 17-2; Digest at vi.

nances provide for judicial review of the appeal board's decision.³⁸ Judicial review is generally limited to matters of law rather than a trial de novo.³⁹

IV. METHODS OF CONTROL

Older attempts at local control relied primarily on broad catch-all sections forbidding pollution dangerous to health.⁴⁰ Most modern ordinances combine these with other sections setting specific standards,⁴¹ such as those dealing with the specific amount of pollutants in the atmosphere in terms of either opacity, released particulate matter, or both.⁴²

A. *The General Provisions*

Most jurisdictions have enacted air pollution ordinances consistent with the common law concept that the emission of air contaminants having a detrimental effect on health, comfort and property of any citizen constitutes a nuisance.⁴³ These ordinances are broadly phrased; for example, a Kansas City ordinance provides:

No person shall cause or permit the discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or which en-

38. *E.g.*, Chattanooga § 8-E; Evansville § 2.5; Gary § 2.6.

39. *Dices* at vi.

40. *See* Spokane § 2; *see also* Wichita § 7.40.040(3), (1965).

41. Cincinnati § 2500-3 (general), §§ 2501-15 to 2501-18 (specific); Dayton § 848-8 (general), § 848-6 (specific); Erie § 3 (general), § 1 (specific); Philadelphia § 3-101 (general), § 3-102 (specific); *cf.* Birmingham § 2, which prohibits only "emissions into the atmosphere from fuel burning equipment of smoke of Chart 3 shade or darker." This standard is not applicable to several of the specific pollutants. It would appear from the title of the ordinance ("An Ordinance to Provide for the Abatement of Smoke, Soot, Fumes and Gases") that other specific pollutants are to be regulated. Since the tests for these other pollutants are not specified, one would assume that common law nuisance is the test imposed.

42. Charlotte § 13; Chicago § 17-2(2, 69), 17-24; Detroit art. 1, § 1.44, art. 2, § 2.4A; East Chicago § 3.1; Gary § 3.1, art. VI, § 6.1-4; Los Angeles reg. IV, r. 50, 52; Pittsburgh § 1305.2, 4.

43. Albuquerque § 3; Allentown § 1(a); Charlotte § 13(D); Chattanooga § 1-A; Chicago §§ 17-27, 17-28; Cincinnati § 2501-3(b); Cleveland § 4.0507-08; Dayton § 848-8; East Chicago § 6.10; Gary § 6.11; Green Bay § 20.02(1); Hartford § 31.4; Kansas City § 9; Lansing § 21-16; Los Angeles r. 21-16; Madison § 17.97(5)(b); Nashville § 3.1528; New Haven § 1; Philadelphia § 3-102(3); St. Paul § 5(f); Spokane § 2; Toledo § 2; Tulsa § 5; Youngstown § 34.10.

danger the comfort, repose, health, or safety of any such persons or the public or which cause or have a tendency to cause injury or damage to business or property.⁴⁴

The value of such general ordinances is limited. The judicial standard applied is whether the municipality is "reasonably" regulating the offender. Consequently, in order for prosecution or injunction to be effective the agency must show to the court's satisfaction that the emissions have caused, are causing, or will cause the harmful effects prohibited.⁴⁵ But ordinances of this type do provide some flexibility for the municipality in responding to newly arising air pollution problems.

It is possible that the rule making power of some of the agencies could be used in conjunction with the "catch-all" ordinances to increase flexibility in dealing with local problems, but these rule making powers are also limited. Before the agencies can enact or consider new rules they generally must hold public hearings open to all residents of the area affected by the proposed ordinance.⁴⁶ Ideally, the advisability of the rule or ordinance should then be weighed in the light of both present and future considerations.⁴⁷ Considerations, hearings and rule drafting take time.

B. *Specific Controls*

Most ordinances specify both (1) types of pollutants and (2) types of sources to be regulated. These ordinances reflect a disposition not only to prohibit air contamination, but to indicate the means by which it is to be prevented.⁴⁸ Thus, sections dealing with pollutants establish

44. Kansas City § 9.

45. *Erie R. Co. v. City of Jersey City*, 83 N.J. 214, 84 A. 697 (1912); *City of Cincinnati v. Burkhardt*, 10 Ohio C.C.R. (n.s.) 495, 30 Ohio C.C.R. 350 (1908); *City of Milwaukee v. Milbrew*, 240 Wis. 527, 3 N.W.2d 386 (1942). Cf. *City of Colo. Springs v. Grueskin*, 161 Colo. 281, 422 P.2d 384; *People v. Long Island R.R. Co.*, 31 N.Y.S.2d 537 (Ct. Spec. Sess. 1941). But it is not likely that modern courts will narrowly construe "reasonableness." See *City of Rochester v. Macauley-Fien Milling Co.*, 199 N.Y. 207, 92 N.E. 641 (1910) (unless unreasonable on its face as a matter of law, court of appeals is bound by trial court holding of reasonableness) (regarding smoke emission controls); *State ex. rel. Myhre v. City of Spokane*, 70 Wash.2d 207, 422 P.2d 790 (1956). The value of the ordinance seems entirely dependent on the local bench. It is much easier for the agency to prove a violation of fixed emission standards than to meet the burdens of such an ordinance, and therefore the effect of definite standards of potential offenders is undoubtedly greater.

46. E.g., *Charlotte* § 2; *Chicago* § 17-31(11).

47. E.g., *Chicago* §§ 17-13(7), -18; Nashville lists the Air Quality goals at Nashville § 3.1520. The Nashville ordinance also provides for more stringent standards to take effect within a given period from the enactment of the ordinance. Nashville § 3.1502(1).

48. All of the ordinances in the survey adopt this dual regulatory scheme.

tests and standards,⁴⁹ while those concerned with sources provide for improvement in machinery design and encourage the use of pollution-control devices. Among regulations dealing with specific emissions those most often mentioned are soot, cinders, dust, odors and smoke, although these are by no means the only ones.⁵⁰

Standards utilized for specific pollutant regulation may be phrased in terms of (1) maximum optical density of the effluent based on particular time periods⁵¹ or (2) a maximum particulate or gas content for effluent emissions, usually stated either in terms of particulates per unit of weight of contaminant lost per weight of material processed by the equipment.⁵² These standards may not be constant throughout the entire municipal area and may vary according to which zones within a city produce the greatest amount of pollution.⁵³ Usually a combination of (1) and (2) is utilized, with the manner of combination depending on the pollutant being regulated.⁵⁴

49. *E.g.*, Dayton § 848.6; Green Bay § 20.09; Pittsburgh § 1306-09; Saint Paul § 5.

50. The following abbreviations will be used: smoke(s); gases(g); dust(d); fumes(f); mist(m); odors(o); vapors(v); radiations(r); soot(so); cinders(c); oxides(ox); acids(a); solids(sol); ash(ash); liquids(l). After each city the section of the ordinance where the specific emissions prohibited are listed will be noted. Albuquerque (so, c, d, g, s, f) (§ 4(A)); Allentown (s, g, d, f, m, o, v, r) (§ 1(a)); Birmingham (s) (§ 2); Boston ("one or more contaminants") (p. 171 DICESR); Charlotte (all encompassing) (§ 1); Chattanooga (a, o, m) (§ 10); Chicago (all encompassing) (§ 17-2); Cincinnati (d, f, s, so, o, "other materials") (§ 2500-3); Cleveland (d, f, g, m, v, o, s, so, c) (ch. 1); Dayton (s, g, a, d, c, f, so, o) (§ 848-5); Detroit (s, so, c, a, f, g, d, ash) (Art. 2 § 2.1); East Chicago (all encompassing) (§ 1-3 (1)); Erie (s, so, d, c, g, v, f, o) (Art. 4 § 3); Evansville (o, d, f, g, m, s, so, w) (§ 1.3); Gary (so, ash, d, c, a, f, o, g, v) (§ 21.3(1)); Green Bay (s, d, g, so, f) (§ 20.01); Hartford (s, so) (§ 31.2); Kansas City (s, so, a, c, d, f, g, v, l, o) (§ 1(1)); Lansing (sol, v, m, a, f, g) (§ 21-18); Los Angeles ("air contaminants") (Rule 51); Madison (g, a, d, s, so) (§ 17.97(5)(b)); Nashville (so, d, ash) (§ 3.1501(1)); New Haven (s, d, o) (§ 1); New York (so, s, ash, g, f, v, o) (§ 892-10); Philadelphia (d, f, g, m, o, s, v) (§ 3-101); Pittsburgh (all encompassing) (§ 1302(1)); Rochester (s, a, g, o, d, so, c, ash) (§ 100); St. Paul (so, s, d, m) (§ 5); Toledo (d, g, f, m, v, s, o) (§ 3-60-7(1)); Tulsa (all encompassing) (Definitions); Youngstown (so, c, a, f, g) (§ 34.12).

51. A typical provision is that of Los Angeles, r. 50:

A person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminants 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 Rule.

52. DICESR at v. Due to individual problems facing each community, there are many variations in this type of standard. *See, e.g.*, Los Angeles Rules 52-54 and New Haven § 6. It would be advisable for a drafter to check the ordinances of communities having problems similar to his own.

53. *E.g.*, Kansas City § 5(B)(2); Tulsa § 3.

54. Pittsburgh § 1306-09; St. Paul § 5-7.

The second method of control, *i.e.* regulation of the various types of air pollution sources, generally starts with a prohibition of the use of equipment or fuels known to cause pollution. The prohibition may be effected by using any one of four general methods: (1) forbidding the use of certain types of fuel,⁵⁵ equipment,⁵⁶ or activity;⁵⁷ (2) establishing minimum design standards for pollution causing equipment;⁵⁸ (3) establishing operational standards,⁵⁹ and (4) requiring the use of specific types of control equipment techniques.⁶⁰ To be effective, the requirements just mentioned must be stringent enough that compliance with any one of them will meet the minimum standards of any other requirements of the code.⁶¹

Other measures available to the locality if it chooses to directly regulate "pollution sources" include (1) permits, (2) registration certificates of operation and (3) restrictions on the sale of equipment. Under the permit system, designs, operational descriptions, or other data concerning the operation of an air pollution source are submitted to the appropriate authority before the operation is commenced.⁶² The authority may then prevent or permit the operation based on its determination of the potential threat to air purity.⁶³ Generally, the permit system applies only to the construction of new air pollution sources or to major repairs of an existing operation. Consequently,

55. *E.g.*, Chattanooga § 10, Rule 4; Nashville § 3.1503(1). "Where certain fuels are a source of air pollution, the use or composition of such fuels may be regulated by such means as requiring the washing, cooking, briquetting of coal, etc., the specification of smokeless grades of fuels, the reduction of the sulfur content of fuel oils, reduction of the olefinic hydrocarbons in gasoline, regulation of liquid vapor pressure, etc. In such cases, regulation usually affects the producer or vendor, rather than the consumer of these fuels." DIGEST at v.

56. *E.g.*, Chicago §§ 17-43 to 17-47 (surface-burning types of equipment, refuse burning equipment); Nashville § 3.1504(1) (hand-fired burning equipment).

57. Chicago §§ 17-30 (open burning), 17-31 (construction, demolition or wrecking fires), 17-33 (storage of materials susceptible to becoming windborne); Gary §§ 6.5 (storage of petroleum), 6.9 (open burning).

58. Detroit § 4.6; Toledo § 3-60-7(6); Youngstown § 34.28.

59. *E.g.*, Green Bay § 20.09; Youngstown § 34.28 (steam railroads or locomotives using solid fuels).

60. Green Bay § 20.07; Rochester § 100-5; Youngstown § 34.12. There are a variety of exemptions to these provisions. The most common exclude private dwellings with a maximum number of families and minor repairs from compliance with the provisions of the act. *See, e.g.*, Birmingham § 13 (two family or less dwellings); Los Angeles 11(c) (four family or less dwellings) and Rule 11(m) (minor repairs). The categorization used appears in DIGEST at v.

61. DIGEST at v(c).

62. *E.g.*, Cleveland § 4.0901; Philadelphia § 3-301.

63. DIGEST at v. *See, e.g.*, East Chicago Art. III, § 3.1; Gary § 4.1; Los Angeles Reg. II, r. 10(a).

the system is useful only in conjunction with a means of regulating operative air pollution sources. Its major advantage is that it reduces the need for the air pollution agency to maintain a large staff of inspectors to seek out and eliminate air pollution sources. Eventually, it would seem, all equipment in use will have passed through this initial screening.⁶⁴

The certificate of operation closely resembles the permit. But instead of certifying a potential air pollution operation before it begins, ordinances utilizing this method provide that the air pollution sources are to be tested during operation. The certificate is issued if the tests show that the standards established by the locality are met.⁶⁵ These certificates generally specify, *inter alia*, the type of fuel and operational method to be used by the holder,⁶⁶ and are valid only for a limited period of time.⁶⁷ While the certificate system has the advantage of enabling the agency to regulate pollution sources with a great degree of certainty, it too creates problems. First, it requires the agency to employ a larger staff. Secondly, it is economically undesirable from an industry's viewpoint: a considerable amount of time and labor can be wasted while machinery is being tested and evaluated.

The third of these preventive measures restricts the sale of equipment known to produce air pollution. Such regulation may take the form of an outright prohibition of sale within the locality's jurisdiction;⁶⁸ requiring that a seller obtain a permit to sell the equipment;⁶⁹ or that the equipment itself be approved.⁷⁰ These restrictions are often the least satisfactory preventive approach since they afford the operator no chance of modifying the equipment in order to comply with the standards of the area.

Both the "permit" and "sale restriction" methods share the shortcoming of relying at least in part on non-objective determinations by the authority. The "certificate of operation method," though based on substantive data gathered from an actual emission, seems pragmatically undesirable. On this basis, the "emission control" regulations

64. *Senate Committee on Public Works, A Study of Pollution—Air*, 88th Cong., 1st Sess. 36 (1963).

65. Albuquerque § 5; Gary § 4.11.

66. Pittsburgh § 1310.6.

67. Cleveland § 4.0903.

68. Chicago § 17-45; Nashville § 3.1503.

69. Los Angeles r. 10 (f); Youngstown § 34.21.

70. Chicago § 17-46.

appear more flexible and probably more useful, at least in a complex industrial area.

C. *Registration Provisions*

Identification facilitates enforcement of both "emission" and "source" control ordinances. Consequently, several localities have provided for the registration of regular or anticipated sources of emissions.⁷¹ For example, the Charlotte ordinance provides in part: "Persons owning or engaging in operations which may result in or contribute to air pollution shall, upon request, supply information including, but not limited to, location of operation, size and height of pollutant outlet, expected effluent rate and duration, and composition of air contaminant discharge."⁷² These provisions serve to assist the agency in determining reasonable emission standards for given areas, along with enabling it to more easily locate pollution sources.

V. ENFORCEMENT

A. *The Means of Enforcement*

Local regulations are enforced by processes similar to those used by the states in enforcing state-wide regulations. For example, a local air pollution agency may utilize a right of entry to discover violations.⁷³ Once a violation has been found by this or any other method, the offender may be considered guilty of causing a public nuisance or committing a misdemeanor. Thus, he may be subject to fines, injunctions, or the sealing of his equipment.

If an ordinance declares air pollution to be a public nuisance,⁷⁴ an injunction is the normal method of enforcement,⁷⁵ though other remedies are available. Four cities, however, provide that a violation of ordinance provisions constitutes a misdemeanor.⁷⁶ Such provisions

71. *E.g.*, Charlotte § 4; Gary § 4.14.

72. Charlotte § 4.

73. Albuquerque § 8. "The Health Authority, during reasonable hours, for the purpose of enforcing or administering the Air Pollution Control Ordinance or any rule or regulation promulgated pursuant thereto, may enter any building, premise, or other place, and may stop, detain, and inspect any vehicle. Any person knowingly interfering in any way with the performance of the duties of the Health Authority may be deemed guilty of a misdemeanor and may be subject to the penalties hereinafter provided."

74. East Chicago § 6.11; Green Bay § 20.02; Rochester § 100-3; Tulsa § 5.

75. *DIGEST* at vi(5). Abatement, meaning an injunction, is normally the judicial reaction to a nuisance.

76. Albuquerque § 13; Charlotte § 19; St. Paul § 10; Tulsa § 11.

differ from the "nuisance" type of ordinance since the penalties are made specific, usually in terms of either a maximum or both a minimum and maximum penalty. Graduated penalties for successive violations and provisions that each day's violation shall constitute a separate offense are also common,⁷⁷ as are provisions authorizing the agency to issue cease and desist orders against violators after providing them an adequate opportunity to present objections.⁷⁸ If such orders are not appealed through the courts, they become final. Failure to comply is punishable by fine or imprisonment.⁷⁹

Sealing the violator's operation is an extreme remedy used primarily to enforce compliance with the permit and registration sections of the regulations,⁸⁰ or to assure that adequate corrective measures are taken after a violation is brought to an offender's attention.⁸¹ The New York ordinance provides a typical example of a sealing provision:

The commissioner may seal any equipment installed or operated without a permit as herein required. The commissioner may also after notice and hearing, seal any equipment or prohibit any process responsible for the emission into the open air of harmful or objectionable substances, and may prohibit the operation thereof until an operating certificate has been obtained.⁸²

B. *Exceptions to Enforcement*

A succinct and typical variance provision appears in the Albuquerque ordinance:

The Health Authority may hold a public hearing to determine under what conditions and to what extent a variance from the requirements of the Air Pollution Control Ordinance or any rule or regulation established under its provisions is necessary and will be permitted. The Health Authority shall specify the duration of a variance, which shall not be longer than one year,

77. *E.g.*, Albuquerque § 13; Chicago § 17-19; Green Bay § 20.15.

78. *E.g.*, Dayton § 838-12; Pittsburgh §§ 1313, 1314; Youngstown §§ 34.10, 34.34.

79. *DIGEST* at vi(5).

80. New York, § 892-6.0.

81. Evansville, § 11.1.

82. New York, § 892.60. *See also* Gary, §§ 4.7, 4.10(b); East Chicago, §§ 4.8, 4.10. If a proposed installation, construction, reconstruction, or alteration for which a permit was required is not completed within a given time period (*e.g.*, one year in Gary), several ordinances provide that the permit will become null and void and all fees will be forfeited. In such cases, even if the construction is completed within the limit set but, upon testing, the equipment fails to meet the requirements and limitations of the ordinance, a certificate of operation will be withheld pending changes in the processing methods, fuel or refuse burning procedures or control equipment.

but such variance may be continued from year to year without another hearing on the approval of the Health Authority. The Health Authority may revoke or modify any order permitting a variance.⁸³

Similar provisions are found in almost all ordinances, and are useful when the regulations would lead to unduly oppressive results without corresponding benefit.

C. *Emergency Provisions*

Of those cities polled, only two have emergency pollution provisions. The Los Angeles provision "is designed to prevent the excessive build-up of air contaminants and to avoid any possibility of a catastrophe caused by toxic concentrations of air contaminants."⁸⁴ It provides both a method of determining the existence of such a catastrophe and the action to be taken in the event the catastrophe arises.⁸⁵

VI. RESULTS OF QUESTIONNAIRE

This study was compiled from the answers from the 55 cities responding to a questionnaire distributed by this publication. Seventy-five localities were initially included in the survey, four of which indicated they had no air pollution program and twenty of which responded after the deadline set for inclusion. The primary focus was on cities with a population of over 500,000 persons, especially those with nationally recognized air pollution problems. A random poll of smaller communities was also taken. Due to the nature of several questions asked, confidentiality was promised. For this reason, specific localities making each response will not be noted.⁸⁶

Size of the Staff

As previously noted, four of the cities responding indicated they had no air pollution staff. The size of the staffs in the remainder

83. Albuquerque, § 7.

84. Los Angeles, Preface to rules 150-52.

85. *Id.*

86. The cities which most courteously responded are: Akron; Albuquerque; Allentown; Bellville; Birmingham; Boston; Buffalo; Camden; Charlotte; Chattanooga; Chicago; Cincinnati; Dallas; Dayton; Denver; Detroit; Deluth; East Chicago; Evansville; Erie; Fort Worth; Gary; Houston; Indianapolis; Kansas City, Kan.; Kansas City, Mo.; Lansing; Los Angeles; Louisville; Madison; Milwaukee; Minneapolis; Montgomery; Nashville; New Haven; New Orleans; New York City; Oklahoma City; Philadelphia; Phoenix; Pittsburgh; Rochester; Sacramento; St. Louis; San Antonio; San Diego; Seattle; Spokane; Toledo; Trenton; Tulsa; Wichita; Youngstown.

ranged from one to 305 members, although the 305-member body was responsible for more than one urban area. Full-time employees totalled 1,126 persons; part-time, 26 persons. Five of the cities employed part-time help but only one used part-time employees exclusively. The average number of full-time employees was six.

It is estimated that between 1952 and 1961 the number of personnel in local air pollution control agencies increased by about one third,⁸⁷ one of the largest increases being recorded in California.⁸⁸ The size of the staff employed appears to be a function both of the size of the urban area served, and the age of the agency. There were 37 more local agencies in 1961 than in 1952, but, with the exception of the new agencies in California, only five of these employed more than two people.⁸⁹

Only thirty per cent of the localities polled indicated that their present staff was adequate to meet current needs, whereas 36 cities said their staff was inadequate, suggesting increases varying in size from one new employee (a 100 per cent increase) to 80 additional employees (a 25 per cent increase). The largest percentage increase suggested was 500 per cent, but this agency had only one employee. The most frequently suggested increases ranged between 30 and 50 per cent.

Size of Area Covered

The size of an area covered by an air pollution staff ranged from seven square miles to an entire state. The average area covered by a single agency was over 760 square miles, or more than 35 square miles per staff employee.

Size of Budget

Four cities could not accurately estimate their budget because it was included in the total appropriation of another department. The total budget of the 47 cities which were considered in this inquiry was \$13.8 million. This was an average of \$287,000 per city, although the mean budget of the cities surveyed was only \$84,000. Four cities had budgets in excess of \$1 million and six had budgets of \$10,000 or less. Only six of the cities said they were receiving federal aid. Fourty-six

87. STAFF OF SENATE COMM. ON PUBLIC WORKS, 88TH CONG., 1ST SESS., *STUDY OF POLLUTION—AIR 36* (Comm. Print 1963).

88. *Id.* California employed 3.6 times as many employees as in 1952.

89. PUBLIC HEALTH SERVICE, *supra* note 87.

per cent of the localities indicated that their budgets were sufficient for present purposes.⁹⁰

Although no question was asked concerning the size of employees' salaries, a recent survey revealed that the median annual salary for engineers employed by city air pollution control agencies was \$2,200 less than the median salary for all other engineers.⁹¹

Sources Presenting Substantial Problems

Localities nationally notorious for excessive air pollution were asked to list the major sources of emissions in their areas. Choices included, among others, industry, automobiles, private open burning, refuse burning and "other." Thirty-nine cities, 75 per cent of those responding, indicated that industrial sources presented a substantial problem. The industrial sources and the number of cities which felt that such sources created a major problem were: coal burning—22; chemical emissions—20; foundries—17; oil burning—15; sand and dust—four; particulates—three; building materials—two; waste fires—one; glass and fiberglass—one; paper and pulp processes—one. Ninety per cent of the cities felt, however, that industry generally cooperated with municipal control programs, and none of the cities felt that their present regulations hindered industrial operations.

Seventy-one per cent of the cities indicated that automobiles created a substantial problem; 44 per cent indicated private open burning, and 56 per cent indicated refuse burning. Other sources most often cited were: fuel burning (oil or coal); refiners; fly ash; and dust.

Most Effective Detecting Devices

a. For Smoke

Fifteen of the 38 cities responding to this specific question relied on the naked eye for the detection of smoke pollution. Fourteen cities used the Ringelmann Chart; six used the AISI system. Other methods used include the Beckman sampler, the Hi-Vol tester, the soiling index and the dust fall cans.

90. For a discussion of federal aid and the budgets of the 50 largest cities, see PUBLIC HEALTH SERVICE, STATE AND LOCAL PROGRAMS IN AIR POLLUTION CONTROL 7-8 (Public Health Service Pub. No. 1549, 1966).

91. PUBLIC HEALTH SERVICE, *supra* note 87.

b. *Detection of Other Forms of Pollution*

The devices used for the detection of air pollution other than smoke and the number of cities using each were: SO₂ candles or analyzers—six; Hi-Vol testers—five; infrared—four; eye—three; dust fall buckets—three; Beckman samplers—two; sequential samplers—two; Davis analyzers—two; nose—two; Stacy emission rate samplers—one, and fly ash and cyclonic arrestors—one.

Statutes and Ordinances

Fifty-four per cent of the cities included in the survey considered their states' present enabling acts sufficient; 33 per cent felt them to be inadequate; 12 per cent felt that they were sufficient in some areas but lacking in others, and in one per cent of the cities the enabling acts were viewed as conflicting with present municipal ordinances.

Seventy-eight per cent of the cities responding considered the present ordinances not sufficiently stringent; 19 per cent felt that their present ordinances were adequate, and three per cent indicated that their ordinances were adequate in some aspects but in need of amendment in others.