question of when a jury verdict can be impeached. It is the problem of impeachment which is relevant here.

The law on impeachment of jury verdicts is extremely complex, and a maze of various rules among jurisdictions can be found on this subject. The general rule, which developed from the case of *Vaise v. Delaval*,[113] was that a juror could not be heard to impeach his own verdict.[114] However, due to occasional injustice that resulted from this narrow approach, the Iowa rule[115] developed. The latter only prohibits impeachment of a jury's decision by the use of matters "which inhere in the verdict."[116] It is the better reasoned Iowa rule that has been incorporated into the ABA standards. Notwithstanding the inroads that could result from employment of this broader rule into the sanctity and finality of a jury verdict, the Iowa rule allows a defendant an opportunity to avoid being an unfortunate victim of a juror's misconduct. This approach is also more satisfactory in that it better insures a criminal defendant's rights[117] as to having his case heard by an impartial jury as well as confronting witnesses against him.

VI. Conclusion

The acts of juries are to be above suspicion, and any practices which brings their proceedings under suspicion are to be prohibited.[118] However, the actual demonstration of such improper conduct becomes difficult when one considers the technical rules that must be followed to show prejudicial conduct. A showing of misconduct must be timely made and it must appear to be reasonably probable that the misconduct influenced the verdict. The rights of the aggrieved party must be materially and prejudicially affected as a result of the misconduct. Furthermore, jurors may not impeach their verdict by showing matters which inhere in the verdict.

Jury misconduct also places counsel in an ethical dilemma. A lawyer should represent his client completely[119] and zealously within the bounds of the law.[120] However, after-the-fact inquiries into the possibility of impeachment of a verdict, after the jury has been discharged, may present counsel with problems[121] of an ethical nature[122] and are best dealt with in that context.

Thomas J. Bice

---

113 1 T.R. 11, 99 Eng. Rep. 944 (K.B. 1785).
114 8 Wigmore, Evidence § 2345 (McNaughten rev. 1961).
115 Wright v. Illinois & Miss. Tel. Co., 20 Iowa 195 (1866).
116 *Id.* at 210.
117 U.S. Const. amend. VI.
118 State v. Carey, 165 N.W.2d 27 (Iowa 1969).
119 ABA Code of Professional Responsibility, Canon Six.
120 ABA Code of Professional Responsibility, Canon Seven.
121 *See* Harnsberger, *Amend Canon 23 or Reverse Opinion 109*, 51 A.B.A.J. 157 (1965).
122 ABA Code of Professional Responsibility, EC 7-29.

THE AIR POLLUTION OF ELECTRIC POWER GENERATION: CLEAN AIR PROBLEMS IN IOWA

Air pollution, particularly that caused by electric generating plants, has long been recognized by the courts and legislatures as one of the problems of an urban industrial society.[1] The fight to keep the air healthful has taken many forms and has met with many responses. Seeking an injunction to abate the emission of smoke as a private nuisance was the common method of attack in the latter part of the nineteenth century.[2] Later, smoke was recognized as a nuisance by statute, and actions were brought by both public and private interests.[3] Recently, the definition of "smoke" has expanded.[4] New agencies have been created by local, state and federal legislation to deal with the polluter.[5]

Electric generating plants have long been among the most voluminous emitters of air pollution. Today such facilities still rank as the third worst source of air pollution, emitting approximately 12 percent of the total air pollution.[6] The purpose of this Note is to examine the historical development of air pollution law as related to electric generating plants and to estimate the reduction in the pollution level that can be expected in light of present technology and the most recent state and federal "clean air" laws.

I. Electric Power Generating Technology

Electric energy is produced by the rotation of turbines in generators. These turbines are rotated either by falling water (hydroelectricty) or steam. Steam

---

[1] *See, e.g.*, Matthews v. Stillwater Gas & Electric Light Co., 63 Minn. 493, 65 N.W. 947 (1896); Skelton v. Fenton Electric Light & Power Co., 100 Mich. 87, 58 N.W. 609 (1894). *See generally* Annot., 152 A.L.R. 343 (1944); Annot., 37 A.L.R. 800 (1925); Annot., 6 A.L.R. 1098 (1920).

[2] *See, e.g.*, Bowden v. Edison Electric Illuminating Co., 29 Misc. 171, 60 N.Y.S. 835 (1899); English v. Progress Electric Light & Motor Co., 95 Ala. 259, 10 So. 134 (1891). *See generally* Alabama Power Co. v. City of Guntersville, 236 Ala. 503, 183 So. 396 (1938); Martin Bldg. Co. v. Imperial Laundry Co., 220 Ala. 90, 124 So. 82 (1929); Dixie Ice Cream Co. v. Blackwell, 217 Ala. 330, 116 So. 348 (1928); De Mure v. Havranek, 153 Misc. 787, 275 N.Y.S. 186 (1934). *See also* Juergensmeyer, *Control of Air Pollution Through the Assertion of Private Rights*, 1967 Duke L.J. 1126; Note, *The Role of Private Nuisance Law in the Control of Air Pollution*, 10 Ariz. L. Rev. 107 (1968); 24 Wash. & Lee L. Rev. 314 (1967).

[3] *See, e.g.*, Northwestern Laundry v. City of Des Moines, 239 U.S. 486 (1916). *See generally* 15 Va. L. Rev. 201 (1928); 13 Colum. L. Rev. 433 (1914).

[4] People *ex rel.* Aubertel v. Consolidated Edison Co. of New York, 116 N.Y.S.2d 555 (1952); People v. Tatje, 203 Misc. 949, 121 N.Y.S.2d 147 (1953). *See generally* Note, *The Expanding Scope of Air Pollution Abatement*, 70 W. Va. L. Rev. 195 (1968).

[5] *See, e.g.*, Des Moines, Iowa Code § 24-4 enforcing § 31A-3(11) (1962). *See also* Iowa Code § 136B.1 *et seq.* (1971); 42 U.S.C. § 1857 *et seq.* (1969).

[6] Note, *Air Pollution: Causes, Sources and Abatement*, 1968 Wash. U.L.Q. 205, 211. For an extensive analysis of the N.Y.C. air pollution situation, *see* Mayor's Task Force on Air Pollution in the City of New York, The Freedom to Breathe 117 G. Chalmers, Air Pollution Control in Solid Waste Management in New York City

historically has been generated by the burning of a fossil fuel, such as coal or oil, under a boiler, thus creating smoke. Almost since the first commercial generators filled the air with this annoying substance there have been attempts to regulate it. Today it is recognized that not only should the smoke be reduced but also that the sulphur dioxide level should be decreased. Therefore, some laws are requiring that only low sulphur coal can be burned.[7]

At present, the load capacity of electric generation must double every ten years to meet new demand.[8] This means that one half of the total capacity now operating is ten years old or less. However, when this is considered in light of the fact that few plants in the United States have been closed for technological obsolescence,[9] it can be seen that these new plants do not completely eliminate their more inefficient (and consequently, more polluting) predecessors. In theory, the new plant is used as the primary source of power and the older one is used only to meet peak demands. As a matter of fact, there is a six- to seven-year lead time required for construction of a traditional steam plant, and a nine- to ten-year lead time required for construction of an atomic facility.[10] Because of the inability of plant construction to keep pace with consumer demand, the old plants are almost constantly in use.

II. Health

The nature and extent of the relationship between air pollution and health is a primary subject of controversy. Even in decisions which reject the air pollution argument, it is acknowledged that the health problem is a potentially serious one.[11] To date there has not been sufficient data developed to connect specific pollution problems to specific diseases for purposes of specific control.[12] Therefore the prevention of ill health has not been a persuasive argument for abatement, nor has air pollution's adverse effect on health been recognized as a viable decisional basis. Scientists, recognizing the complex nature both of air pollution and of disease and the multifacited effects of atmospheric chemistry vis-á-vis chemistry of the human body and that therefore no simple scientific answer or legal response is possible, have recently been urging that general controls be imposed on air polluters so that the health detriment resulting from air pollution can be ameliorated.[13] Suffice it to say that general air pollution is probably in-

---

Metropolitan Region (1968). *See also* Symposium—Air Pollution, 10 Ariz. L. Rev. 1-147 (1968).

[7] *See, e.g.* New York City Admin. Code §§ 892.20-897.20 (Supp. 1967). *See generally* Note, *Nuisance by Sulphur Fumes*, 73 Sol. J. 258 (1929).

[8] Federal Power Commission, National Power Survey 39 at 349 (1964); H. Landesberg, L. Fischmann & J. Fisher, Resources in America's Future 844 (1963).

[9] Interview with George Toyne, Asst. Gen. Mgr., Cornbelt Power Cooperative, in Humboldt, Iowa, Nov. 20, 1970.

[10] *Id.*

[11] F.P.C. v. Transwestern Pipeline Co., 36 F.P.C. 176, 65 P.U.R.3d 1 (1966).

[12] Cassell, *The Health Effects of Air Pollution and Their Implications for Control*, 33 Law & Contemp. Prob. 197 (1968); Note, *Public Health (Smoke Abatement) Act 1926*, 91 Just. P. 225 (1927).

[13] *Id.*

jurious to the general health of people, and, therefore, the control of air pollution is the proper concern of both the courts and the legislatures. Clean air is a resource requiring conservation.

III. Nuisance Law

The term "nuisance" relates to that class of wrongs which arise from the unreasonable or unlawful use by a person of his own land which produces a material annoyance, inconvenience, discomfort or hurt for which the law will recognize either actual or presumed damages.[14] Nuisances are classified as public or private, as well as nuisances *per se* or nuisances in fact (or *per accidens.*).

A. *Private Nuisance*

Although the private action is not an effective weapon today because of the failure of proof discussed *infra*, it merits analysis because it provides part of the background necessary for the understanding of both modern statutes and court policies regarding air pollution. At common law, smoke was neither included in the classification of nuisances nor embraced in the enumerated causes of such nuisances.[15] Courts of chancery and equity, however, have always exercised jurisdiction to grant relief for unnecessary annoyance, discomfort or injury caused by dense smoke on the grounds that smoke constitutes a private nuisance.[16] As early as 1895, an injunction against a power company was granted in a private nuisance action alleging that an electric generating plant interfered with sleep, comfort and health.[17] In granting the injunction, the judge remarked that the fact that defendant was in some sense a public benefactor had never been considered a sufficient reason for refusing to protect an individual whose rights were being infringed.[18]

1. The Comparative Injury/Public Convenience Theory

It is still true today that conducting a business which is a convenience to the general public affords no grounds for refusing to abate such operations

---

14 W. Prosser, Law of Torts, § 87 (3d ed. 1964).

15 People v. New York Edsion Co., 159 App. Div. 786, 144 N.Y.S. 707 (1913). *See generally* McRae, *Development of Nuisance in the Early Common Law*, 1 U. Flor. L. Rev. 27 (1948).

16 *See generally* Board of Health of Weehawken Twp. v. New York Cent. R. Co., 4 N.J. 293, 72 A.2d 511 (1950); State v. Erie R. Co., 83 N.J.L. 231, 84 A. 698 (1912); State *ex rel.* Krittenbrink v. Withnell, 91 Neb. 101, 35 N.W. 376 (1912); Calkins v. Ponka City, 89 Okla. 100, 214 P. 188 (1923). *See also* Note, *The Abatement of Smoke Nuisances*, 96 Just. P. 83 (1932); Note, *Law Relating to Smoke Abatement*, 91 Just. P. 89 (1927); Note, *Smoke Nuisance*, 71 Sol. J. 442 (1927); Note, *Smoke Abatement*, 86 Just. P. 402 (1922); Note, *What Constitutes a Nuisance*, 21 Mich. L. Rev. 105 (1922); Note, *Smoke Nuisance*, 77 Just. P. 133 (1913); 2 Dillon, Municipal Corp. § 694 (4th ed. 1890).

17 Selfer v. London Electric Lighting Co., 1 C.H. 287, 13 E.R.C. 78 (C.H. 1895).

18 *See, e.g.* Koch v. Eastern Gas & Fuel Assoc., 142 W. Va. 386, 95 S.E.2d 822 (1956); Board of Commissioners of Ohio County v. Elm Grove Mining Co., 122 W. Va. 442, 9 S.E.2d 813 (1940). *See generally*, Miller & Borchers, *Private Lawsuits and Air Pollution Control*, 56 A.B.A.J. 465 (1970); 1 Wood, Nuisances § 19 (3rd ed. 1893).

when the business constitutes a nuisance inflicting substanital and irreparable harm upon people who have no adequate remedy at law.[19] However, the courts increasingly are taking into consideration the fact that the nuisance constitutes a public convenience or necessity, and frequently refuse to grant injunctive relief[20] where it is found that the interest of the public is directly related to the cause of plaintiff's complaint.[21] Injunctive relief will be denied if the plaintiff's case is unconscionable, or he has been guilty of bad faith or has acquiesced in the nuisance.[22] Courts, generally, will refuse to exercise their discretion to issue an injunction where the balancing of hardships shows at least one of the following elements: (1) the public interest will suffer substantially by its issuance; (2) the right of plaintiff for protection is technical and insubstantial; (3) damages to the complainant from the refusal will be relatively slight; or (4) substantial redress can be afforded by payment of damages. Also, the courts have refused initial requests for injunctive relief to permit self-abatement—while maintaining juirsdiction to rule on the case if such self-help does not materialize—where electrical facilities have been found to constitute nuisances, but are, nevertheless, public conveniences or necessities.[23]

2. *Damages*

When the courts do not grant an injunction for the abatement of smoke pollution, they usually indicate that one of the reasons for their refusal is that the plaintiff has an adequate remedy at law—damages. What is the correct measure of damages, however, is still unclear. Most courts feel that where a nuisance is permanent and continuous in nature (such as the smoke from an electric generating plant), all damages should be compensated in one action.[24] The most widely accepted measure of damages in these cases is the difference betweeen the fair market value prior to the nuisance and such value after the

---

[19] *See, e.g.* U.S. v. Bishop Processing Co., 423 F.2d 469 (4th Cir. 1970); Consolidation Coal Co. v. Kandle, 105 N.J. Super. 104, 251 A.2d 295 (1969); Dept. of Health v. Owens-Corning Fiberglass Corp., 100 N.J. Super. 366, 242 A.2d 21 (1968).

[20] *See, e.g.*, Boomer v. Atlantic Cement Co., 26 N.Y.2d 219, 257 N.E.2d 870 (1970). *See generally* Note, *Balance of Convenience Doctrine*, 19 NOTRE DAME L. 360 (1944); Note, *Injunctive Relief Against Sound, Smell and Sight Nuisances, and the Doctrine of "Balance of Interests"*, 25 VA. L. REV. 465 (1939); Note, *Doctrine of Comparative Injury in Suits to Enjoin Nuisances*, 6 TEXAS L. REV. 83 (1927); 37 YALE L.J. 96 (1927); 19 MICH. L. REV. 110 (1920).

[21] Daurizio v. Merchants' Dispatch Trans. Co., 152 Misc. 716, 274 N.Y.S. 174 (1934); Miranda v. Buffalo Gen. Electric Co., 139 Misc. 532, 248 N.Y.S. 758 (1931); People v. Cooper, 200 App. Div. 413, 193 N.Y.S. 16 (1922); People v. Transit Development Co., 131 App. Div. 174, 115 N.Y.S. 297 (1909); Borough of McKees Rocks v. Rannekamp Supply Co., 344 Pa. 443, 25 A.2d 710 (1942); Price v. Philip Carey Mfg. Co., 310 Pa. 557, 165 A. 849 (1933); Elliot Nursery Co. v. Du Quesne Light Co., 281 Pa. 166, 126 A. 345 (1924). *See generally* Annot., 37 A.L.R. 800 (1925); 73 U. PA. L. REV. 208 (1925); 11 VA. L. REV. 403 (1925).

[22] Edwards v. Allouez Mining Co., 38 Mich. 46, 31 Am. R. 301 (1878). *See generally* Annot., 61 A.L.R. 924 (1929).

[23] English v. Progress Electric Light & Motor Co., 95 Ala. 259, 10 So. 134 (1891); Braender v. Harlem Lighting Co., 2 N.Y.S. 245 (1888). *See generally* Annot., 4 A.L.R.3d 902 (1965).

[24] Youngblood's Inc. v. Goebel, 404 S.W.2d 617 (Texas 1966); Parsons v. Uvalde Electric Light Co., 106 Texas 212, 163 S.W. 1 (1914). *See generally* 21 ILL. L. REV.

condition attaches.[25] The court reasoned that because the power company received the permanent benefit of a court-imposed servitude to the effect that future recovery is precluded from the plaintiff, then the company should be willing to pay permanent damages.[26] This view, however, has been criticized on the ground that such a judicial pronouncement creates a permanent impairment to private property due to a private purpose, which is contrary to the federal and most state constitutions.[27]

B. *Public Nuisance*

A "public nuisance" is defined as one which offends the public at large or such of the population as may come into contact with the annoyance while attempting to enjoy public property.[28] Because smoke was not classified as a public nuisance at common law, it was necessary for the legislatures to expand the concept by statute in order to allow prosecution. When these statutes first came into existence around the turn of the century, one of the reasons given for their enactment was that the private nuisance action was inappropriate in light of the pervasive nature of the problem. It was felt then, as now, that because there is a general public benefit from having clean air, the government should take direct responsibility for control of this problem on a permanent basis.[29] Unfortunately, "permanent," it turned out, only meant "until the public clamor subsides;" consequently, the statutes were allowed to fall into oblivion.[30] Thus, it has been necessary for the legislatures to create "new" air pollution laws during the last ten years.

1. *Constitutionality*

When the first clean air laws were proposed it was argued that such stat-

---

629 (1927); 8 MICH. L. REV. 227 (1910). *See also* Annot., 11 A.L.R.2d 277 (1950); Annot., 142 A.L.R. 1307 (1943); Annot., 139 A.L.R. 1288 (1942).

25 George v. Standard Slag Co., 431 S.W.2d 711 (Ky. 1968); Searcy v. Kentucky Utilities Co., 267 S.W.2d 71 (Ky. 1954). *See generally* 21 MINN. L. REV. 339 (1937); 13 MINN. L. REV. 625 (1929).

26 Boomer v. Atlantic Cement Co., 26 N.Y.2d 219, 257 N.E.2d 870 (1970).

27 *Id.* at 221, 257 N.E.2d at 876. *See generally* 2 CALIF. L. REV. 248 (1914).

28 W. PROSSER, LAW OF TORTS, § 89 (3d ed. 1964).

29 Boomer v. Atlantic Cement Co., 26 N.Y.2d 219, 221, 257 N.E.2d 870, 872 (1970). *See generally* Note, *Smoke Abatement, Legislation*, 161 L.T. 371 (1926); Note, *Smoke Abatement (Legislation)*, 154 L.T. 84 (1922); Note, *Right of Private Individual to Abate a Public Nuisance*, 90 CENT. L.J. 111 (1920); Note, *Smoke Prevention, (Good Rule and Government of Towns and Counties)*, 84 JUST. P. 560 (1918).

30 This does not mean that these laws were repealed. In fact, using a building which emits "noxious exhilations or offensive smells" was declared a public nuisance in the IOWA CODE of 1851 § 2759 (now IOWA CODE (1971) § 657.2(1)). Also, "dense smoke, fly ash," etc. was declared in 1911 to be a public nuisance (discussed *infra*) which was proper for cities to regulate. This later law is now found at IOWA CODE § 657.2(11) (1971). In light of the fact that the Iowa Air Pollution Control Commission is limited, under the Air Pollution Control Act, to a recovery of $200.00 per day for violation of its standards (under IOWA CODE § 136B.16 (1971)) these old nuisance laws may be used as a powerful deterrent to chronic air polluters. In comparison, the allowable penalties under the Federal law are $25,000.00 per day (or imprisonment) for the first violation and $50,000.00 per day (or imprisonment) for each subsequent violation.

utes were a valid exercise of the police power even though they placed restrictions on private property. The regulation of smoke as a public nuisance was considered in the interest of public health.[31] Iowa was one of the first states to enact legislation defining smoke to be a nuisance and consequently Iowa produced one of the first challenges to the constitutional validity of such legislation.[32] Des Moines, within the terms of a statute passed by the Iowa legislature in 1911, had passed an ordinance declaring the emission of dense smoke within the city limits to be a public nuisance punishable by fine or imprisonment.[33] The plaintiff sought to enjoin enforcement of the ordinance on the grounds that it violated the fourteenth amendment by granting unregulated discretion to an officer of the city to interfere with "the natural and lawful rights of property and occupation," and also that the ordinance should be declared void for unreasonableness.[34] The United States Supreme Court, in affirming the district court's dismissal of the action on its merits, stated that:

> So far as the Federal Constitution is concerned, we have no doubt that the State may, by itself or through an authorized municipality, declare the emission of dense smoke in cities or populous neighborhoods a nuisance and subject to refrain of such and that the harshness of such legislation, or its affect upon business interest, short of merely arbitrary enactment, are not valid constitutional objections. Nor is there any valid Federal Constitutional objection in the fact that the regulation may require the discontinuance of the use of property or subject the occupant to large expense in complying with the terms of the law or ordinance. (citing cases) That such emission of smoke is within the regulatory power of the State, has often been affirmed by the States Courts. (citing cases)[35]

2. *Problems of Enforcement*

In light of the above decision and other similar judicial pronouncements, many states and cities passed smoke abatement statutes.[36] Establishing smoke as a public nuisance, however, did not solve the problem. The smoke

---

[31] People v. New York Edison Co., 159 App. Div. 786, 144 N.Y.S. 707 (1914). *See also* West Bronx Auto Paint Shop Inc. v. City of New York, 33 Misc. 2d 29, 223 N.Y.S.2d 984 (1961); People *ex rel.* Newman v. Murray, 174 Misc. 251, 19 N.Y.S.2d 902 (1940); People v. Jones, 164 App. Div. 894, 148 N.Y.S. 983 (1914) *See generally* CANNON, SMOKE ABATEMENT: A STUDY OF THE POLICE POWER AS EMBODIED IN LAW, ORDINANCE AND COURT DECISIONS, St. Louis Public Library Monthly Bul. Aug.-Sept. 1924.

[32] Northwestern Laundry v. City of Des Moines, 239 U.S. 486 (1916). *See generally* 4 CALIF. L. REV. 416 (1916).

[33] Vol. 34, ch. 37 (1911) LAWS OF IOWA 27 (now IOWA CODE § 657.2(11) (1971).

[34] *Supra* note 32, at 487. *See generally* Note, *Vesting of Unregulated Discretion in Officers by Ordinance*, 15 COLUM. L. REV. 63 (1915).

[35] *Id.*

[36] *See, e.g.*, Bowers v. City of Indianapolis, 169 Ind. 105, 81 N.E. 1097 (1907); Field v. City of Chicago, 44 Ill. App. 410 (1892); People v. New York Edison Co., 159 App. Div. 786, 144 N.Y.S. 707 (1914). *See also* Glucose Ref. Co. v. City of Chicago, 138 F. 209 (N.D. Ill. 1905); Holman v. Athens Empire Laundry Co., 149 Ga. 345, 100 S.E. 207 (1919); McGill v. Pintsch Compressing Co., 140 Iowa 429, 118 N.W. 786 (1908); State v. Chicago, M. & St. P.R. Co., 111 Minn. 122, 130 N.W. 545 (1911); City of St. Paul v. Haugbro, 93 Minn. 59, 100 N.W. 470 (1904); City of St. Paul v. Gilfillan, 36 Minn. 298, 31 N.W. 49 (1886); State v. Tower, 185 Mo. 79, 84 S.W. 10 (1904); City of

inspector (the quasi-agency counterpart of today's Air Pollution Control Commission) was denied a substantial number of injunctions because of the compartive injury/public convenience theory.[37] In other words, when the courts examined the elements outlined above and balanced the equities, it was found that proof favoring injunction was not as great as that favoring no relief. Also, because of limited funds and personnel (again a parellel to today's situation) there was not the desired uniformity or continuity of prosecution.[38] In other words, the legislative pronouncement that smoke was a public nuisance, unaccompanied by a commitment to a positive plan of abatement, provided little more than official encouragement for the self-abatement.

IV. Modern Agencies

In recognition of the trend from the private action to a public one, a court observed:

> Since the early development of the common law conditions with respect to the kinds and use of fuel, have so materially changed that ancient doctrines on the subject have long ceased to be adequate. Now fuel is used not merely to generate heat, but to generate steam for its direct or indirect application for both heat and power purposes. The marvelous growth of our manufacturing and transportation industry and the rapidly increasing urban population congested in small areas, and the progress in scientific investigations with respect to condtions affecting health, have rendered it necessary in the interests of the public welfare to impose specific limitations and restraints upon the use of private property that were unknown to the common law.[39]

Probably the single most important reason for the failure of nuisance law to solve the air pollution problem has been the failure of proof. As indicated above, there is not yet sufficient scientific data on the relationship of health and air pollution to persuade the court to abate air pollution for specific health reasons.[40] The reasons for this failure of proof have been two-fold: (1) The inability to define what constitutes harmful air pollution and (2) the inability to relate potentially harmful contaminates to health.[41] This failure of proof was one of the primary motivating factors in the creation of pollution control agencies. Pursuant to its duty to set and enforce emission standards,[42] these agencies function to develop a data bank sufficient to support a plea for

---

St. Louis v. Heittzeberg Pack. & Prov. Co., 141 Mo. 375, 42 S.W. 954 (1897); Dept. of Health of City of New York v. Philip & William Ebling Brewing Co., 38 Misc. 537, 78 N.Y.S. 13 (1902); Oregon Box & Mfg. Co. v. Jones Lumber Co., 117 Ore. 411, 244 P. 313 (1926). *See generally* Annot., 78 A.L.R.2d 1305 (1961); Annot., 58 A.L.R. 1225 (1929); 1 Nuisances § 505 (3d ed. 1893).

37 *See* cases in note 21 *supra.*

38 *Id.*

39 People v. New York Edison Co., 159 App. Div. 786, 788, 144 N.Y.S. 707, 709 (1914).

40 *See* discussion at note 12 *supra.*

41 *Id.*

42 Iowa Code § 136B.1 (1971).

an injunction.[43] By collecting data the agency makes the polluter aware that there is a serious public concern about clean air and a public commitment to develop evidence sufficient for conviction of what amounts to a public nuisance if the polluter fails to abate the problem voluntarily. The law of nuisance has been available for the abatement of air pollution for a long time. The agency will change the nature of the plea for injunction from one based on subjective discomfort to one based on objective proof of detriment to health. This change in the evidence will not necessarily have an effect on the comparative injury/public convenience theory, but will provide a more accurate analysis of the true nature of the benefits and detriments which are presented for determination.

A. *Federal Power Commission*

One of the major reasons why coal/steam still acounts for 46 percent of the electric power generated in this country[44] is that the Federal Power Commission has continued to refuse to allow natural gas to be used as a fuel for power generation. In 1938, the Federal Power Commission was given responsibility for administering the federal portion of a comprehensive federal-state regulatory scheme intended to assure that natural gas, a wasting asset, would be allocated to uses consistent with the public interest.[45] The Federal Power Commission jurisdiction is broad, relating to all aspects of the foreign or interstate sale of natural gas.[46] Gas intended for resale by the utilities to consumers has been obtained, based on usual economic and market factors relevant to "public convenience and necessity" as that term is used in Section 7 of the Natural Gas Act of 1938.[47]

The main obstacle preventing natural gas from being used on a permanent basis as a boiler fuel is the "End Use Policy" of the Federal Power Commission. This policy is based on the Commission's asserted duty to conserve natural gas, limiting its expenditure to uses adjudged to be in the public interest. Such uses are, according to the Commission, those for which no other fuel is equivalent to gas or for which no other fuel produces the same technological or economic advantage.[48] Other end uses—including use as boiler fuel—are deemed inferior, and the necessity to conserve gas outweighs any advantage to be gained from the "inferior use."[49]

---

[43] IOWA CODE § 136B.1 *et seq.* (1971).

[44] 5 ENCYCLOPEDIA BRITANNICA 961 (1968). Natural gas is used, however, when the demand for other uses of natural gas is low. *See generally* Carver, *Pollution Control and the Federal Power Commission*, 1 NAT. RES. L. (1968).

[45] The Natural Gas Act of 1938, 15 U.S.C. § 717 *et seq.* (1969).

[46] Originally the Commission was not granted power over all incidents of gas production, transportation and sale. Its jurisdiction was materially expanded, however, by amendments in 1942, 56 Stat. 83, 15 U.S.C. § 717f(c)-(g) (1969).

[47] 15 U.S.C. § 717f(c) (1969).

[48] Rein, *Obtaining Boiler Fuel Gas to Reduce Air Pollution: The Policy of the Federal Power Commission*, 33 LAW & CONTEMP. PROB. 399, 404 (1968). Presently the use of natural gas most acceptable to the F.P.C. is for space heating.

[49] Conservation was not placed in the hands on the Commission by the 1938 Act. However, through its policy statements, 20 F.P.C. ANNUAL RPT. 79 (1940), its encourage-

Although this theory was first proposed early in the Commission's history, it was not formally recognized until 1961 when the United States Supreme Court affirmed the denial by the Federal Power Commission to sell gas to Consolidated Edison.[50] This request for natural gas as a boiler fuel focused attention on the "conventional requirements" of public convenience and necessity.[51] This is admittedly a vague concept, the test for which can only be formed by men of experience based on the adequacy of; (1) the gas reserves, (2) the market, and (3) the pipeline capacity.[52] The air pollution argument, when it was heard for the first time by the Federal Power Commission, was totally ineffective because the New York City Air Pollution Control Commissioner, who was the main witness for the air pollution proponents, concluded that there might not even be a casual relationship between emissions from the giant power producer and injury to health.[53] Another major objection by the Federal Power Commission was that this arrangement would have been a "direct" or non-jurisdictional sale. Consolidated Edison would have bought the gas at the source and then transported it to New York and, because there would be no resale in interstate commerce, the Federal Power Commission would have no jurisdiction.[54]

The Federal Power Commission's first wholesale consideration of the air pollution problem came when it was proposed that gas be used as boiler fuel in order to help alleviate the Los Angeles air pollution problem.[55] The Commission denied the certificate, stating the following reasons:

> [Although there was] considerable medical evidence that this [sulfur dioxide] air pollution may have had some delaterious effect upon the health of the residents of Los Angeles . . . the extent of the delaterious effect is a matter of dispute . . . . The additional gas would reduce the concentration of sulfur dioxide somewhat but there is no showing that using only gas in power plant boilers would have any beneficial effect on the health of the people of Los Angeles . . . . Not only has there been no such showing but under the broad public convenience and necessity requirements of the National Gas Act, this fact [air pollution] as important as it is, cannot be considered in isolation.[56]

The first of two cases to date in which the air pollution argument has been made and the Federal Power Commission has granted a certificate for use of natural gas as a permanent boiler fuel was decided on grounds other

---

ment of the 1942 amendment, *see* note 46 *supra*, and its decision in *F.P.C. v. Memphis Nat. Gas. Co.*, 44 F.P.C. 197 (1944), the F.P.C. became established as the policy organ with regard to this area.

50 F.P.C. v. Transcontinental Gas Pipe Line Co., 365 U.S. 1 (1961).

51 F.P.C. v. Transcontinental Gas Pipe Line Co. (Phase I), 21 F.P.C. 138, 141 (1958).

52 Consolidated Edison Co. of New York v. F.P.C., 271 F.2d 942, 946 (3d Cir. 1959).

53 F.P.C. v. Transcontinental Gas Pipe Line Co., 365 U.S. 1, 30 (1961).

54 F.P.C. v. Transcontinental Gas Pipe Line Co., 21 F.P.C. 839, 844 (1958).

55 F.P.C. v. Transwestern Pipeline Co., 36 F.P.C. 176, 65 P.U.R.3d 1 (1966).

56 *Id.* at 189, 190.

than air pollution. In *F.P.C. v. Florida Gas Transmission Co.*[57] the Federal Power Commission granted the certificate, basing its decision on the conventional ground that the nature of the market was such that resale customers in Florida would save at least $400,000.[58] In other words, although there would be a possible health benefit by the use of gas, the real decisional base was the economic savings. Similarly, in the Federal Power Commission's most recent published ruling on air pollution,[59] in which ten expert witnesses testified in more than a week of hearings which produced 1,000 pages of transcript, gas service was approved because it would save Consolidated Edison and its customers $850,000 or $230,000 over oil and coal, respectively.[60]

The Federal Power Commission has not added air pollution to its list of "conventional criteria," and the indication is that it will not be added to that list at least for some time. One of the arguments for refusing to acknowledge air pollution as a valid argument for the use of natural gas is that natural gas has many other uses which are more beneficial in the long run than use as a boiler fuel. For example, gas is much more appropriately used in the production of plastics and in cryogenics (low temperature) engineering. One of the statements made by a Federal Power Commission examiner in a recent unpublished decision[61] is to the effect that if it were to allow natural gas to be used now as a fuel, it would retard research for a new and better boiler fuel.

B. *Environmental Protection Agency*

The stated purposes of the Federal Clean Air Act, enacted in 1955, were:[62]

> (1) To protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population;
>
> (2) To initiate and accelerate a national research and development program to achieve the prevention and control of air pollution;
>
> (3) To provide technical and financial assistance to State and local governments in connection with the development and execution of their air pollution prevention and control programs, and;
>
> (4) To encourage and assist the development and operation of regional air pollution control programs.

In order to carry out these purposes, the Act originally provided that the Secretary of Health, Education and Welfare, through the public health service and with the advice of the Air Quality Advisory Board appointed by the President, would develop and issue to the states criteria of air quality upon which

---

[57] 37 F.P.C. 424 (1967).
[58] *Id.* at 440.
[59] F.P.C. v. Transcontinental Pipe Line Co. (Phase II), 38 F.P.C. 532, 71 P.U.R. 3d 161 (1967).
[60] *Id.* at 536, 71 P.U.R.3d at 165.
[61] F.P.C. v. Columbia Gulf Transmission Co., Docket No. CP65-102 (F.P.C. June 13, 1966).
[62] 42 U.S.C. § 1857e (1969).

they would develop standards.[63] When these standards were violated, the Act provided for conferences and public hearings involving the air pollution control agencies of the states and municipalities concerned, during which the defendant was encouraged to voluntarily abate the pollution.[64] If, after a maximum of two years' delay, the polluter had not complied with the standards, the Secretary could obtain an injunction.[65] In light of this statute the defense of comparative injury/public convenience had less effect, because during the pretrial activity the pollution would have been proven either (1) unavoidable and absolutely necessary, in which case an injunction would probably not be sought; or (2) capable of remedy, in which case an injunction would probably be granted until the situation was corrected. Another possibility in the latter situation is that because of the delays built into the statute the polluter would be able to minimize his economic loss.

Last year the Congress passed a measure entitled the "Clean Air Amendments of 1970."[66] While this bill was being considered, all the functions of the Secretary of HEW under the Clean Air Act were transferred to the Administrator of the Environmental Protection Agency by an administrative order.[67] The amendments provide the new agency with expanded powers and resources by making some significant changes in the old law. Many of these changes should have a substantial impact on air pollution by electric power generation. For example, the amendments provide that the agency will set our national ambient air standards rather than simply approve those established by the states.[68] Also, two new sections were added by the amendment regarding standards of performance for new stationary sources[69] and national emission standards for hazardous air pollutants.[70] These sections provide, in essence, that any building, structure, facility or installation which emits or may emit any air pollution cannot be built or modified in violation of the new national standards. In light of the rate of construction of new electric facilites, these amendments should effectively reduce the pollution level.

C. *Iowa Air Pollution Control Commission*

Before the creation of the National Environmental Protection Agency and the establishment of national standards under the 1970 amendments, the primary responsibility for setting and enforcing air pollution standards was in the states. It was felt that local control backed by the ultimate sanction of federal interven-

---

63 42 U.S.C. § 1857d (1969).
64 U.S. v. Bishop Processing Co., 423 F.2d 469 (4th Cir. 1970).
65 *Id.* at 473.
66 H.R. 17255, 91st Cong., 2d Sess. (1970), *amending* 42 U.S.C. § 1857 *et seq.* (1969).
67 H.R. REP. No. 91-1783 at 42, 91st Cong., 2d Sess. (1970). The change was actually accomplished pursuant to Dept. of Health, Education and Welfare Reorg. Plan No. 3 of 1970.
68 H.R. REP. No. 91-1783, at 14, 91st Cong., 2d Sess. (1970).
69 *Id.* at 9.
70 *Id.* at 10.

tion would be the most effective way to meet pollution problems in light of geographic differences. Responding to this philosophy, the Iowa legislature established the Iowa Air Pollution Control Commission, which has the power and duty to develop standards for control and plans for abatement of local air pollution.[71] Pursuant to this legislative mandate, the Commission has formulated stack emission standards consistent with the national critieria for air quality promulgated under the Federal Clean Air Act.[72] Several provisions in the Iowa "Rules and Regulations relating to Air Pollution Control" have a direct bearing on electric power generation facilities. First, except when starting a new fire or cleaning a plant system, these facilities may not emit smoke in excess of a specific level.[73] Second, in order for any person or corporation to "construct, install, reconstruct or alter any equipment" a permit must be obtained from the Air Pollution Commission stating that the equipment would operate within the established technical standards.[74] Finally, there are specific standards set for power generation facilities and monitoring equipment to apply these standards to the power producers.[75] The Commission staff has collected data during a period of approximately one year. The Attorney General has obtained a $100 fine and a permanent injunction in the only action for violation of its open burning standards.[76]

V. Conclusions

As was anticipated by the Federal Power Commission when it decided not to allow the use of natural gases as primary boiler fuels, other fuels have been developed. For example, the suburb of Northwest Stadt in Germany has developed a highly efficient particulate trapping stack, with 700 tons of garbage a day running into an incinerator beneath it.[77] Water tubes and furnace walls of this plant generate steam and produce light and heat for 40,000 people. In addition to this incinerator experiment, research is being done with the production and burning of ammonia as a fuel.[78] Ammonia can be made from many fossil fuels and has the advantage of producing water as a by-product when it is burned. Experiments with methanol have yielded similar results.[79] Another virtually untouched source of pollution-free fuel is the natural steam which underlies large tracts of the public domain.[80] Probably the single greatest source of power in the future is atomic energy.[81] Although there are pollution prob-

---

71 Iowa Code § 136B.3 (1971).
72 Iowa Departmental Rules (1966), Jan. 1969 Supp. at 23-25.
73 Iowa Rules & Regulations Relating to Air Pollution Control § 4.3(3) (1969).
74 *Id.* §§ 3.1(1) and 5.1(1).
75 *Id.* § 4.3(2)(b).
76 Des Moines Register, March 13, 1971, at 6, col. 1.
77 National Geographic, Dec., 1970 at 768.
78 Scientific American, Aug., 1967 at 39.
79 Science News Letter, Sept. 18, 1965 at 185.
80 Wall St. Journal, Dec. 10, 1970, at 1, col. 1.
81 H. Landesberg, L. Fischmann, & J. Fisher, Resources in America's Future 844 (1963).

lems surrounding the use of atomic energy, they are minimal when compared with the amount of energy that can be created.

Current estimates of the total damage inflicted on the nation and the world by air pollution are totally unreliable, and the prospects for more acceptable estimates are not good. The statistics do, however, show that there is some harm related to air pollution and also that the existence of the problem cannot rationally be ignored. Therefore, in order to allow the government and others to make valid long-range policy decisions, then more effort should be made to collect usable data.

Air pollution cannot be studied, controlled or even affected in isolation; it is but one of a number of interrelated problems affecting the quality of the environment, the political system and the economic structure. Recognizing this need for research coordination, the Clean Air Amendments of 1970 should provide significant economy by eliminating duplication of effort between state and federal agencies. Policies for the control of air pollution are going to be developed by the Environmental Protection Agency as the result of overall research and of planning for improvement of the quality of the total environment.[82] A cue apparently has been taken from the "end use theory" of the Federal Power Commission so that no resource (they are all limited) be allowed to be employed in an inferior use.

As the courts continually point out in this and other areas, there must, in a functional society, be a balancing of interests if total output is to be maximized. Where the air pollution detriment became so great as to outweigh the benefit, the nuisance was abated, but where the damage was not irreparable, progress was allowed to cause a slight annoyance.[83] Therefore, a more accurate and forthright statement of the interests involved and the priorities of policy should be made.

In the area of electric power generation, the policies of the power companies and the fuel companies should be analyzed in light of total national welfare. Specifically, the price of coal has increased substantially in the last year, and the United States was faced with a coal shortage.[84] In light of the Federal Power Commission's expressed willingness to allow the use of natural gas as a boiler fuel if there will be an economic benefit to the consumer, it would appear that such an increase in the price of coal would generate benefit by the use of gas vis-á-vis the use of coal, and thereby increase the Federal Power Commission's propensity for granting of gas permits for boiler fuel. Gas prices would also then rise because of increased demand by the electric power companies and the homeowner who now has preference in the use of natural gas for heating may find that electric heat will become more economical. In light of the ownership

---

82 H.R. REP. No. 91-1783 at 1-3, 91st Cong., 2d Sess. (1970).
83 *See* notes 19-26 *supra.*
84 Time, Aug. 31, 1970 at 62; Fortune, Nov., 1970 at 75.

of the coal companies by oil companies in the United States,[85] there is serious question as to the real public welfare served and the true economic interest benefited.

"The business of America is business."[86] Although air pollution agencies exist on all levels of government they have not yet shown themselves to be effective in ameliorating air pollution (as neither the private and earlier public nuisance actions) where substantial economic interests are involved. It is unlikely that this pattern will change. Consequently, all that can be hoped for is that the agencies will be able to tip the balancing process toward more reasonable uses of the limited natural resources by their counseling, supervision and regulation.

RICHARD C. RASTETTER, JR.

---

[85] Wash. Post, Aug. 22, 1970; Forbes, March 15, 1968 at 68; Business Week, Aug. 23, 1969, at 64.

[86] Address by Calvin Coolidge, The Society of American Newspaper Editors, Jan. 17, 1925.

Case Notes

CRIMINAL LAW—THE IOWA ABORTION STATUTE IS NOT UNCONSTITUTIONALLY VAGUE AND DOES NOT DENY EQUAL PROTECTION.—*State v. Abodeely* (Iowa 1970).

The defendant was charged with aiding and abetting an attempt to produce an abortion. The defendant, one of three men involved in the crime, referred a woman to a physician who performed the abortion. Defendant pled guilty in district court and was sentenced to five years in the penitentiary and fined $100 plus costs. His motion in arrest of judgment and to vacate sentence was overruled. He appealed to the Supreme Court of Iowa alleging *inter alia* that Section 701.1[1] of the Code of Iowa, which makes abortion a crime, is unconstitutional because it is vague and denies him equal protection. *Held*, affirmed. Section 701.1 is not vague or uncertain and does not deny equal protection to the defendant. *State v. Abodeely*, 179 N.W.2d 347 (Iowa 1970). A petition for rehearing was subsequently submitted and denied.

The crucial portion of the statute in question is the phrase "unless such miscarriage shall be necessary to save her life,"[2] which is the only exception to the prohibition of abortion which Iowa allows. The Iowa court in this case reasoned that this wording is not vague or uncertain because it has for over 100 years been sufficiently clear for "satisfactory use."[3] It also pointed out[4] that no other state with a similar statute, except California,[5] had declared its statute unconstitutional.

The defendant also claimed that since the statute uses the words "any person,"[6] it should apply equally to laymen and doctors. But the Iowa court has held before that physicians acting on their examination and opinion are entitled to a presumption of correct judgment and good faith.[7] In *Abodeely* the court reaffirmed this interpretation stating it is not "unreasonable nor arbitrary" to allow a presumption of good faith and correct judgment and hence special excep-

---

[1] IOWA CODE § 701.1 (1966) reads as follows:

If any person, with intent to produce the miscarriage of any woman, willfully administer to her any drug or substance whatever, or, with such intent, use any instrument or other means whatever, unless such miscarriage shall be necessary to save her life, he shall be imprisoned in the penitentiary for a term not exceeding five years, and fined in a sum not exceeding one thousand dollars.

[2] *Id.*

[3] State v. Abodeely, 179 N.W.2d 347, 354 (Iowa 1970).

[4] *Id.*

[5] People v. Belous, 80 Cal. Rptr. 354, 458 P.2d 194 (1969), *cert. denied*, 397 U.S. 915 (1970).

[6] IOWA CODE § 701.1 (1966).

[7] State v. Dunklebarger, 206 Iowa 971, 974, 221 N.W. 592, 594 (1928).