Nuclear Power Regulation: Defining the Scope of State Authority

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Use of nuclear power to meet the nation's energy needs has been advocated since the end of World War II. Greater attention has recently been concentrated on nuclear power as a source of energy, due in part to the 1973 Arab oil embargo and the energy crisis. Indeed, nuclear power production has advanced to where it now satisfies a noticeable portion of the nation's energy needs. As of December 31, 1976, there were fifty-nine nuclear power plants with operating licenses accounting for close to 10% of the United States' electrical generating capacity.[1] With the addition of 178 plants which are now in various stages of completion, nuclear power will represent 49% of the nation's supply of electricity.[2] The growth and use of nuclear power, however, has been accompanied by public hostility.[3] Opposition has centered on environmental problems, nuclear wastes, potential reactor accidents, governmental liability, and terrorism.[4] Nuclear safe-

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1. *Industry Report 1976-77*, NUCLEAR NEWS BUYERS GUIDE, Mid-Feb., 1977, at 33.

2. R. Campana & S. Langer, Nuclear Power and the Environment, at 4 (Apr. 1976) (published by the American Nuclear Society). These figures translate into more than one new plant per month beginning operation over the next 10 years.

3. Several challenges already have been made in the courts. *See, e.g.*, Northern Indiana Pub. Serv. Co. v. Izaak Walton League, 423 U.S. 12 (1975) (reversing Izaak Walton League v. Atomic Energy Comm'n, 515 F.2d 513 (7th Cir. 1975), which had set aside issuance of a permit for construction of a nuclear power plant because the Atomic Energy Commission had not followed its own siting regulations); Natural Resources Defense Council, Inc. v. United States Nuclear Regulatory Comm'n, 539 F.2d 824 (2d Cir. 1976), *cert. granted sub nom.* Allied-General Nuclear Servs. v. Natural Resources Defense Council, Inc., — U.S. —, 97 S. Ct. 1578 (1977) (successful challenge of Nuclear Regulatory Commission order permitting construction of nuclear separation and reprocessing facilities, conversion of light water nuclear reactors to mixed oxide fuel reactors, and the implementation of interim safeguards for the transportation of highly toxic nuclear material as violations of the National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321-4347 (1970 & Supp. V 1975)); Nader v. Nuclear Regulatory Comm'n, 513 F.2d 1045 (D.C. Cir. 1975) (environmentalists unsuccessfully sought to have several nuclear plants shut down or have their power output reduced below design level because the effectiveness of the reactor emergency core cooling systems had not been adequately established under the Atomic Energy Commission's own regulations).

4. *See, e.g.*, Natural Resources Defense Council, Inc. v. United States Nuclear Regulatory Comm'n, 547 F.2d 633 (D.C. Cir. 1976), *cert. granted sub nom.* Vermont

guards initiatives received sufficient public support to be placed on the ballots in six states for the November 2, 1976 general election.[5] The initiatives, all of which were defeated, generally would have required utilities to assume unlimited liability in the event of a nuclear accident and would have imposed stringent safety requirements, differing from state to state.[6] In response to the apparently growing concern, several states have recently passed legislation which could have a significant effect on the continued use of nuclear power.[7] From its inception, however, nuclear power has been regulated almost exclusively by the federal government.[8] This regulatory power was vested in the Atomic Energy Commission [AEC] by the Atomic Energy Act of 1954.[9] State attempts to regulate nuclear power thus pose potential conflicts with the federal government's legislated powers.

Yankee Nuclear Power Corp. v. Natural Resources Defense Council, Inc., — U.S. —, 97 S. Ct. 1098 (1977); Calvert Cliffs' Coordinating Comm., Inc. v. United States Atomic Energy Comm'n, 449 F.2d 1109 (D.C. Cir. 1971); Northern States Power Co. v. Minnesota, 447 F.2d 1143 (8th Cir. 1971), *aff'd*, 405 U.S. 1035 (1972); Connolly, *Nuclear Technology and the California Nuclear Initiative*, in STANFORD UNIV. INSTITUTE FOR ENERGY STUDIES, THE CALIFORNIA NUCLEAR INITIATIVE 65, 81-88, 100-02 (W. Reynolds ed. 1976) [hereinafter cited as CALIFORNIA NUCLEAR INITIATIVE]; Palfrey, *Energy and the Environment: The Special Case of Nuclear Power*, 74 COLUM. L. REV. 1375, 1378 (1974); Note, *Malevolent Acts and Nuclear Power: Additional Protection Under NEPA and the Energy Reorganization Act of 1974*, 16 ARIZ. L. REV. 920 (1974).

5. *See* NUCLEAR NEWS, Dec., 1976, at 30 (published by the American Nuclear Society).

6. TIME, Nov. 15, 1976, at 57. A similar initiative had previously been defeated in California in June, 1976. TIME, June 21, 1976, at 62-63. In Missouri, an initiative which prevents utilities from passing on power plant costs to ratepayers during construction, and which was felt to be directed against nuclear plants, did receive voter approval. NUCLEAR NEWS, *supra* note 5. The defeat of all of the other initiatives may be explained in either of two ways. One is that the initiative proponents had far smaller campaign funds than their opposition. TIME, Nov. 15, 1976, at 57. Another possibility is that the voters did not want to impose stringent restrictions on the use and development of nuclear power. *See* TIME, June 21, 1976, at 62-63.

7. *See, e.g.*, ch. 194, §§ 1-2, ch. 195, §§ 1-2, ch. 196, §§ 1-2, 1976 Cal. Legis. Serv. 489 (codified at CAL. PUB. RES. CODE §§ 25524.1-.3 (West Supp. 1976)); ch. 552, §§ 36-39, ch. 606, §§ 21-23, 25-45, 1975 Or. Laws 1237 (codified at OR. REV. STAT. §§ 453.305-.590 (1975)); no. 23, § 1, 1975 Vt. Acts (codified at VT. STAT. ANN. tit. 30, § 248(c) (Supp. 1976)).

Under the California legislation, licensing of new nuclear plants is prohibited until the Federal Nuclear Regulatory Commission [NRC] approves the technology for reprocessing spent fuel rods, CAL. PUB. RES. CODE § 25524.1(a) (West Supp. 1976), and certifies the existence of a demonstrated technology for long term disposal of radioactive wastes. *Id.* § 25524.2(a). A review of these findings must be made by the State Energy Resources Conservation and Development Commission and the state legislature. *Id.* § 25524.1(a), .2(a). The law also prohibits construction of new nuclear plants until the feasibility of underground construction has been studied. *Id.* § 25524.3. The Oregon law gives a state agency the authority to regulate location of new plants and transportation of radioactive materials. OR. REV. STAT. §§ 453.305-.590 (1975). Rules on radiation releases, safety procedures associated with radioactive materials, and monitoring of radioactive wastes are to be promulgated. *Id.* §§ 453.505-.515. The Vermont statute requires state legislative approval before nuclear plants can be built within the state. VT. STAT. ANN. tit. 30, § 248(c) (Supp. 1976).

8. *See* Northern States Power Co. v. Minnesota, 447 F.2d 1143, 1147-52 (8th Cir. 1971), *aff'd*, 405 U.S. 1035 (1972); Estep & Adelman, *State Control of Radiation Hazards: An Intergovernmental Relations Problem*, 60 MICH. L. REV. 41, 42 (1961).

9. Ch. 1073, 68 Stat. 919 (codified as amended at 42 U.S.C. §§ 2011-2296 (1970 & Supp. V 1975)). As a result of subsequent amendments, the AEC has been superseded by the NRC.

In cases of conflict between federal and state law, the supremacy clause directs that federal law shall control.[10] States may regulate certain aspects of nuclear power under provisions of the 1954 Act[11] and its 1959 amendent.[12] These provisions have preserved the authority of state and local governments to establish procedures for the control of nonradiation hazards and regulate the generation, sale, and transmission of electric power. Yet, even where states attempt to regulate nuclear power based on these provisions, the problem of conflict with federal law remains a vital concern.[13]

This Note will define the permissible scope of state regulation of nuclear power plants. To this end, federal legislation in the nuclear power field will first be examined to determine the legislative intent with regard to state regulation. With this background, the doctrine of federal preemption and the competing power of the states to protect and promote the public welfare of their citizens can be examined. Finally, and most importantly, those aspects of state regulation which should not be subject to preemption will be presented.

STATUTORY REGULATION OF ATOMIC ENERGY

When atomic energy was first developed during World War II, it was controlled by the federal government in secrecy.[14] This exclusive control was continued under the Atomic Energy Act of 1946.[15] At that time a civilian agency, the AEC, was given full responsibility for control of the development of nuclear energy.[16] Private industry participation was limited to contractual work performed for the AEC.[17]

10. This is known as the preemption doctrine. For a discussion of the basis, meaning, and application of this doctrine, see text & notes 46-90 *infra*. *See generally* Abraham & Loder, *The Supreme Court and the Preemption Question*, 53 KY. L.J. 289 (1965); Hirsch, *Toward A New View of Federal Preemption*, 1972 U. ILL. L.F. 515; Note, *The Preemption Doctrine: Shifting Perspectives on Federalism and the Burger Court*, 75 COLUM. L. REV. 623 (1975); "Federal Preemption of State Control Over Aircraft Flight," 15 ARIZ. L. REV. 593, 650 (1973).

11. Atomic Energy Act of 1954, ch. 1073, § 271, 68 Stat. 960 (codified as amended at 42 U.S.C. § 2018 (1970)).

12. Act of Sept. 23, 1959, Pub. L. No. 86-373, § 274, 73 Stat. 688 (codified as amended at 42 U.S.C. § 2021 (1970)).

13. See text & notes 208-64 *infra*.

14. The secrecy was necessitated by the nature of the development work being carried out during the War—the development of atomic weapons. Barton & Meyers, *The Legal and Political Effects of the California Nuclear Initiative*, in CALIFORNIA NUCLEAR INITIATIVE, *supra* note 4, at 1, 2-4; Miller, *A Law is Passed—The Atomic Energy Act of 1946*, 15 U. CHI. L. REV. 799, 801-02 (1948). For a comprehensive review of federal legislation dealing with atomic energy, see Murphy & La Pierre, *Nuclear "Moratorium" Legislation in the States and the Supremacy Clause: A Case of Express Preemption*, 76 COLUM. L. REV. 392, 394-415 (1976).

15. Ch. 724, 60 Stat. 755 (codified as amended in scattered sections of 42 U.S.C.).

16. *See id.* § 3, 60 Stat. 758 (codified as amended at 42 U.S.C. §§ 2051-2053 (1970)); Murphy & La Pierre, *supra* note 14, at 395.

17. Atomic Energy Act of 1946, ch. 724, § 4, 60 Stat. 759 (codified as amended at 42 U.S.C. §§ 2061-2064 (1970)); Murphy & La Pierre, *supra* note 14, at 395.

The Soviet Union's successful testing of atomic weapons by the early fifties eroded the underlying basis for strict secrecy.[18] Also at that time private utilities were becoming concerned that this new source of power would be limited to governmental use alone.[19] These developments provided the stimulus for the Atomic Energy Act of 1954,[20] one of the purposes of which was to encourage the private development of nuclear reactors to generate electricity.[21] Under the 1954 Act, private enterprise was permitted to participate in the development and use of atomic energy as licensees of the AEC;[22] licensees could lease nuclear fuel from the government and construct and operate nuclear reactors pursuant to AEC regulatory requirements.[23] Licenses were to be issued on a finding that the applicant satisfied standards of public health, safety, and national security.[24]

One aspect of nuclear power which the 1954 Act expressly reserved to the states was control of the generation, sale, and transmission of electric power.[25] With no other clarification of the states' role in regulating nuclear power, some concern developed in the states as private industry embarked on construction of atomic power facilities and use of nuclear fuel.[26] These concerns centered on protection of the public health and safety.[27] Accordingly, many states either adopted radiation protection standards or enacted legislation providing for such adoption.[28] The standards generally applied to all nuclear activities

18. *See* Barton & Meyers, *supra* note 14, at 4.

19. *Id.*

20. Ch. 1073, 68 Stat. 919 (codified as amended at 42 U.S.C. §§ 2011-2296 (1970 & Supp. V 1975)).

21. *Id.* § 3 (codified as amended at 42 U.S.C. § 2013 (1970)).

22. *Id.* §§ 101-110, 68 Stat. 936-39 (codified as amended at 42 U.S.C. §§ 2131-2140 (1970)).

23. *Id.* §§ 53, 63, 81, 101, 68 Stat. 930, 933, 935, 936 (codified as amended at 42 U.S.C. §§ 2073, 2093, 2111, 2131 (1970 & Supp. V 1975)).

24. *Id.* §§ 53(e)(7), 69, 81, 103(b), (d), 104(a)-(d), 68 Stat. 931, 934-38 (codified as amended at 42 U.S.C. §§ 2073(e)(7), 2099, 2133(b), (d), 2134(a)-(d) (1970)). In providing for consideration of public health and safety, Congress was utilizing its powers of defense, commerce, and control of federal property, *id.* § 2, 68 Stat. 921-22 (codified as amended at 42 U.S.C. § 2012 (1970)), to gain control of an area traditionally the concern of states. See text & notes 131-42 *infra.*

25. Atomic Energy Act of 1954, ch. 1073, § 271, 68 Stat. 960 (codified as amended at 42 U.S.C. § 2018 (1970)). Congress amended section 271 in 1965 to provide that states could not use their utility rates and services power to regulate, control, or restrict AEC activities. Act of Aug. 24, 1965, Pub. L. No. 89-135, 79 Stat. 551 (codified at 42 U.S.C. § 2018 (1970)). This amendment resulted from the decision in Maun v. United States, 347 F.2d 970 (9th Cir. 1965), where the court ruled that the statute precluded the AEC from installing an overhead electric transmission line in violation of certain town and county ordinances. *Id.* at 978. *See* Murphy & La Pierre, *supra* note 14, at 407-08.

26. *See* Esgain, *State Authority and Responsibility in the Atomic Energy Field*, 1962 DUKE L.J. 163, 166. *See also* Dunlavey, *Governmental Regulation of Atomic Energy*, 105 U. PA. L. REV. 295, 344-48 (1957).

27. *See Hearings on Federal-State Relationships in the Atomic Energy Field Before the Joint Comm. on Atomic Energy*, 86th Cong., 1st Sess. 127-29 (1959) (statement of Lee M. Hydeman) [hereinafter cited as *1959 Hearings*]; Esgain, *supra* note 26.

28. *See* Esgain, *supra* note 26, at 169. By May of 1959, 12 states had adopted

within the state and in some cases were inconsistent with the AEC regulations.[29] However, few conflicts actually arose. States rarely enforced their regulations against AEC licensees because they lacked adequate personnel and experience.[30] Nonetheless, this type of activity demonstrated a need to define the states' role more clearly.

Two other enactments round out the federal statutory scheme for the regulation of nuclear power. In 1959 Congress amended the 1954 Act to provide for state assumption of certain AEC responsibilities.[31] Under the amendment, the AEC was authorized to enter into agreements with the states for the transfer of regulatory authority over byproduct materials,[32] source materials,[33] and special nuclear materials[34] in quantities not sufficient to form a critical mass.[35] The objective of state regulation was to provide protection of the public health and safety from radiation hazards.[36] The scope of the agreements, however, was limited so as not to include regulation of the construction and operation of a production or utilization facility.[37] An important qualification was also placed upon the scope of federal regulation. The amendment specifically added section 274(k), which provides: "Nothing in this section shall be construed to affect the authority of any State or local agency to regulate activities for purposes other than protection against radiation hazards."[38] The final piece of legislation of interest here is the Energy Reorganization Act of 1974.[39] The 1974

standards and 18 more were proceeding in that direction. *Id. E.g.*, ch. 281, §§ 1-8, 1955 N.H. Laws, 428 (amended 1961); § 1, 1957 Ohio Laws 270 (amended 1959); ch. 324, §§ 1-5, 1957 Tenn. Pub. Acts 1135 (amended 1961); Esgain, *supra*; *see* Frampton, *Radiation Exposure—The Need for a National Policy*, 10 STAN. L. REV. 7, 29-40 (1957).

29. One area of inconsistency concerned the federal regulations dealing with human exposure limits. *1959 Hearings*, *supra* note 27, at 129. Further, the state legislation did not recognize any areas, such as nuclear power plant operation, where federal authority would control. *Id.*

30. Esgain, *supra* note 26, at 170-71.

31. Act of Sept. 23, 1959, Pub. L. No. 86-373, § 274, 73 Stat. 688 (codified as amended at 42 U.S.C. § 2021 (1970)).

32. 42 U.S.C. § 2014(e) (1970) (defining "byproduct materials").

33. *Id.* § 2014(z) (defining "source materials").

34. *Id.* § 2014(aa) (defining "special nuclear materials").

35. *Id.* § 2021(b). A state may protect the public health and safety through formulation and enforcement of radiation standards. *Id.* § 2021(b), (g). Such standards must, however, be compatible with existing AEC standards. *Id.* § 2021(g). Certain inspection functions may also be delegated. *Id.* § 2021(i).

36. *See* S. REP. No. 870, 86th Cong., 1st Sess. 8-9 (1959), *reprinted in* [1959] U.S. CODE CONG. & AD. NEWS 2872, 2878-79.

37. 42 U.S.C. § 2021(c) (1970). For definitions of "production facility" and "utilization facility," see *id.* § 2014(v), (cc). The Commission likewise cannot delegate the power to regulate the importation, exportation or disposal of byproduct, source, or special nuclear materials. *Id.* § 2021(c). Certain administrative requirements were also added which served to qualify the permissible scope of an AEC-state agreement. *Id.* § 2021(i)-(j), (l)-(m).

38. *Id.* § 2021(k). For a discussion of the term "radiation hazards," see note 45 *infra*.

39. Pub. L. No. 93-438, 88 Stat. 1234 (codified at 42 U.S.C. §§ 5801-5891 (Supp. V 1975)).

Act was designed in part to eliminate the potential conflict of interest in the AEC's role as both promoter and regulator of the use and development of nuclear energy.[40] In 1974 the AEC was divided into two agencies; the Nuclear Regulatory Commission [NRC], which inherited the regulatory and licensing functions, and the Energy Research and Development Agency [ERDA], which assumed the research and development functions.[41]

To summarize the relevant bases underlying federal atomic energy legislation, it is first noted that Congress had several reasons for passing the 1954 Act. It intended, in part, to encourage the development and utilization of atomic energy for peaceful purposes through participation of private industry.[42] This objective was qualified in that such development and utilization had to be consistent with the common defense and security, and the protection of the health and safety of the public.[43] The 1959 amendment was designed to provide guidelines for state involvement in the wake of active attempts by several states to control nuclear power. Under the 1959 amendment, the AEC was forbidden to enter into agreements concerning the regulation of the construction and operation of nuclear power plants.[44] However, the application of this language has been limited by regulations and case law to radiological health and safety concerns.[45] Nuclear power became available to private industry under this federal legislation. It is to this federal legislation that one must look to determine what aspects of nuclear

40. *See* Marshall v. Consumers Power Co., 65 Mich. App. 237, 257-58, 237 N.W.2d 266, 279-280 (1975); S. REP. No. 93-980, 93d Cong., 2d Sess. 2 (1974), *reprinted in* [1974] U.S. CODE CONG. & AD. NEWS 5470, 5471.

41. Energy Reorganization Act of 1974, Pub. L. No. 93-438, §§ 104(a)-(b), 201 (f), 88 Stat. 1237 (codified at 42 U.S.C. §§ 5814(a)-(b), 5841(f) (Supp. V 1975)). In August 1977, the functions of ERDA were transferred to the newly created Department of Energy. Department of Energy Organization Act, Pub. L. No. 95-91, § 301(a), 91 Stat. 577 (to be codified at 42 U.S.C. § 7151).

42. Atomic Energy Act of 1954, ch. 1073, § 3, 68 Stat. 922 (codified as amended at 42 U.S.C. § 2013(d) (1970)). Encouraging the development of nuclear power was also one of the reasons for the enactment of the Price-Anderson Act in 1957. Act of Sept. 2, 1957, Pub. L. No. 85-256, § 4, 71 Stat. 576 (codified as amended at 42 U.S.C. § 2210 (1970)). The function of the Price-Anderson Act is to provide compensation to those who might be injured in the event of a nuclear incident. *Id.*; see discussion note 191 *infra.*

43. Atomic Energy Act of 1954, ch. 1073, § 3, 68 Stat. 922 (codified as amended at 42 U.S.C. § 2013(d) (1970)).

44. Act of Sept. 23, 1959, Pub. L. No. 86-373, § 274(c)(1), 73 Stat. 689 (codified as amended at 42 U.S.C. § 2021(c)(1) (1970)).

45. Marshall v. Consumers Power Co., 65 Mich. App. 237, 252-53, 237 N.W.2d 266, 277-78 (1975); 10 C.F.R. § 8.4(j) (1977). The term "radiation" is defined as "alpha rays, beta rays, gamma rays, X-rays, neutrons, high-speed electrons, high-speed protons, and other atomic particles; but not sound or radio waves, or visible, infrared, or ultraviolet light." *Id.* § 20.3(a)(12). The term "hazards," however, is not defined either in the 1959 amendment or the regulations. Since the regulations themselves are replete with reference to public health and safety, it is reasonable to conclude that "hazards" refers to the dangers of radiation to public health and safety. *Cf. id.* § 50.40(c) (license cannot be issued where inimical to the public health and safety).

power are subject to state regulation. Prior to making this assessment, however, it is necessary to examine the doctrine of preemption.

Federal Preemption

When Congress legislates pursuant to its delegated powers, the supremacy clause of the Constitution[46] directs that any conflicting state law must yield.[47] This has come to be known as the preemption doctrine.[48] A state law is preempted when it stands as "an obstacle to the accomplishment and execution of the full purposes and objectives of Congress."[49] In making its determination, the court must examine whether Congress, when it acted, intended to reach and invalidate the type of state measure under scrutiny.[50] The court begins its analysis with a presumption against preemption.[51]

Preemption can be either express or implied.[52] Express federal

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46. U.S. CONST. art. VI, cl. 2 provides:
> This Constitution, and the laws of the United States which shall be made in Pursuance thereof; and all Treaties made, or which shall be made, under the Authority of the United States, shall be the supreme Law of the Land; and the Judges in every State shall be bound thereby, any Thing in the Constitution or Laws of any State to the Contrary notwithstanding.

47. *See, e.g.*, New York State Dep't of Social Servs. v. Dublino, 413 U.S. 405, 413 (1973); Hines v. Davidowitz, 312 U.S. 52, 66 (1941); Gibbons v. Ogden, 22 U.S. (9 Wheat.) 1 (1824). In *Gibbons* the Court, in an opinion by Chief Justice Marshall, overturned a New York statute granting an individual the exclusive right to use steam navigation on the waters within the state. Because this statute was contrary to a federal license granting Gibbons permission to engage in coastal trade, Marshall declared the state law null and void. *Id.* at 92-93.

48. *See, e.g.*, Motor Coach Employees v. Lockridge, 403 U.S. 274, 286 (1971); Huron Portland Cement Co. v. City of Detroit, 362 U.S. 440 (1960); Note, *supra* note 10, at 623-24.

49. Hines v. Davidowitz, 312 U.S. 52, 67 (1941). The Court in *Hines* cited the various expressions which it had previously used in preemption cases, including "conflicting; contrary to; occupying the field; repugnance; difference; irreconcilability; inconsistency; violation; curtailment; and interference." *Id.* Such variation in terminology was recognition by the Court that preemption cases were too variable to all be resolved under the same rule. *Id.*

In Florida Lime & Avocado Growers, Inc. v. Paul, 373 U.S. 132 (1963), the Court expanded on this formulation by stating: "The test of whether both federal and state regulations may operate, or the state regulation must give way, is whether both regulations can be enforced without impairing the federal superintendence of the field, not whether they are aimed at similar or different objectives." *Id.* at 142. A state law can be held void, therefore, even if enacted for some valid purpose and not intended to frustrate federal law. Goldstein v. California, 412 U.S. 546, 561 (1973); Perez v. Campbell, 402 U.S. 637, 651-52 (1971); Northern States Power Co. v. Minnesota, 447 F.2d 1143, 1147 (8th Cir. 1971), *aff'd*, 405 U.S. 1035 (1972); Murphy & La Pierre, *supra* note 14, at 437; Note, *supra* note 10, at 624.

50. *See* Hirsch, *supra* note 10, at 538-42.

51. In Florida Lime & Avocado Growers, Inc. v. Paul, 373 U.S. 132 (1963), the Court noted that a federal statute is presumed not to be preemptive unless Congress "unmistakably so ordained," *id.* at 142, or "the nature of the regulated subject matter permits no other conclusion." *Id.* The former situation can be said to describe express preemption, while the latter is an important consideration relative to implied preemption cases. See text & notes 62-86 *infra*.

52. *See* Motor Coach Employees v. Lockridge, 403 U.S. 274, 286 (1971) (implied preemption); Carson v. Roane-Anderson Co., 342 U.S. 232, 234-36 (1952) (express preemption).

preemption occurs when Congress expressly provides for exclusive federal dominion.[53] In such cases the court must interpret the scope of the preemption clause to see if it reaches the state law.[54] The operative scope of the federal statute can best be determined if the congressional intent relative to preemption is known.[55] In enacting legislation with an express preemption clause, Congress obviously is not in a position to anticipate all possible state measures which may create preemption problems.[56] If the court mechanistically applies the preemption language, the result may be one which does not effect the true congressional purpose.[57] For this reason, congressional intent is important, and must be examined even in express preemption cases.[58] Where a state has enacted a statute or regulation based on its historic police powers,[59] the court requires a clear and manifest congressional purpose to preempt.[60] This requirement imposes an even greater need

53. *See, e.g.*, Railway Employes' Dep't v. Hanson, 351 U.S. 225, 233 (1956); Carson v. Roane-Anderson Co., 342 U.S. 232, 234 (1952); Rice v. Santa Fe Elevator Corp., 331 U.S. 218, 230 (1947). Congress may also "save" state regulation from preemption by explicitly providing for concurrent federal-state jurisdiction. *See, e.g.*, Askew v. American Waterways Operation Co., 411 U.S. 325, 343-44 (1973); Prudential Ins. Co. v. Benjamin, 328 U.S. 408 (1946); Hartford Accident & Indem. Co. v. Illinois *ex rel.* McLaughlin, 298 U.S. 155, 159 (1936).

54. *See, e.g.*, Railway Employes' Dep't v. Hanson, 351 U.S. 225, 232 (1956); Carson v. Roane-Anderson Co., 342 U.S. 232, 232-35 (1952); Rice v. Santa Fe Elevator Corp., 331 U.S. 218, 236 (1947).

55. *See* Carson v. Roane-Anderson Co., 342 U.S. 232, 235-36 (1952); Rice v. Santa Fe Elevator Corp., 331 U.S. 218, 229-31 (1947); Hirsch, *supra* note 10, at 538-42.

56. *See* Hirsch, *supra* note 10, at 540. Although the discussion in the Hirsch article is directed toward "saving" clauses, see discussion note 53 *supra*, it logically applies to preemption clauses as well.

57. *See* Hirsch, *supra* note 10, at 540-42.

58. Although not a preemption case per se, Train v. Colorado Pub. Interest Research Group, Inc., 426 U.S. 1 (1976), illustrates the problem. In *Train*, the Court was faced with the meaning of "pollutants" under the Federal Water Pollution Control Act [FWPCA], 33 U.S.C. §§ 1251-1376 (Supp. V 1975). Under the FWPCA, the discharge of "pollutants" into navigable waters without a permit from the EPA is unlawful. *Id.* §§ 1311(a), 1342. "Pollutant" is defined in the FWPCA to include, *inter alia*, "radioactive materials." *Id.* § 1362(6). Respondents claimed that, under the FWPCA, the EPA was obligated to set standards for the discharge of all radioactive materials. 426 U.S. at 4. The EPA declined to issue such standards on the basis that the regulation of certain radioactive materials (source, byproduct, and special nuclear materials) fell under the sole jurisdiction of the AEC under the Atomic Energy Act of 1954. *Id.* at 4, 7-9. The court of appeals in *Train* looked solely to the language of the FWPCA and concluded that " 'radioactive materials' . . . meant *all* radioactive materials." *Id.* at 9 (emphasis in original). The Supreme Court reversed, holding that, based on a review of the legislative history of the FWPCA, Congress intended not to change the AEC's control over the discharge of source, byproduct, and special nuclear materials. *Id.* at 23-25.

59. For a discussion of the meaning and significance of a state's police power relative to preemption, see text & notes 90-118 *infra*.

60. Rice v. Santa Fe Elevator Corp., 331 U.S. 218, 230 (1947); *see, e.g.*, New York State Dep't of Social Servs. v. Dublino, 413 U.S. 405, 413 (1973); Florida Lime & Avocado Growers, Inc. v. Paul, 373 U.S. 132, 142, 146 (1963); Maurer v. Hamilton, 309 U.S. 598, 614 (1940). In such cases the Court basically adopts an attitude of deference. Abraham & Loder, *supra* note 10, at 307.

A case which is illustrative of this approach is Huron Portland Cement Co. v. City of Detroit, 362 U.S. 440 (1960). In *Huron Portland Cement*, a Michigan corporation operating several shipping vessels sought to enjoin the City of Detroit from prosecuting the corporation for violation of a city smoke abatement ordinance. *Id.* at 441.

on the part of the judiciary to examine the underlying congressional design.[61]

Where there is no explicit congressional guidance, a state law may still be impliedly preempted.[62] The Supreme Court has found implicit preemption in cases where there is conflict between the two schemes of regulation such that both cannot stand,[63] or when Congress has occupied the field.[64] The term "conflict" applies not only to those cases where compliance with one law results in violation of the other,[65] but also to cases where the state interferes with the federal law.[66] Interfer-

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The shipowner argued that federal licensing and inspection regulations pertaining to the ships' boilers preempted any additional or inconsistent standards enacted by the local government. *Id.* at 441-42. The Supreme Court stated the purpose of the federal statutes was to ensure the safety of the vessels, whereas the city ordinance was an attempt to eliminate air pollution, a valid local concern. *Id.* at 445-46. Thus, there was no overlap between the federal and state laws, so the city ordinance was sustained. *Id.* at 442, 446. The Court added that holding a federal license did not preclude enforcement of a local statute authorized under the police power. *Id.* at 448. Even though the Court emphasized the different purposes between the two laws, it is clear that this approach cannot be isolated as an authoritative test. The ordinance in *Huron Portland Cement* was permitted to stand because it did not conflict with the federal regulation, and there was no impairment of the federal superintendence of the field. *Id.*; *see* Florida Lime & Avocado Growers, Inc. v. Paul, 373 U.S. at 142.

A recent case which did find state impairment of a federal law was City of Burbank v. Lockheed Air Terminal, Inc., 411 U.S. 624 (1973). The City of Burbank enacted an ordinance prohibiting regular jet aircraft flights from taking off between the hours of 11 p.m. and 7 a.m. *Id.* at 625. The measure was enacted to control excessive aircraft noise, a valid state concern to be dealt with under the state's police power. *Id.* at 638. However, the Supreme Court concluded that the federal regulatory scheme was so pervasive, and necessarily so, as to preclude local controls. *Id.* at 638-39. In addition, the Court recognized that administration of air flights required a balance of safety and efficiency. *Id.* If the Burbank ordinance was allowed to stand, and other cities followed suit, the resultant air traffic congestion would seriously affect safety interests. *Id.* at 639.

61. If the preemption clause in the federal statute is not sufficiently clear to demonstrate a congressional purpose to preempt in cases involving state police power, the Court may need to consider other factors, including: a pervasive scheme of federal regulation; a dominant federal interest in the field; or a result of the state action which is inconsistent with the federal objective. Rice v. Santa Fe Elevator Corp., 331 U.S. 218, 230 (1947). In *Rice* the Court was concerned with the preemptive effect of the United States Warehouse Act, 7 U.S.C. §§ 241-273 (1970), on certain state warehouse regulations. In finding the state regulations to be preempted, 331 U.S. at 234, 238, the Court primarily relied on a provision in the federal statute which provided that "the power, jurisdiction, and authority conferred upon the Secretary of Agriculture under this chapter shall be exclusive with respect to all persons securing a license hereunder." 7 U.S.C. § 269 (1970). The holding in *Rice* was based on express preemption, *see* Rice v. Chicago Bd. of Trade, 331 U.S. 247, 253 (1947), but in addition to analyzing the statutory language, the Court examined the legislative history of the Act to determine congressional intent. 331 U.S. at 233-34. Together, the Act and its legislative history made "clear the significance to be attached to [the quoted statutory language]." *Id.* at 234. Resort to the interpretation of congressional intent is more likely in cases of implied preemption. See text & notes 75-86 *infra*.

62. Because Congress rarely includes "preemption" or "saving" clauses in the statutes it enacts, by far the majority of preemption cases are decided in the context of implied preemption. Murphy & La Pierre, *supra* note 14, at 438 & n.245.

63. *See, e.g.*, Public Utils. Comm'n v. United States. 355 U.S. 534 (1958); Wissner v. Wissner, 338 U.S. 655 (1950); McDermott v. Wisconsin, 228 U.S. 115 (1913).

64. Florida Lime & Avocado Growers, Inc. v. Paul, 373 U.S. 132, 141-42 (1963); San Diego Bldg. Trades Council v. Garmon, 359 U.S. 236, 244-45 (1959); Hirsch, *supra* note 10, at 526-33; Murphy & La Pierre, *supra* note 14, at 438.

65. McDermott v. Wisconsin, 228 U.S. 115, 137 (1913).

66. Perez v. Campbell, 402 U.S. 637, 654-56 (1971); Castle v. Hayes Freight Lines,

ence may be said to result where the state law limits or prohibits the intended effect of the federal law.[67] An example would be where an individual is frustrated in the use of a federally granted license,[68] or where a national bank is limited in advertising its services.[69] Finally, although the Supreme Court had previously held state laws to be preempted on the ground that there was a potential conflict with federal law,[70] more recently it has required something more than a trivial conflict in order to find preemption.[71]

In "occupying the field" cases, the question in essence is whether the federal law establishes an area subject to exclusive federal regulation.[72] If the federal law does occupy the field, the state law need not actually conflict or interfere with the federal law in order to be preempted.[73] It is the scope of the federal law rather than the impact of the state law that determines whether the latter is preempted.[74] In

Inc., 348 U.S. 61, 63-64 (1954); Franklin Nat'l Bank v. New York, 347 U.S. 373, 378 (1954); *see* Hirsch, *supra* note 10, at 526-28.

67. *See* Hirsch, *supra* note 10, at 526-28.

68. *See* Castle v. Hayes Freight Lines, Inc., 348 U.S. 61 (1954). In *Castle*, the respondent, an interstate motor carrier, brought a declaratory judgment action seeking to bar the State of Illinois from suspending its right under the Federal Motor Carrier Act, ch. 498, §§ 201-227, 49 Stat. 543 (1935) (codified as amended at 49 U.S.C. §§ 301-327 (1970)), to use Illinois highways. 348 U.S. at 62-63. An Illinois statute regulating the weight and distribution of loads carried in interstate trucks permitted suspension of this right for repeated violations. *Id.* at 62. The Court stated that suspension of the carrier's right to use Illinois highways would amount to a partial suspension of its federal license. *Id.* at 64. The Court concluded that although the state regulation did not itself conflict with the federal law, the federal license could not be frustrated by state revocation or suspension. *Id.* In Lloyd A. Fry Roofing Co. v. Wood, 344 U.S. 157 (1952), the Court upheld an Arkansas statute requiring contract carriers using Arkansas highways to obtain permits from the state's Public Service Commission. *Id.* at 162-63. The Court held that such regulation by the state was permissible since no undue burden was imposed on interstate commerce. *Id.* at 162. *But cf.* Regents of Univ. Sys. v. Carroll, 338 U.S. 586 (1950). In *Carroll*, the FCC renewed the plaintiff's radio license on the condition that it break a contract with a third party. 338 U.S. at 587. The third party sued in state court and won a judgment, *id.* at 593-94, which was upheld by the Supreme Court against a claim of federal preemption. *Id.* at 602.

69. *See* Franklin Nat'l Bank v. New York, 347 U.S. 373 (1954). *Franklin National Bank* involved an action by the State of New York to enjoin a national bank from using the word "saving" or "savings" in advertising its services in violation of a state statute. *Id.* at 374, 376. The bank, believing its act was authorized by federal legislation, used the words "saving" and "savings" in advertising and elsewhere. *Id.* at 376. Even though the Court recognized that the state law permitted national banks to receive savings deposits and to advertise this service subject to the stated limitation, *id.* at 378, it held that the federal legislation gave national banks the right to advertise their services through commonly understood terms, and that the state law, being in conflict with the law of the federal government, must yield. *Id.* at 374, 378.

70. *See* San Diego Bldg. Trades Council v. Garmon, 359 U.S. 236, 244 (1959); Pennsylvania v. Nelson, 350 U.S. 497, 504 (1956); Note, *Application of the Preemption Doctrine to State Laws Affecting Nuclear Power Plants*, 62 VA. L. REV. 738, 760 (1976).

71. *See* New York State Dep't of Social Servs. v. Dublino, 413 U.S. 405, 423 n.20 (1973); Askew v. American Waterways Operators, Inc., 411 U.S. 325 (1973); Note, *supra* note 10, at 646-47; discussion note 87 *infra*.

72. *See* City of Burbank v. Lockheed Air Terminal, Inc., 411 U.S. 624 (1973); Florida Lime & Avocado Growers v. Paul, 373 U.S. 132, 146 (1963); Note, *supra* note 10, at 625.

73. Hirsch, *supra* note 10, at 529.

74. *Id.*

analyzing the exclusivity of the federal statute, the principal function of the court is to determine whether Congress intended to preempt.[75] To determine intent, the pervasiveness of the federal regulatory scheme will generally be considered,[76] as well as the dominance of the federal interest in the field,[77] the danger of conflict,[78] and the legislative history of the federal statute.[79]

If the nature of the subject clearly indicates a dominant federal interest and requires national uniformity, federal preemption will be found.[80] In *Cooley v. Board of Wardens*,[81] the Court distinguished subject matter as either national or local in character.[82] A state statute requiring ships using Pennsylvania harbors to take on a local pilot was valid because the regulation of pilots was a matter of local concern.[83] Today, however, even with subject matter traditionally regarded as local in character, Congress may determine that federal legislation is appropriate.[84] Occasionally, in cases where the factors of a dominant federal interest and the need for national uniformity are of relevance, the court may find that Congress attempted to strike a balance between

75. *See, e.g.*, Guss Photosound Prods. Mfg. Co. v. Utah Labor Relations Bd., 353 U.S. 1, 9-10 (1957); Pennsylvania v. Nelson, 350 U.S. 497, 504 (1956); H.P. Welch Co. v. New Hampshire, 306 U.S. 79, 84-85 (1939).

76. Rice v. Santa Fe Elevator Corp., 331 U.S. 218, 230 (1947). The more complete the federal regulation appears to be, the more likely it is that Congress intended to occupy the field. *See* City of Burbank v. Lockheed Air Terminal, Inc., 411 U.S. 624 (1973); Cloverleaf Butter Co. v. Patterson, 315 U.S. 148, 167-68 (1942). Finding a pervasive regulatory scheme is particularly likely in those fields in which federal administrative agencies are functioning. *See* Hirsch, *supra* note 10, at 541-42.

77. Rice v. Santa Fe Elevator Corp., 331 U.S. 218, 230 (1947); *see* San Diego Bldg. Trades Council v. Garmon, 359 U.S. 236, 241-46 (1959) (since national labor policy is reflected in the National Labor Relations Act, 29 U.S.C. §§ 157-158 (1970), states are not free to regulate in this area); Pennsylvania v. Nelson, 350 U.S. 497, 504-05 (1956) (sedition against the United States is a matter of national concern). In cases which deal with subject matter which is traditionally subject to local regulation, the Court is less likely to find preemption. Huron Portland Cement Co. v. City of Detroit, 362 U.S. 440, 446 (1960) (problem of air pollution is primarily a matter of state and local concern); South Carolina Highway Dep't v. Barnwell Bros., Inc., 303 U.S. 177, 187 (1938) (use of state highways is a matter of local concern). If the subject matter requires uniform national regulation, the Court is inclined to find that Congress intended to occupy the field. *See* Campbell v. Hussey, 368 U.S. 297, 300-01 (1961) (federal law relative to classification and inspection of tobacco held to preempt the field); Note, *supra* note 10, at 625.

78. Pennsylvania v. Nelson, 350 U.S. 497, 505-06 (1956).

79. Florida Lime & Avocado Growers, Inc. v. Paul, 373 U.S. 132, 147-48 (1963); Hirsch, *supra* note 10, at 741.

80. *See, e.g.*, City of Burbank v. Lockheed Air Terminal, Inc., 411 U.S. 624, 639 (1973); San Diego Bldg. Trades Council v. Garmon, 359 U.S. 236, 241-46 (1959); Pennsylvania v. Nelson, 350 U.S. 497, 504-05 (1956).

81. 53 U.S. (12 How.) 299 (1851).

82. 53 U.S. (12 How.) at 319-30; *see* Note, *supra* note 10, at 625.

83. *Id.* at 319.

84. *See* Pike v. Bruce Church, Inc., 397 U.S. 137, 142 (1970) (state law requiring certain packaging of fruits and vegetables held to constitute an illegal burden on interstate commerce); Wickard v. Filburn, 317 U.S. 111, 124-25 (1942) (consumption of wheat at a local level can be reached by Congress where the effect on interstate commerce is significant); Cloverleaf Butter Co. v. Patterson, 315 U.S. 148, 153-54 (1942) (federal laws may regulate the manufacture of renovated butter to the exclusion of a state); Note, *supra* note 10, at 625 n.18.

competing public interests.[85] The existence of such a balance is construed as indicative of a congressional intent to preempt, and state attempts to disrupt this balance would be invalid.[86]

Application of the foregoing tests obviously can become rather complicated. In part this is due to the spectrum of possible relationships that the state and federal laws may bear to one another. This range extends from areas of direct conflict[87] to areas of distinct, independent federal or state jurisdiction.[88] Moreover, the tests themselves have not been applied systematically, but rather in an ad hoc manner.[89] Since state legislative power is frequently a factor in such case-by-case application of the preemption doctrine,[90] an understanding of this power is required to facilitate further analysis.

State Police Power

The federal government has only certain constitutionally enumerated powers.[91] Powers not delegated to the federal government are reserved to the states under the tenth amendment to the Constitution.[92] These reserved powers enable the states to regulate various subject matters—such as health, safety, public welfare, and internal commerce.[93] Power over subject matter not delegated to the federal gov-

85. In City of Burbank v. Lockheed Air Terminal, Inc., 411 U.S. 624 (1973), the Court recognized that the regulation of aircraft takeoffs and landings required a balance between safety and efficiency. *Id.* at 638-39; see discussion note 60 *supra.* In Sears, Roebuck & Co. v. Stiffel Co., 376 U.S. 225 (1964), the Court stated that uniform federal standards in the patent system were intended to balance the promotion of inventions against the preservation of free competition. *Id.* at 230-31.

86. *See* City of Burbank v. Lockheed Air Terminal, Inc., 411 U.S. 624 (1973). *Cf.* Goldstein v. California, 412 U.S. 546 (1973). In *Goldstein*, the Court found that Congress had not struck a balance between the need to encourage innovation and the free enterprise system in the area of recording of musical performances. *Id.* at 569-70. Accordingly, the state law which might otherwise have fallen under the copyright clause, U.S. CONST. art. I, § 8, cl. 8, was upheld. 412 U.S. at 571.

87. Free v. Bland, 369 U.S. 663 (1962) (state community property rule held to conflict with federal regulations on ownership of United States Savings Bonds). A degree of conflict has been permitted in some cases. *See* Kewannee Oil Co. v. Bicron Corp., 416 U.S. 470 (1974); Merrill Lynch, Pierce, Fenner & Smith, Inc. v. Ware, 414 U.S. 117, 130-32 (1973); Note, *supra* note 10, at 646-49. In New York State Dep't of Social Servs. v. Dublino, 413 U.S. 405 (1974), the Court noted that it would not attempt to resolve conflicts which were trivial or insubstantial. *Id.* at 423 n.29. The test seems to be whether "the conflict is between a regulatory scheme of substantial state interest and insubstantial federal concern." Note, *supra* note 10, at 647. *See* Merrill Lynch, Pierce, Fenner & Smith, Inc. v. Ware, 414 U.S. at 135, 139-40.

88. *See* Huron Portland Cement Co. v. City of Detroit, 362 U.S. 440, 445-46 (1960) (municipal ordinance on air pollution held not to overlap with federal ship inspection laws).

89. Note, *supra* note 10, at 633. Thus, preemption has been treated on a case-by-case basis, as evidenced by the various factors employed in reaching a decision. See text & notes 76-79 *supra.*

90. See text & notes 59-61 *supra.*

91. *See, e.g.*, McCulloch v. Maryland, 17 U.S. (4 Wheat.) 316, 404-06 (1819); U.S. CONST. arts. I-III; THE FEDERALIST No. 84, at 513 (J. Cooke ed. 1961) (A. Hamilton).

92. U.S. CONST. amend. X.

93. Gibbons v. Ogden, 22 U.S. (9 Wheat.) 1, 203 (1824).

ernment has been characterized as the states' "police power,"[94] which the Supreme Court has described as the authority by which a state legislates for the public good.[95] This authority is inherent in state governments,[96] and is one of the most protected of governmental powers.[97] Through it the state may act to protect the health, safety, morals, and general welfare of its citizens.[98] A precise definition of the scope of the state police power, however, cannot be given.[99] An understanding of the scope of state police power is aided by an analysis of the judicial attitude toward the power throughout American history.

During the 1830's, the Supreme Court entered a dual federalist phase where the federal government's enumerated powers and the states' police power were regarded as mutually exclusive.[100] The role of the Court, in reviewing state legislation during this period, was simply to inquire whether the legislation was within the police power of the states.[101] This broad interpretation of the police power began to erode after *Cooley v. Board of Wardens*.[102] The reasons for this erosion were twofold. First, the Court in *Cooley* held that the power of

94. C. PRITCHETT, THE AMERICAN CONSTITUTION 660 (2d ed. 1968).

95. License Cases, 46 U.S. (5 How.) 504, 583 (1847). In Mayor of New York v. Miln, 36 U.S. (11 Pet.) 102 (1837), the Court described the police power more specifically:

> We choose rather to plant ourselves on what we consider impregnable positions. They are these: That a state has the same undeniable and unlimited jurisdiction over all persons and things, within its territorial limits, as any foreign nation; where that jurisdiction is not surrendered or restrained by the constitution of the United States. That, by virtue of this, it is not only the right, but the bounden and solemn duty of a state, to advance the safety, happiness and prosperity of its people, and to provide for its general welfare, by any and every act of legislation, which it may deem to be conducive to these ends . . . .

Id. at 139.

96. License Cases, 46 U.S. (5 How.) 504, 583 (1847); *see* Mayor of New York v. Miln, 36 U.S. (11 Pet.) 102, 139 (1837).

97. *See* Queenside Hills Realty Co. v. Saxl, 328 U.S. 80, 83 (1946); District of Columbia v. Brooke, 214 U.S. 138, 149 (1909).

98. *See, e.g.*, Florida Lime & Avocado Growers, Inc. v. Paul, 373 U.S. 132, 144-46 (1963); Nebbia v. New York, 291 U.S. 502, 523-24 (1934); Sligh v. Kirkwood, 237 U.S. 52, 58-60 (1915). Thus, states may impose certain conditions on a welfare recipient as a prerequisite to continued assistance, New York State Dep't of Social Servs. v. Dublino, 413 U.S. 405 (1973), regulate the oil content of avocados to prevent the deception of consumers, Florida Lime & Avocado Growers, Inc. v. Paul, 373 U.S. 132 (1963), or enact local air pollution measures, Huron Portland Cement Co. v. City of Detroit, 362 U.S. 440 (1960).

99. Berman v. Parker, 348 U.S. 26, 32 (1954); Stone v. Mississippi, 101 U.S. 814, 818 (1879). Matters encompassed within a state's police power are largely determined by the legislature and reflect what the legislators consider to be the purposes of government. Berman v. Parker, 348 U.S. at 32. When the legislature speaks, it does so on behalf of the public. *Id.* Matters bearing on the public interest are broad indeed, see discussion note 98 *supra*, and for this reason a precise definition of the scope of the state police power cannot be stated.

100. Mayor of New York v. Miln, 36 U.S. (11 Pet.) 102, 139 (1837); Corwin, *The Passing of Dual Federalism*, 36 VA. L. REV. 1, 15 (1950); Nygh, *The Police Power of the States in the United States and Australia*, 2 FED. L. REV. 183, 189 (1967).

101. Nygh, *supra* note 100, at 188.

102. 53 U.S. (12 How.) 299 (1851).

the states to regulate local aspects of interstate commerce was concurrent with congressional power based on the commerce clause.[103] Where Congress had exercised its power, a conflicting state law had to fall.[104] Where Congress had not acted, the Court struggled to reconcile the national and local interests involved by analyzing whether the state regulation imposed a "direct" or "indirect" burden on interstate commerce.[105] This test was found to be too mechanical and uncertain, however,[106] and the Court began to speak in terms of balancing the national and local interests.[107] Certain activities were prohibited from regulation by the states altogether, regardless of the states' purpose in legislating.[108] Second, although the Court had stated that the fourteenth amendment did not impair the police power of the states,[109] the Court gave a broader interpretation to the rights protected by the amendment.[110]

Further developments since the turn of the century have restored much of the states' prior power. These developments centered around the role of the Court and led to the current position that state laws enacted under the police power are presumed valid whether challenged under the fourteenth amendment or as an unreasonable regulation of interstate commerce.[111] With respect to interstate commerce, the Court weighs the national and local interests involved,[112] and upholds the state law unless it seems to be discriminatory[113] or unduly burdensome.[114] The Court looks to whether the state law is directed toward a proper objective,[115] bears a reasonable relationship to attainment of

103. *Id.* at 317-21; *see* Gloucester Ferry Co. v. Pennsylvania, 114 U.S. 196, 214 (1885).

104. Cooley v. Board of Wardens, 53 U.S. (12 How.) 299, 318-21 (1851); *see, e.g.,* Kelly v. Washington, 302 U.S. 1, 9-10 (1937); McDermott v. Wisconsin, 228 U.S. 115, 131-32 (1913); Schollenberger v. Pennsylvania, 171 U.S. 1, 19 (1898).

105. Di Santo v. Pennsylvania, 273 U.S. 34, 44 (1927); Nygh, *supra* note 100, at 190.

106. *See* Parker v. Brown, 317 U.S. 341, 362-63 (1943); Di Santo v. Pennsylvania, 273 U.S. 34, 44 (1927) (Stone, J., dissenting); Nygh, *supra* note 100, at 190.

107. *See, e.g.,* Southern Pac. Co. v. Arizona, 325 U.S. 761, 768-69, 783-84 (1945); Parker v. Brown, 317 U.S. 341, 362-63 (1943); Illinois Natural Gas Co. v. Central Ill. Pub. Serv. Co., 314 U.S. 498, 504-06 (1942). *See also* Railroad Co. v. Fuller, 84 U.S. (17 Wall.) 560, 567-68 (1873).

108. *See* Robbins v. Shelby County Taxing Dist., 120 U.S. 489, 497 (1887) (state could not tax interstate commerce); Nygh, *supra* note 100, at 192-95. *See also* Leisy v. Hardin, 135 U.S. 100, 125 (1890) (state could not prohibit sale of liquor imported from another state).

109. *See* Barbier v. Connolly, 113 U.S. 27, 31-32 (1885).

110. Nygh, *supra* note 100, at 190-92. Thus, in Lochner v. New York, 198 U.S. 45 (1905), the Court held that freedom of contract was protected by the fourteenth amendment. *Id.* at 64-65; *see* Strong, *The Economic Philosophy of Lochner: Emergence, Embrasure and Emasculation,* 15 ARIZ. L. REV. 419 (1973).

111. Bibb v. Navajo Freight Lines, Inc., 359 U.S. 520, 529 (1959).

112. Parker v. Brown, 317 U.S. 341, 362-63 (1943).

113. Polar Ice Cream & Creamery Co. v. Andrews, 375 U.S. 361, 377-78 (1964).

114. *See* Bibb v. Navajo Freight Lines, Inc., 359 U.S. 520, 530 (1959).

115. *See* Berman v. Parker, 348 U.S. 26, 33 (1954). Although *Berman* concerned

the objective,[116] and is not arbitrary.[117] The most relevant of the limitations on the exercise of the state police power for purposes of this Note is the supremacy clause.[118]

An example of the utilization of the state police power, the authority relied upon for state regulation of nuclear power, is state regulation of public utilities, which in turn can be traced to the early regulation of the railroads.[119] States initially regulated the railroads through the creation of special state commissions,[120] some of which exerted direct regulatory powers over the rates charged.[121] Several challenges were made to this regulatory activity,[122] but the Supreme Court negated these challenges by holding in *Munn v. Illinois*[123] that property which was devoted to a public use was subject to state rate regulation.[124] The Court found there was neither a fourteenth amendment due process violation[125] nor an attempted regulation of interstate commerce.[126] In essence, the decision in *Munn* provides the necessary basis for economic regulation of public utilities, since a business which is affected with a public interest is subject to the state police power.[127]

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congressional action affecting the District of Columbia, the rationale contained in *Berman* would also apply to state law. *See id.* at 32-33.

116. *See* Goldblatt v. Town of Hempstead, 369 U.S. 590, 594-95 (1962).

117. *Id.*

118. J. KALLENBACH, FEDERAL AND STATE COOPERATION 195 (1942); *see* Bibb v. Navajo Freight Lines, Inc., 359 U.S. 502, 529 (1959). See text & notes 59-61 *supra.*

119. Initially it was widely felt that the only regulator of railroads and similar utilities was to be free competition. *See* C. SWISHER, AMERICAN CONSTITUTIONAL DEVELOPMENT 397 (2d ed. 1954). But problems arose where only one railroad company operated in an area, or where a larger company could force a local company out of business through lower rates. *Id.* In such cases, the monopoly railroad company could charge whatever the traffic would bear, giving rise to the belief that some state regulation was required. *Id.*

120. W. JONES, CASES AND MATERIALS ON REGULATED INDUSTRIES 31-44 (1976); *see* Munn v. Illinois, 94 U.S. 113 (1877); text & notes 123-26 *infra.*

121. W. JONES, *supra* note 120, at 32-37.

122. *See, e.g.*, Chicago, M., St. P. Ry. v. Ackley, 94 U.S. 179 (1877); Peik v. Chicago & N.W. Ry., 94 U.S 164 (1877); Chicago, B. & Q. Ry. v. Iowa, 94 U.S. 155 (1877).

123. 94 U.S. 113 (1877).

124. *Id.* at 130. The Court had in an earlier part of the opinion set forth the following test: "When, therefore, one devotes his property to a use in which the public has an interest, he, in effect, grants to the public an interest in that use, and must submit to be controlled by the public for the common good . . . ." *Id.* at 126.

125. *Id.* at 134-35.

126. *Id.* at 135. *Munn* was distinguished in Wabash, St. L. & Pac. Ry. v. Illinois, 118 U.S. 557 (1886), where the Court held that a state could not regulate the fares and charges for transportation which were part of interstate commerce. *Id.* at 566, 569-70, 575. The scope of the states' legislative power to regulate commerce occurring wholly within state boundaries as set out in *Munn* was adhered to in Budd v. New York, 143 U.S. 517, 543-45 (1892).

127. Nebbia v. New York, 291 U.S. 502, 533-39 (1934); *see* W. JONES, *supra* note 120, at 59-60. In *Nebbia*, the Court said:

> It is clear that there is no closed class or category of business affected with a public interest, and the function of courts . . . is to determine in each case whether circumstances vindicate the challenged regulation as a reasonable exertion of governmental authority or condemn it as arbitrary or discriminatory. The phrase "affected with a public interest" can, in the nature of things,

In addition to economic regulation, states may also use their police powers for purposes of land use and zoning regulations. The Supreme Court has ruled that so long as the zoning ordinance bears a rational relationship to a legitimate state interest, such as public health, safety, morals, or general welfare, and is not arbitrary or unreasonable, it will be upheld.[128] In fact, the scope of state regulations in this area is necessarily broad due to the localized effect of such legislation.[129] Thus, courts grant local legislators considerable latitude in determining the proper solution to local problems.[130]

Activities generally regulated by states under their police power may come under federal control when Congress exercises its constitutional powers. There are three particular constitutional sources which authorize congressional preemption of local control:[131] The general welfare clause;[132] the necessary and proper clause;[133] and clauses delegating specific powers, such as the commerce power.[134] Federal regulation of nuclear power and radiation hazards has been stated[135] to be

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mean no more than an industry, for adequate reason, is subject to control for the public good.

291 U.S. at 536 (citation omitted).

128. Village of Belle Terre v. Boraas, 416 U.S. 1, 8 (1974); Village of Euclid v. Ambler Realty Co., 272 U.S. 365, 295 (1926).

129. The broad scope of the exercise of the states' police powers in this area is exemplified in Village of Belle Terre v. Boraas, 416 U.S. 1 (1974), where the Court upheld a zoning ordinance limiting the occupancy of one-family dwellings to traditional families or to groups of not more than two unrelated persons. *Id.* at 7-9. The majority ruled that the police power extends to zoning regulations based on family values, quiet seclusion, and clear air. *Id.* at 9. *But cf.* Moore v. City of East Cleveland, — U.S. —, 97 S. Ct. 1932 (1977) (city may not limit occupancy of dwelling unit to "nuclear" family).

In Construction Indus. Ass'n v. City of Petaluma, 522 F.2d 897 (9th Cir. 1975), *cert. denied*, 424 U.S. 934 (1976), the court of appeals was faced with a city plan which fixed yearly housing development growth rates and locations. *Id.* at 900-02. Applying the test that a zoning ordinance will be upheld if it bears a rational relationship to a legitimate state interest, the court held the plan did not violate the due process clause of the fourteenth amendment and did not present an unreasonable burden on interstate commerce. *Id.* at 905-09. *See generally* Note, *Municipal Self-Determination: Must Local Control of Growth Yield to Travel Rights?*, 17 ARIZ. L. REV. 145 (1975).

130. *See, e.g.*, Village of Belle Terre v. Boraas, 416 U.S. 1, 13-14 (1974) (Marshall, J., dissenting); Berman v. Parker, 348 U.S. 26, 33 (1954); Village of Euclid v. Ambler Realty Co., 272 U.S. 365, 386-96 (1926).

131. *See* Note, *Environmental Control: Higher State Standards and the Question of Preemption*, 55 CORNELL L. REV. 846, 849-50 (1970).

132. U.S. CONST. art. I, § 8, cl. 1; *see* United States v. Butler, 297 U.S. 1, 65-66 (1936); Northern States Power Co. v. Minnesota, 447 F.2d 1143, 1147 (8th Cir. 1971), *aff'd*, 405 U.S. 1035 (1972).

133. U.S. CONST. art. I, § 8, cl. 18; *see, e.g.*, United States v. Darby, 312 U.S. 100, 118-19, 121, 123-24 (1941); Kansas v. Colorado, 206 U.S. 46, 87-88 (1907); McCulloch v. Maryland, 17 U.S. (4 Wheat.) 316, 420-22 (1819).

134. U.S. CONST. art. I, § 8, cl. 3. In The Lottery Case, 188 U.S. 321 (1903), the Court ruled that Congress could prohibit the movement of lottery tickets from state to state under its power to regulate commerce. *Id.* at 363-64.

135. *See, e.g.*, Northern States Power Co. v. Minnesota, 447 F.2d 1143, 1147 (8th Cir. 1971), *aff'd*, 405 U.S. 1035 (1972); Estep & Adelman, *supra* note 8, at 44-54; Helman, *Pre-emption: Approaching Federal-State Conflict over Licensing Nuclear Power Plants*, 51 MARQ. L. REV. 43, 56-57 (1967).

based upon the constitutionally granted powers over commerce,[136] defense,[137] property,[138] and promotion of the general welfare.[139] Assuming the congressional action to be constitutional, any state legislation, even though grounded in the exercise of the police power, is invalid if it either conflicts with the federal law or attempts to regulate in an area which Congress has occupied.[140] The consensus is that the commerce power provides the best,[141] if not the only basis for federal regulation of nuclear power.[142] Nevertheless, whatever the basis for federal regulation, states have been active in nuclear power regulation. To define the scope of permissible state regulation, past attempts by states to regulate nuclear power must be examined. Judicial resolution of the propriety of such regulation provides guidance in setting the preemption boundaries.[143]

STATE REGULATION OF NUCLEAR POWER NOT SUBJECT TO PREEMPTION

Judicial Review of State Attempts to Regulate Nuclear Power

Prior to the 1959 amendment to the Atomic Energy Act of 1954, establishing radiation standards, the Act had been silent about state regulation of radiation.[144] During this period a number of states

136. U.S. CONST. art. I, § 8, cl. 3.
137. *Id.* cls. 11-14.
138. *Id.* art. IV, § 3, cl. 2.
139. *Id.* art. I, § 8, cl. 1.
140. See text & notes 62-86 *supra.*
141. Murphy & La Pierre, *supra* note 14, at 435; *see* Parenteau, *Regulation of Nuclear Power Plants: A Constitutional Dilemma for the States*, 6 ENVT'L L. 675, 704-06 (1976).

Use of the property power as the basis for federal legislation was deemphasized when Congress passed the Private Ownership of Special Nuclear Materials Act, Pub. L. No. 88-489, 78 Stat. 602 (1964) (codified as amended at 42 U.S.C. §§ 2013, 2073-2078, 2135, 2153, 2201, 2221, 2233-2235 (1970)), which permitted utilities to own nuclear fuel. S. REP. No. 1325, 88th Cong., 2d Sess. 6-8, 19-20 (1964), *reprinted in* [1964] U.S. CODE CONG. & AD. NEWS 3105, 3114.

The defense power would seem to be a valid basis for regulation of the radiological aspects of nuclear power. The argument is that in order to be prepared for a nuclear war, uniform federal control of radiation exposures during peacetime is important, ensuring that personnel experienced in handling radioactive materials will not have been overexposed and will be available during the national emergency. *See* Estep & Adelman, *supra* note 8, at 46. In terms of regulating nuclear power as a source of electricity, it is arguable that the defense power is not sufficiently broad to support pervasive federal control unless nuclear power provided a substantial portion of the nation's generating capacity. *See* Parenteau, *supra* at 705 n.141.

The power to promote the general welfare is limited to legislative action based on one of the enumerated powers. Carter v. Carter Coal Co., 298 U.S. 238, 292 (1936). Thus, federal regulation of nuclear power must be based on the commerce, taxing and spending, or one of the other enumerated powers in order for the general welfare clause to be applicable. *See generally* Parenteau, *supra* at 704-06.

142. *See* Parenteau, *supra* note 141, at 704-06.
143. Reference to the most recent state legislation will not be made since these laws have not as yet been tested in the courts. See discussion note 7 *supra.*
144. *See* Northern States Power Co. v. Minnesota, 447 F.2d 1143, 1148 (8th Cir. 1971), *aff'd*, 405 U.S. 1035 (1972); *1959 Hearings, supra* note 27.

passed statutes governing the controlled release of radioactive effluents,[145] which is part of the normal operation of a nuclear power plant. The 1959 amendment seemed to clarify that the operation of a nuclear plant was to be exclusively controlled by the AEC.[146] Yet the State of Minnesota, acting on its power to protect the health and safety of its citizens, enacted and attempted to enforce a statute regulating radioactive effluents against an electric utiliity company operating a nuclear plant within the state.[147] This conflict between AEC control of nuclear power plant operation and Minnesota's police power was at issue in *Northern States Power Co. v. Minnesota.*[148] In *Northern States,* it was held that the Minnesota statute regulating radioactive waste releases was unconstitutional under the supremacy clause.[149] After reviewing the federal atomic energy legislation, the court concluded that there was an implied congressional intent to preempt the regulation of radiation hazards.[150] Further, the court held that the discharge of radioactive effluents was part of the construction and operation of a nuclear plant, the regulation of which Congress had specified the AEC was precluded from delegating.[151]

The states have also been involved in the location of nuclear re-

145. *E.g.,* ch. 281, §§ 1-8, 1955 N.H. Laws 428 (amended 1961); § 1, 1957 Ohio Laws 270 (amended 1959); ch. 324, §§ 1-5, 1957 Tenn. Pub. Acts 1135 (amended 1961).

146. *See* Act of Sept. 23, 1959, Pub. L. No. 86-373, § 274(c), 73 Stat. 689 (codified at 42 U.S.C. § 2021(c) (1970)).

147. Northern States Power Co. v. Minnesota, 447 F.2d 1143, 1144-45 (8th Cir. 1971), *aff'd,* 405 U.S. 1035 (1972).

148. 447 F.2d 1143 (8th Cir. 1971), *aff'd,* 405 U.S. 1035 (1972).

149. *Id.* at 1154.

150. Id. at 1149-50. The court rejected the state's assertion that Congress provided for concurrent jurisdiction over radioactive discharges, since Congress recognized state authority only if there was a state-federal compact pursuant to 42 U.S.C. § 2021(b) (1970); state authority could not exist independently. 447 F.2d at 1149-50. The court went on to emphasize that the AEC had exclusive authority to regulate radioactive effluents from a nuclear power plant. *Id.* at 1153-54. The exclusive nature of the agency's regulation of source, byproduct, and special nuclear materials was affirmed in Train v. Colorado Pub. Interest Group, Inc., 426 U.S. 1, 14-23 (1976). *But see 1959 Hearings, supra* note 27, at 494, where it is suggested that a city could preclude the construction of a nuclear plant because of the radiation hazards involved even though AEC standards were met. For a discussion of recent legislative developments which depart from the holding in *Northern States,* see Appendix, *infra* at 1021.

151. 447 F.2d at 1149-50. In New Jersey Dep't of Environmental Protection v. Jersey Cent. Power & Light Co., 69 N.J. 102, 351 A.2d 337 (1976), the state's Department of Environmental Protection sought to hold Jersey Central liable for the death of approximately 500,000 fish. *Id.* at 104, 351 A.2d at 338. The deaths occurred during a plant shutdown when the operator suspended the discharge of heated water from the plant condensers, and instead discharged unheated water which was used to dilute radioactive releases in accordance with the plant's technical specifications. *Id.* at 108-14, 351 A.2d at 340-44. Although the court concluded that the pumping operation was not a cause in fact of the fish kill, it also held that a finding of nonliability was required under the doctrine of federal preemption. *Id.* at 106, 111, 351 A.2d at 339, 344. The court added that the operator's method of discharging radioactive liquids, which required large quantities of unheated water for dilution purposes, was not subject to state regulation since it was authorized by the operating license issued by the AEC. *Id.* at 115, 351 A.2d at 344.

actors pursuant to local zoning requirements.[152] The subject of the location of nuclear reactors arose in *Northern California Association to Preserve Bodega Head & Harbor, Inc. v. Public Utilities Commission.*[153] There, the California Public Utilities Commission [PUC], following hearings spread over 4 months, granted to the Pacific Gas & Electric Company a conditional certificate to install and operate a nuclear power plant.[154] More than 5 months later petitioner, a citizens group opposed to the plant, filed a petition with the PUC to reopen the application for further hearings.[155] Following the PUC's refusal to reopen the proceedings, petitioner requested the Supreme Court of California to review the PUC's action.[156] In its petition for rehearing before the PUC, the petitioner had contended that inadequate attention had been given to reactor safety.[157] Although the court affirmed the Commission's orders on the ground that the petition for rehearing was untimely,[158] it first addressed itself to the question of whether states were precluded from questioning the safety of the location of atomic reactors.[159] In considering section 274(k) of the 1959 amendment to the Atomic Energy Act of 1954,[160] the court stated that "since the location of an atomic reactor at or near an active earthquake fault zone involves safety considerations in addition to radiation hazards, it is clear that the federal government has not preempted the field."[161]

In *Marshall v. Consumers Power Co.*,[162] intervenors sought a dec-

152. *See* Northern Cal. Ass'n v. Public Utils. Comm'n, 61 Cal. 2d 126, 390 P.2d 200, 37 Cal. Rptr. 432 (1964); *In re* Consolidated Edison Co., 2 NUCLEAR REG. REP. (CCH) ¶ 20,018 (N.Y. Sup. Ct. Nov. 26, 1975).

153. 61 Cal. 2d 126, 390 P.2d 200, 37 Cal. Rptr. 432 (1964).

154. *Id.* at 129-30, 390 P.2d at 202, 37 Cal. Rptr. at 434.

155. *Id.* at 131, 390 P.2d at 203, 37 Cal. Rptr. at 435.

156. *Id.* at 133, 390 P.2d at 204, 37 Cal. Rptr. at 436.

157. *Id.* at 130, 390 P.2d at 202, 37 Cal. Rptr. at 434.

158. *Id.* at 134-35, 390 P.2d at 205, 37 Cal. Rptr. at 437.

159. *Id.* at 133, 390 P.2d at 204, 37 Cal. Rptr. at 436.

160. Act of Sept. 23, 1959, Pub. L. No. 86-373, § 274(k), 73 Stat. 689 (codified at 42 U.S.C. § 2021(k) (1970)).

161. 61 Cal. 2d at 133, 390 P.2d at 204, 37 Cal. Rptr. at 436. In *In re* Consolidated Edison Co., 2 NUCLEAR REG. REP. (CCH) ¶ 20,018 (N.Y. Sup. Ct. Nov. 26, 1975), the petitioning utility company appeared before the zoning board for the Village of Buchanan to seek a zoning variance. *Id.* The variance would have permitted the utility to construct a massive natural draft cooling tower as part of a closed-cycle cooling system. *Id.* The closed-cycle system would make unnecessary the release of large amounts of heated water into the nearby river which served as a source of cooling water. The utility company had been directed by the NRC to obtain all governmental approvals required for such a system. *Id.* The board denied the variance on the ground that the utility company had not yet been directed by the NRC to actually install such a system. *Id.* The court first ruled that the utility sought the variance in good faith and, therefore, the board should have decided the matter on the merits. *Id.* The court then went on to consider whether the board had any authority to regulate the cooling tower at all. *Id.* While acknowledging that section 274(k) would indicate no preemption, the court concluded that section 274(c)(1), dealing with construction and operation of nuclear reactors, did provide for preemption in this case. 2 NUCLEAR REG. REP. at ¶ 20,018. This interpretation of section 274(c)(1) seems inconsistent with NRC regulations and other case law. *See* text & notes 44-45 *supra.*

162. 65 Mich. App. 237, 237 N.W.2d 266 (1975).

laration that the defendant utility's proposed nuclear plant would constitute a private or public nuisance.[163] The plaintiff's allegations concerned problems of steam fog and icing which would be produced by the plant's cooling system, as well as problems associated with the workability of the plant's emergency core cooling system.[164] While holding that the state court could not consider the workability of the emergency core cooling system since this dealt with radiation hazards,[165] the opinion went on to hold that it could hear the controversy on the nuisance allegation since it concerned a nonradiological hazard which was subject to regulation under the state's police power.[166] The court qualified the extent of the state's power, however, by noting that if measures required to abate the nuisance would make construction of a plant within state boundaries impossible, the federal interest would prevent relief.[167]

Northern States, Northern California Association, and *Marshall* are cases which illustrate that the grant to the NRC of exclusive jurisdiction over radiation hazards is judicially recognized and upheld.[168] On the other hand, the courts have also recognized that the states are free to regulate for purposes other than protection against radiation hazards.[169] Precise qualifications on the extent of permissible state regulation have not been drawn. The remainder of this Note will utilize these judicial decisions and the congressional purposes underlying the federal legislation to define the permissible scope of state regulation.

Determination of Federal Interest

Based on the relationship between the doctrine of preemption and the state police power, an attempt can be made to define the extent

163. *Id.* at 241-42, 237 N.W.2d at 272.
164. *Id.* at 241-44, 237 N.W.2d at 272-73.
165. *Id.* at 247, 237 N.W.2d at 274.
166. *Id.* at 247-49, 263-64, 237 N.W.2d at 274-75, 282. The court recognized, however, that measures to abate the alleged nuisance would impact upon the construction of the power plant. *Id.* at 263-64, 237 N.W.2d at 282. The court specifically ruled that such measures were not precluded by section 274(c)(1), since that section only prohibited state control of radiation hazards. 65 Mich. App. at 251, 237 N.W.2d at 277. *But see In re* Consolidated Edison Co., 2 NUCLEAR REG. REP. (CCH) ¶ 20,018 (N.Y. Sup. Ct. Nov. 26, 1975) (discussed in note 161 *supra*).
167. 65 Mich. App. at 263-64, 237 N.W.2d at 282.
168. *See, e.g.,* Northern States Power Co. v. Minnesota, 447 F.2d 1143, 1151 (8th Cir. 1971), *aff'd,* 405 U.S. 1035 (1972); Northern Cal. Ass'n v. Public Utils. Comm'n, 61 Cal. 2d 126, 390 P.2d 200, 37 Cal. Rptr. 432 (1964); Marshall v. Consumers Power Co., 65 Mich. App. 237, 247-48, 237 N.W.2d 266, 274-75 (1975); New Jersey Dep't of Environmental Protection v. Jersey Cent. Power & Light Co., 69 N.J. 102, 112-15, 351 A.2d 337, 343-44 (1976).
169. *See, e.g.,* Northern States Power Co. v. Minnesota, 447 F.2d 1143, 1150 (8th Cir. 1971), *aff'd,* 405 U.S. 1035 (1972); Northern Cal. Ass'n v. Public Utils. Comm'n, 61 Cal. 2d 126, 133, 390 P.2d 200, 204, 37 Cal. Rptr. 432, 436 (1964); Marshall v. Consumers Power Co., 65 Mich. App. 237, 247-48, 237 N.W.2d 266, 274-75 (1975).

to which state regulation of nuclear power is compatible with the federal atomic energy legislation and existing case law. States may, under their police powers, regulate nuclear power matters for purposes other than protection against radiation hazards.[170] Measures undertaken by the states should be upheld so long as they do not stand "as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress,"[171] and do not impair federal superintendence of the field.[172] State regulation for nonradiological purposes may not be carried so far, however, as to prohibit plant construction within the state, in view of the federal interest involved.[173] The scope of state regulation of nonradiological hazards thus depends on the nature of this federal interest, which must therefore be articulated explicitly.

As previously noted,[174] a stated purpose of the Atomic Energy Act of 1954[175] was to encourage the development and utilization of atomic energy to produce electricity, subject to the condition that such development must be consistent with "the common defense and security and with the health and safety of the public."[176] This purpose is promotional in the sense that producers of electricity were encouraged to take advantage of the benefits of nuclear power. The scope of this promotional language is important in determining the nature of the federal interest associated with the 1954 Act.[177] The court in *Northern States Power Co. v. Minnesota*[178] noted that Congress had given the AEC the responsibility to properly balance the competing public interests—the beneficial use of nuclear power and the protection of the public against radiation hazards.[179] It has previously been observed that when Congress undertakes a balancing of this nature, its

170. 42 U.S.C. § 2021(k) (1970).
171. Hines v. Davidowitz, 312 U.S. 52, 67 (1941).
172. Florida Lime & Avocado Growers, Inc. v. Paul, 373 U.S. 132, 141 (1963).
173. Northern States Power Co. v. Minnesota, 447 F.2d 1143, 1153-54 (8th Cir. 1971), *aff'd*, 405 U.S. 1035 (1972); Marshall v. Consumers Power Co., 65 Mich. App. 237, 263-64, 237 N.W.2d 266, 282 (1975); Note, *supra* note 70, at 783-84. In Huron Portland Cement Co. v. City of Detroit, 362 U.S. 440 (1960), the Court noted divergent federal and state interests, but upheld a Detroit air pollution ordinance. *Id.* at 445-46; *see* discussion note 60 *supra*. The Court added that the city ordinance did not go so far as to exclude the federally licensed ship from its port. 362 U.S. at 448. If the ordinance had actually prohibited use of the port, it may have been ruled invalid due to the dominant federal interest in maintaining national uniformity in interstate commerce. *Id.*; *see* text & note 77 *supra*.
174. See text & note 42 *supra*.
175. Ch. 1073, § 3, 68 Stat. 922 (codified as amended at 42 U.S.C. § 2013(d) (1970)).
176. *Id.*
177. Emphasizing the promotional purpose of the federal statute may not reflect the true congressional intent. Other declarations of purpose in the 1954 Act are essentially neutral relative to the use of nuclear power. *See* Hays, *State Power to Ban Nuclear Power Plants: The California Nuclear Safeguards Initiative as a Case in Point*, 6 ENVT'L L. 727, 740-42 (1976).
178. 447 F.2d 1143 (8th Cir. 1971), *aff'd*, 405 U.S. 1035 (1972).
179. *Id.* at 1153-54.

ultimate action may be construed as indicative of a congressional intent to preempt; any state legislation which disrupts this balance would be held invalid.[180] Insofar as state regulation on nonradiological grounds is concerned, if Congress gave primary importance to encouragement of the use of nuclear power, overshadowing the statute's other purposes and constraints, particularly protection of the public health and safety, it established an objective with which the states cannot interfere. The task is thus to determine how important encouragement was to Congress.

One possible interpretation of the promotional language is that it evinces a congressional determination that nuclear power must be used to meet the nation's energy needs.[181] Under this broad interpretation, state regulation is permissible only if it does not significantly hinder such development and utilization.[182] A second and more restrictive interpretation is that federal agencies—ERDA and NRC—should encourage the development and use of nuclear power by making nuclear fuel and the necessary technical information available, and by authorizing plant construction and operation. The NRC is then responsible for determining whether the use of nuclear power in a given instance is consistent with the protection of the public health and safety. Under this approach, state regulatory measures would be permissible provided they were not based on concerns over radiation hazards and would not have the effect of compromising federal health and safety standards.

No explicit statement has been made by Congress as to the precise meaning of this promotional language. The legislative history of the 1954 Act, however, indicates that the exercise of permissible state regulatory authority could in certain situations impede nuclear energy development and utilization pursuant to the Act.[183] This recognition precludes the conclusion that state regulation is permissible only if it does not hinder development and utilization. Moreover, the broad interpretation of the promotional language seems to assume that Congress

180. See text & notes 85-86 *supra.*

181. *See generally* Northern States Power Co. v. Minnesota, 447 F.2d 1143, 1153-54 (8th Cir. 1971), *aff'd,* 405 U.S. 1035 (1972).

182. *See* Parenteau, *supra* note 141, at 727 (states cannot prohibit construction of a federally approved plant); Note, *supra* note 70, at 783-84 (state regulation directed towards nonradiological hazards may not interfere with nuclear plant procedures for radiation releases authorized by the NRC). The type of state regulation contemplated here is that specifically recognized under section 271 of the 1954 Act and section 274(k) of the 1959 amendment. See text & notes 25, 38 *supra.*

183. Under 42 U.S.C. § 2238 (1970), the NRC may assume operation of a nuclear facility for which the operating license has been revoked. However, prior consultation with the appropriate state regulatory agency is required. *Id.* The legislative history of this section indicates that a state regulatory body may, in cases concerning public convenience and necessity, prohibit resumption of operation. *See Hearings on S. 3323 & H.R. 8862 to Amend the Atomic Energy Act of 1946 Before the Joint Comm. on Atomic Energy,* 83d Cong., 2d Sess. 642-43 (1954); Note, *supra* note 70, at 768.

has committed the United States to an energy program utilizing nuclear power. This assumption is subject to question. Although Congress did establish a comprehensive licensing program governing nuclear reactors,[184] it did not establish a concrete national energy program incorporating the use of nuclear power.[185] Consequently, under the 1954 Act, use of nuclear power was encouraged, but not mandated. In other words, an NRC license is "a permit to construct a power plant, not a Federal order to do so."[186] Although Congress, in the Energy Reorganization Act of 1974,[187] declared an eventual goal of making the nation self-sufficient in energy,[188] the Act did not specify the contribution nuclear power should make in the pursuit of this goal. Instead, the 1974 Act declared that the efficiency and reliability of all available energy sources were to be increased.[189] This Act did not expand and did little to clarify the federal interest with respect to nuclear power.[190] Therefore, it would seem that the promotional language of the 1954 Act was intended only as a general statement of encouragement to private utility companies. The lack of a comprehensive national energy program, in conjunction with the recognition of state regulatory authority, expresses no dominant federal interest in the promotion of nuclear power, vis-a-vis other energy sources.[191]

184. *See, e.g.*, 42 U.S.C. §§ 2073, 2092-2093, 2111, 2131-2133, 2201(b) (1970).

185. *See* Marshall v. Consumers Power Co., 65 Mich. App. 237, 263, 237 N.W.2d 266, 282 (1975); Anders, *The Need for Credible Nuclear Regulation*, 17 ATOM. ENERGY L.J. 123, 124-26 (1975). As a matter of general Presidential policy, President Gerald Ford, in his 1975 State of the Union Message, announced a goal that by 1985, 200 nuclear power plants should be in operation in the United States. 121 CONG. REC. 176 (1975). President Carter, on the other hand, follows the approach that nuclear power should be utilized solely as a last resort to fill the gap between the energy that is needed and energy that can be produced from other sources or imported. 123 CONG. REC. 3330 (1977).

186. Marshall v. Consumers Power Co., 65 Mich. App. 237, 259, 237 N.W.2d 266, 280 (1975).

187. Pub. L. No. 93-438, §§ 1-401, 88 Stat. 1233 (1974) (codified at 42 U.S.C. §§ 5801-5891 (Supp. V 1975)).

188. *Id.*, § 1 (codified at 42 U.S.C. § 5801 (Supp. V 1975)).

189. *Id.*

190. In fact, it has been argued that the 1974 Act, by emphasizing the development of all energy sources, diluted the promotional intent of the 1954 Act. *See* Hays, *supra* note 177, at 740, 742-43.

191. It has been stated that the Price-Anderson Act, Pub. L. No. 85-256, § 4, 71 Stat. 576 (1957) (codified at 42 U.S.C. § 2210 (1970)), under which federal funds are used to meet liabilities not covered by insurance from private sources in the event of a nuclear incident, and under which a liability limitation is specified, was enacted primarily to encourage the development and use of nuclear power. Note, *supra* note 70, at 742; *see* S. REP. No. 296, 85th Cong., 1st Sess. 1-3, *reprinted in* [1957] U.S. CODE CONG. & AD. NEWS 1803, 1803-05. While encouragement was clearly one objective of the Price-Anderson Act, Barton & Meyers, *supra* note 14, at 32, protection of the public was an equally important objective. *See* 42 U.S.C. § 2012(i) (1970). Further, the legislative history provides some basis for concluding that protection of the public was the primary objective. *See* S. REP. No. 296, *supra* at 15; Note, *supra* at 769 n.229. Under legislation extending the Price-Anderson Act until August 1, 1987, Act of Dec. 31, 1975, Pub. L. No. 94-197, 89 Stat. 1111 (codified at 42 U.S.C. § 2210 (Supp. V 1975)), the NRC recently amended its regulations with the objective of phasing out United States government indemnity by 1980. *See* 42 Fed. Reg. 46-

In the absence of explicit statements setting forth the scope of congressional promotion of nuclear power, it is helpful to look at other factors to determine whether this scope has been defined implicitly. Along with the vague promotional language, the 1954 Act clearly demands the protection of public health and safety.[192] Indeed, it was largely because of this objective that federal regulation was found to be required.[193] The statute emphasizes that no license can be issued unless there is adequate protection and safeguards against radiation hazards.[194] The NRC's application of this statutory directive, reflected in its regulations, demonstrates the priority position this consideration holds. Thus, in the area of radiation standards, not only must the actual regulatory standards be met, but, in addition, licensees are to maintain exposures and radioactive releases "as low as is reasonably achievable."[195] Licenses for utilization facilities can only be issued if there is a finding that public health and safety will not be endangered.[196] The process of site selection is designed to ensure that in the event of an accident, the risk of public exposure will be low.[197]

This emphasis on protection of the public health and safety present in the federal statutes and regulations has carried over to judicial decisions. The courts have consistently maintained that regulation of radiation hazards by the states has been preempted.[198] The willingness of courts to find preemption where radiation hazards are involved demonstrates the dominance and significance of the federal interest in protecting public health and safety. On the other hand, the courts have permitted states to regulate in nonradiation areas,[199] or have noted that such regulation would be valid,[200] despite the potential for discouraging

54 (1977). The new regulations also include provisions for increasing the current $560 million liability limit during the phasing out period. *See id.*; NUCLEAR NEWS, Feb. 1977, at 29-30. The Price-Anderson Act recently was held unconstitutional in Carolina Envt'l Study Group, Inc. v. United States Nuclear Regulatory Comm'n, 431 F. Supp. 203 (W.D.N.C.), *appeal docketed sub nom.* Duke Power Co. v. Carolina Envt'l Study Group, Inc., 46 U.S.L.W. 3068 (1977).

192. Ch. 1073, § 3(d), 68 Stat. 922 (codified at 42 U.S.C. § 2013(d) (1970)).

193. *Id.* § 2(d), 68 Stat. 921 (codified at 42 U.S.C. § 2012(d) (1970)). The NRC regulations go further, maintaining that the basis for federal regulation is restricted to the common defense, security, and radiological health and safety. 10 C.F.R. § 8.4(b) (1977).

194. Ch. 1073, § 103(d), 68 Stat. 937 (codified as amended at 42 U.S.C. § 2133(d) (1970)).

195. 10 C.F.R. § 20.1(c) (1977).

196. *Id.* § 50.40(c).

197. *Id.* § 100.10.

198. *See, e.g.*, Northern States Power Co. v. Minnesota, 447 F.2d 1143, 1151 (8th Cir. 1971), *aff'd*, 405 U.S. 1035 (1972); Marshall v. Consumers Power Co., 65 Mich. App. 237, 247-48, 237 N.W.2d 266, 274-75 (1975); New Jersey Dep't of Environmental Protection v. Jersey Cent. Power & Light Co., 69 N.J. 102, 112-15, 351 A.2d 337, 343-44 (1976).

199. *See* Northern Cal. Ass'n v. Public Utils. Comm'n, 61 Cal. 2d 126, 133, 390 P.2d 200, 204, 37 Cal. Rptr. 432, 436 (1964); Marshall v. Consumers Power Co., 65 Mich. App. 237, 247-48, 237 N.W.2d 266, 274-75 (1975).

200. *See* Northern States Power Co. v. Minnesota, 447 F.2d 1143, 1150 (8th Cir. 1971), *aff'd*, 405 U.S. 1035 (1972); New Jersey Dep't of Environmental Protection

the development of nuclear power. This would seem to indicate that courts grant lesser importance to encouragement than to protection of public health and safety. It can thus be argued that the federal government has an interest in encouragement only to the extent of enabling utilities to take advantage of nuclear power as they deem appropriate. The federal government's overriding interest, however, is in controlling the hazards of such use.[201] Through a comprehensive regulatory scheme, the NRC balances the risks to public health and safety against the benefits of nuclear power as a separate source of electricity.[202] This is not to suggest that the NRC's role is limited solely to a consideration of radiation hazards. The NRC must consider other aspects of nuclear power production, such as nonradiological environmental effects[203] and energy alternatives.[204] However, regulation of these and other nonradiological considerations are shared concurrently with the states.[205]

This analysis demonstrates that the federal interest is fundamentally directed to controlling radiation hazards so that nuclear power

v. Jersey Cent. Power & Light Co., 69 N.J. 102, 115 n.6, 351 A.2d 337, 344 n.6 (1976).

201. For a discussion of recent legislative developments supporting this view, see Appendix, *infra* at 1021. A further argument in support of a more limited view of the promotional language of 42 U.S.C. § 2013(d) (1970), at least as applied to thermal reactors, the type generally in use and being licensed today, is that the stated purpose of development has largely been accomplished. These reactors are very similar in design and substantial changes are not likely for some time. Indeed, the goal at the present time is standardization. *See generally* Muntzing, *Standardization in Nuclear Power*, 15 ATOM. ENERGY L.J. 21 (1973); Rogers, *The Development and Use of Regulatory Standards*, 14 ATOM. ENERGY L.J. 173 (1972).

First Iowa Hydro-Electric Coop. v. Federal Power Comm'n, 328 U.S. 152 (1946) has been cited to show an analogy between promotion of the development of natural water resources and that of atomic energy. *In re* Consolidated Edison Co., 2 NUCLEAR REG. REP. (CCH) ¶ 20,018 (N.Y. Sup. Ct. Nov. 26, 1975); Murphy & La Pierre, *supra* note 14, at 448. In *First Iowa*, the Court held that the state was preempted from requiring a Federal Power Commission licensee to obtain a state permit to construct a dam. 328 U.S. at 180-83. Arguably, *First Iowa* can be distinguished from the instant analysis, since the Federal Power Act, ch. 285, 41 Stat. 1063 (1920) (codified as amended at 16 U.S.C. §§ 791-828(c) (1970 & Supp. V 1975)), stated that licenses should be granted only to projects best adapted to a "comprehensive *plan* for improving or developing . . . waterways." 16 U.S.C. § 803(a) (1970) (emphasis added). The *First Iowa* Court referred to the proposed dam as a federal project and also stated that the Federal Power Commission had control over the comprehensive planning required by the Act. 328 U.S. at 164; *accord*, City of Tacoma v. Taxpayers of Tacoma, 357 U.S. 320, 334-36 (1958); Federal Power Comm'n v. Oregon, 349 U.S. 435, 445-46 (1955). Since the legislation concerned with nuclear energy is not intended as a comprehensive plan of development and the nuclear power plants are not solely federal projects, the analogy seems to be inapposite.

202. *See* Power Reactor Dev. Co. v. International Union, 367 U.S. 396, 404-07 (1961); Barton & Meyers, *supra* note 14, at 25. *See generally* 10 C.F.R. § 20.1(c) (1977). In Northern States Power Co. v. Minnesota, 447 F.2d 1143 (8th Cir. 1971), *aff'd*, 405 U.S. 1035 (1972), the court observed that "Congress vested the AEC with authority to resolve the proper balance between desired industrial progress and adequate health and safety standards." *Id.* at 1153-54.

203. Calvert Cliffs' Coordinating Comm. v. AEC, 449 F.2d 1109, 1123-24 (D.C. Cir. 1971).

204. Aeschliman v. United States Nuclear Regulatory Comm'n, 547 F.2d 622, 629 (D.C. Cir. 1976), *cert. granted sub nom.* Vermont Nuclear Power Corp. v. Natural Resources Defense Council, Inc., — U.S. —, 97 S. Ct. 1098 (1977).

205. *See* Marshall v. Consumers Power Co., 65 Mich. App. 237, 254-56, 237 N.W.2d 266, 278 (1975); Note, *Federal and State Responsibilities in the Environmental Control of Nuclear Power Plants*, 2 N.Y.U. REV. L. & SOC. CHANGE 20, 30-31, 36-37 (1972).

may be made available to the electrical power industry and the public. In order to meet these interdependent objectives, the court in *Northern States* felt that the authority to regulate radiation hazards necessarily must rest with the AEC, the concern being that states may be overly protective if they were to regulate such matters.[206] The *Northern States* decision, however, does not address limitations on statutory state regulation[207] imposed by the encouragement objective. These limitations will now be explored.

State Regulation of Nonradiological Hazards

Section 274(k) of the 1959 amendment to the Atomic Energy Act of 1954 provides that states may regulate nuclear power plants licensed by the NRC for nonradiological purposes.[208] State attempts to regulate under this section give rise to questions concerning their purpose and their impact on either the federal regulation of radiation hazards or federal promotional objectives. With respect to questions concerning the state's purpose, a measure enacted under the state's police power, bearing a reasonable relation to attainment of a proper objective and not discriminatory, should be upheld.[209] More difficult questions may arise when one considers the effect of the state measure on NRC licensed activities. Assuming the measure has a proper purpose, would it remain valid if it incidentally, but unintentionally, involved radiation hazards, or required that a nuclear plant not be built at a specific location?

Neither the 1954 Act nor the 1959 amendment directly addresses this type of question. The legislative history provides some assistance. Shortly after the preemption debate accompanying passage of the 1959 amendment,[210] the AEC indicated in a letter to the Joint Committee on Atomic Energy [JCAE] that state measures would be permissible if the effects on AEC licensed activities were only incidental.[211] Whether this means that the effect must be minor, or that it simply

206. Northern States Power Co. v. Minnesota, 447 F.2d 1143, 1153-54 (8th Cir. 1971), *aff'd*, 405 U.S. 1035 (1972). Should more stringent measures by the states be permitted, the court felt the uniformity necessary to achieve the desired balance would be destroyed. *Id.*

207. *See* 42 U.S.C. §§ 2018, 2021(k) (1970).

208. *Id.* § 2021(k). For the language of this statute, see text accompanying note 38 *supra.*

209. *See* Marshall v. Consumers Power Co., 65 Mich. App. 237, 247-49, 263-64, 237 N.W.2d 266, 274-75, 282 (1975); text & notes 112-17 *supra.*

210. This debate concentrated on the degree of preemption associated with the regulation of radiation hazards. *See 1959 Hearings, supra* note 27, at 488-96. The general conclusion reached was that some degree of preemption was intended, but the precise extent of preemption was left to the courts to resolve. *Id.* at 307-08; *see* Note, *Federal Preemption and State Regulation of Radioactive Air Pollution: Who is the Master of the Atomic Genie?*, 68 MICH. L. REV. 1294, 1303-14 (1970).

211. *1959 Hearings, supra* note 27, at 500.

must be motivated by an objective unrelated to radiation, is not clear.[212] The court in *Marshall v. Consumers Power Co.*[213] indicated that the effect of a state regulation would be permissible unless construction of nuclear power plants would be prevented;[214] any lesser effect would be acceptable.[215]

Clearly, those aspects of a nuclear power plant which are shared with conventional generating sources are properly subject to state control, since their regulation would not be grounded on concerns over radiation. For example, in the area of environmental regulation, states may exercise their traditional control with respect to water and air pollution. Under the Federal Water Pollution Control Act,[216] states can control water pollution through the water quality certificate[217] and the discharge permit.[218] By means of these devices, states can regulate thermal pollution, water consumption, and plant effluents other than radiation releases.[219] Similarly, in the area of air pollution, states may exercise authority delegated by the Environmental Protection Agency[220] to regulate plant emissions other than radiation releases.[221] Other control mechanisms clearly available to the states include local building

212. The Senate committee reporting on the bill implied the latter when it stated that the federal legislation is not meant to impair state regulatory authority based on permissible grounds. *See* S. REP. No. 870, *supra* note 36, at 12. To the extent that the Senate Report may be regarded as inconsistent with the AEC letter, the report takes precedence. *See* Northern States Power Co. v. Minnesota, 447 F.2d 1143, 1152 (8th Cir. 1971), *aff'd*, 405 U.S. 1035 (1972).

In analyzing the scope of state regulation in the case of a federally licensed ship, the Supreme Court in Huron Portland Cement Co. v. City of Detroit, 362 U.S. 440 (1960) stated that the licensee was not immunized from "operation of the normal incidents of local police power." *Id.* at 447. This would imply that effects of state regulation would be acceptable if they were motivated by a proper objective.

213. 65 Mich. App. 237, 237 N.W.2d 266 (1975).

214. *See id.* at 263-64, 237 N.W.2d at 282. Although the court was not specific, it may be inferred that this limitation was imposed partly because of a recognition that alternative sources of electricity are necessary. *Id.* at 263, 237 N.W.2d at 282. To say that the federal interest would preclude prohibition of all nuclear plants within a state's boundaries is to give independent life to the encouragement objective when faced with an otherwise valid state regulation. This approach is not inconsistent with the federal interest analysis presented previously, see text & notes 170-206 *supra*, since it was noted that the Energy Reorganization Act of 1974 emphasizes the exploitation of all energy sources. See text & notes 187-91 *supra*. Furthermore, the *Marshall* court may have substantially limited the effect of such encouragement when it stated that a state measure stopping short of complete prohibition within the state would be permissible. *See* 65 Mich. App. at 264, 237 N.W.2d at 282. This implies that a state could, as a practical matter, prevent construction at a particular location if valid state requirements were not met.

215. 65 Mich. App. at 264, 237 N.W.2d at 282. If the state measure prevented compliance with a federal regulation, however, it would be preempted even though based on a valid state purpose. *See* Huron Portland Cement Co. v. City of Detroit, 362 U.S. 440, 443, 448 (1960). See text & notes 62-71 *supra*.

216. 33 U.S.C. §§ 1251-1376 (Supp. V 1975).

217. *Id.* § 1341(a).

218. *Id.* § 1342(b)-(c).

219. *See* Parenteau, *supra* note 141, at 714-17.

220. 42 U.S.C. §§ 1857c-5, 1857c-6 (1970 & Supp. V 1975).

221. *Id.* § 1857c-5; *see* Parenteau, *supra* note 141, at 717. For a discussion of recent legislative developments, see Appendix, *infra* at 1021.

codes,[222] nondiscriminatory zoning requirements,[223] and abatement of common law nuisances.[224]

Thus, building code requirements imposed on conventional electrical generating stations for such items as electrical wiring, plumbing, structural design, materials, fire prevention, or machinery safety should also be enforceable where a nuclear plant is involved.[225] In the context of zoning, if a particular location had been zoned solely for residential purposes, a nuclear plant could be excluded.[226] Similarly, if location of an electrical generating plant involved nonradiation safety considerations, it should be considered by the state for a nuclear plant in the same way as a conventional facility.[227] Finally, if, because of its design, a plant's cooling system could cause fogging or other nuisance problems in the surrounding area, state remedial action should not be foreclosed.[228] If current technology could not abate a nuisance resulting from a proposed plant, selection of a new location might be required. Such a remedy would, of course, be highly impractical in the case where the plant has already been built,[229] and total abatement could not be required. In such a case, remedial measures should be fashioned which are practical and reasonable.[230]

A state may likewise regulate some aspects of nuclear power production which involve an indirect relation with radiation. An indirect relation is present where the NRC applies its regulatory requirements

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222. *See* Marshall v. Consumers Power Co., 65 Mich. App. 237, 251, 237 N.W.2d 266, 276 (1975) (dictum).

223. *See id; 1959 Hearings, supra* note 27, at 400.

224. Marshall v. Consumers Power Co., 65 Mich. App. 237, 237 N.W.2d 266 (1975).

225. *See* Estep & Adelman, *supra* note 8, at 60-61.

226. *See id.*; *1959 Hearings, supra* note 27, at 400.

227. *See* Northern Cal. Ass'n v. Public Utils. Comm'n, 61 Cal. 2d 126, 133, 390 P.2d 200, 204, 37 Cal. Rptr. 432, 436 (1964).

228. Marshall v. Consumers Power Co., 65 Mich. App. 237, 247, 237 N.W.2d 266, 274-75 (1975).

229. *See In re* Consolidated Edison Co., 2 NUCLEAR REG. REP. (CCH) ¶ 20,018 (N.Y. Sup. Ct. Nov. 26, 1975).

230. *See* Harrison v. Indiana Auto Shredders Co., 528 F.2d 1107, 1122-23 (7th Cir. 1976); Transcontinental Gas Pipe Line Corp. v. Gault, 198 F.2d 196, 198 (4th Cir. 1952). One of the problems which led to denial of relief for the plaintiff in Marshall v. Consumers Power Co., 65 Mich. App. 237, 237 N.W.2d 266 (1975), was that the amount of actual damages which would result from operation of the proposed plant, and even the construction of the plant, were too speculative. *Id.* at 266, 237 N.W.2d at 284. No present damages had been alleged. *Id.* An injunction preventing erection of the facility would also likely be denied where the anticipated nuisance is no more than possible. *See* Commerce Oil Ref. Corp. v. Miner, 281 F.2d 465, 474 (1st Cir. 1960). The problem thus created is that relief may be denied before construction because nuisance is difficult to show; it is also likely to be denied after construction because total abatement would be impractical. The best approach in resolving this problem may be to do a detailed evaluation of the likelihood and character of the nuisance when the plant design becomes fixed. If the evaluation shows an anticipated nuisance to be highly probable, an injunction would be appropriate. *See* Falkner v. Brookfield, 368 Mich. 17, 23-26, 117 N.W.2d 125, 128-29 (1962).

based upon concerns about radiation hazards and the consequences of those requirements affect subject matter within the realm of state regulation. When this occurs, the state should be permitted to regulate in its area and should take into account the consequences of the NRC requirements. If the state measure bears a reasonable relation to a legitimate state objective, it should be presumed valid as an exercise of the state police power.[231] If it is based on a purpose other than protection against radiation hazards, it would be saved from preemption under the 1959 amendment.[232] If the state statute's application infringes upon federal regulation of radiation hazards, it should still be upheld if the effect on the NRC licensed activity is a normal incident of the state measure, provided, of course, there is no compromise of federal standards.[233] The extreme effect of a statewide ban on all nuclear plants obviously would be impermissible.[234]

An example demonstrating how state action may indirectly supplement an NRC requirement concerns the "exclusion area" surrounding the plant, which is required by the NRC for security reasons and to ensure compliance with radiation standards in the event of an accident.[235] Full control of this area is designated to the licensee.[236] If the state should find that the exclusion area for a given plant site is too large, and might preclude public access to a desirable beach or lakefront area, the state should be able to require an alternative site.[237] A second example is a factual situation similar to that in *New Jersey Department of Environmental Protection v. Jersey Central Power & Light Co.*[238] Assuming the release of radioactive wastes diluted with large amounts of cold water would in fact cause the death of large numbers of fish due to the change in water temperature,[239] the state

231. See text & notes 112-17 *supra.*

232. See text & notes 31-38, 208 *supra.*

233. See text & notes 210-12 *supra.* In Huron Portland Cement Co. v. City of Detroit, 362 U.S. 440 (1960), the Court analyzed the scope of a local air pollution ordinance relative to its effect on the regulation of interstate commerce, and stated:

> [T]he Constitution when "conferring upon Congress the regulation of commerce, . . . never intended to cut the States off from legislating on all subjects relating to the health, life, and safety of their citizens, though the legislation might indirectly affect the commerce of the country. Legislation, in a great variety of ways, may affect commerce and persons engaged in it without constituting a regulation of it, within the meaning of the Constitution."

Id. at 443-44 (quoting Sherlock v. Alling, 93 U.S. 99, 103 (1876)).

234. See text & notes 210-15 *supra.*

235. 10 C.F.R. § 100.11(a)(1) (1977); *see id.* § 100.3(a) (defining exclusion area).

236. *Id.* § 100.3(a).

237. A zoning ordinance which would accomplish this end might be labeled discriminatory. Yet the legislative history behind the 1959 amendment would seem to uphold the ordinance. *See 1959 Hearings, supra* note 27, at 400, 500. Case law would also seem to support such an ordinance enacted under the state police power. *See* Construction Indus. Ass'n v. City of Petaluma, 522 F.2d 897, 909 (9th Cir. 1975), *cert. denied,* 424 U.S. 934 (1976).

238. 69 N.J. 102, 351 A.2d 337 (1976); see discussion note 151 *supra.*

239. 69 N.J. at 107-10, 351 A.2d at 340-41.

should be able to require system modifications or procedural changes to prevent the unnecessary killing of fish.[240] Having defined the limitations on state regulation of nonradiation hazards due to the federal intent of promoting nuclear power, attention will now be focused on the limitations on state regulation of utility rates and services.

State Regulation of Utility Rates and Services

The authority of any federal, state, or local agency to regulate the generation, sale, or transmission of electricity was left intact under the 1954 Act.[241] Thus, states may regulate nuclear power to the extent they control the rates and services of electric utilities.[242] If, however, a particular regulation is designed to protect against radiation hazards, it should not withstand judicial scrutiny.[243] The first type of activity which clearly is subject to state control is that aspect of nuclear power generic with other sources of electricity. Many states require that before a new generating station is constructed, a certificate of public convenience and necessity be obtained.[244] The state commission, before granting a certificate, must consider whether the utility will be able to provide adequate service to its ratepayers[245] and whether the addition will be in the public interest.[246] The state commission may also consider the time required to construct the new facility and the need for power in the area served by the utility company.[247] Since the state commission is under a statutory duty to regulate the rates charged by the utility company,[248] it would also look to the cost of the new plant.[249]

240. One possible solution would be for the plant operator to install additional onsite storage facilities for liquid radioactive wastes. The wastes could then be diluted with warm water and released after the plant resumed operation. With the additional storage facilities, there would no longer be a need to discharge the existing wastes before returning the plant to operation.

241. "Nothing in this chapter shall be construed to affect the authority or regulations of any Federal, State, or local agency with respect to the generation, sale, or transmission of electric power produced through the use of nuclear facilities licensed by the Commission . . . ." Ch. 1073, § 271, 68 Stat. 960 (codified as amended at 42 U.S.C. § 2018 (1970)).

242. Murphy & La Pierre, *supra* note 14, at 453; *see* Parenteau, *supra* note 141, at 718-21.

243. *See, e.g.*, Northern States Power Co. v. Minnesota, 447 F.2d 1143, 1151 (8th Cir. 1971), *aff'd*, 405 U.S. 1035 (1972); Marshall v. Consumers Power Co., 65 Mich. App. 237, 247-48, 237 N.W.2d 266, 274-75 (1975); New Jersey Dep't of Environmental Protection v. Jersey Cent. Power & Light Co., 69 N.J. 102, 112-15, 351 A.2d 337, 343-44 (1976).

244. *See, e.g.*, ARIZ. REV. STAT. ANN. § 40-281 (1974); CAL. PUB. UTIL. CODE § 1001 (West 1975); VT. STAT. ANN. tit. 30, § 248 (Supp. 1976).

245. *See In re* Trico Elec. Coop., Inc., 92 Ariz. 373, 380-81, 377 P.2d 309, 315 (1962); VT. STAT. ANN. tit. 30, § 248(b) (Supp. 1976).

246. *See* VT. STAT. ANN. tit. 30, § 248(b) (Supp. 1976); *see generally* Davis v. Arizona Corp. Comm'n, 96 Ariz. 215, 393 P.2d 909 (1964).

247. *See* Barton & Meyers, *supra* note 14, at 10; Parenteau, *supra* note 141, at 692.

248. *See, e.g.*, ARIZ. REV. STAT. ANN. § 40-203 (1974); CAL. PUB. UTIL. CODE § 701 (West 1975); VT. STAT. ANN. tit. 30, § 218 (1970).

249. *See In re* Iowa Power & Light Co., 2 NUCLEAR REG. REP. (CCH) ¶ 20,017 (Iowa State Commerce Comm'n Jan. 19, 1976); Barton & Meyers, *supra* note 14, at 10.

To the extent that the commission would consider these factors in granting a certificate of public convenience and necessity for a conventional generating station,[250] it could consider these factors for a nuclear station.[251]

In addition, those aspects of nuclear power which may be unique to nuclear plants and may be indirectly related to radiation hazards should also be considered subject to state control, where such aspects affect the rates and services of the licensee, provided, of course, the state control is grounded on purposes other than protection against radiation hazards, and federal standards are not compromised. For example, where the physical characteristics of the reactor fuel are changed due to radiation effects, and these changes render more severe the consequences of postulated reactor accidents, the NRC may require power limitations to be imposed.[252] These power limitations may affect the rates of the utility and the reliability of service to its consumers.[253] Since consideration of these possible consequences would not impair the federal superintendence of the field,[254] they could properly be taken into account by the state in granting plant approvals.[255] A second example concerns the recent decision prohibiting the present use of plutonium fuel.[256]

250. *See generally* Arizona Corp. Comm'n v. Palm Springs Util. Co., 24 Ariz. App. 124, 536 P.2d 245 (1975), *noted in* "Administrative Discretion in Public Utility Regulation," 18 ARIZ. L. REV. 585, 589 (1976); Grand Canyon Airlines, Inc. v. Arizona Aviation, Inc., 12 Ariz. App. 252, 469 P.2d 486 (1970).

251. A state regulatory agency may also inquire into nonradiological safety practices. *See* Barton & Meyers, *supra* note 14, at 10-11. Again, to the extent that such inquiries are made for a conventional generating plant, they could also be made for a nuclear plant. *See* Northern Cal. Ass'n v. Public Utils. Comm'n, 61 Cal. 2d 126, 133, 390 P.2d 200, 204, 37 Cal. Rptr. 432, 436 (1964).

252. *See* 2 ATOM. EN. L. REP. (CCH) ¶ 10,251 (AEC Release Aug. 24, 1973). In *In re* Iowa Power & Light Co., 2 NUCLEAR REG. REP. (CCH) ¶ 20,017 (Iowa State Commerce Comm'n Jan. 19, 1976), the Iowa State Commerce Commission, noting that two out of three nuclear facilities in Iowa were subjected to reductions in their power output pursuant to NRC directives, ordered investigations into a utility's plan to build a nuclear plant, to determine whether an additional nuclear plant would be a prudent investment.

253. *In re* Iowa Power & Light Co., 2 NUCLEAR REG. REP. (CCH) ¶ 20,017 (Iowa State Commerce Comm'n Jan. 19, 1976).

254. *See* Florida Lime & Avocado Growers, Inc. v. Paul, 373 U.S. 132, 141 (1963). The field of federal superintendence is the regulation of radiological health and safety. *See* text & notes 170-207 *supra*. Exercise of the state's authority in the manner outlined would not compromise health and safety standards.

255. Northern States Power Co. v. Minnesota, 447 F.2d 1143 (8th Cir. 1971), *aff'd*, 405 U.S. 1035 (1972) can be distinguished from the situation presented in the text. *Northern States* involved a direct regulation of a radiation hazard, whereas this situation represents the exercise of a permissible state power—the regulation of utility rates and services. Should the state consideration of the postulated consequences result in some action affecting a plant's construction or operation, such action should be allowed, as the effects would be the normal incidents of the state's authority. *See* text & notes 210-15 *supra*.

256. Natural Resources Defense Council, Inc. v. United States Nuclear Regulatory Comm'n, 539 F.2d 824, 842, 845-46 (2d Cir. 1976), *cert. granted sub nom.* Allied-General Nuclear Servs. v. Natural Resources Defense Council, Inc., — U.S. —, 97 S. Ct. 1578 (1977). Another example would be plant backfitting, under which the NRC may require an older existing plant to make plant modifications in order to meet present-day safety standards. *See* 10 C.F.R. § 50.109 (1977).

The effect of the prohibition may be an increase in the fuel cost for a proposed facility. The state could properly take this factor into account when considering utility applications.

Extending this analysis, under section 271 states should also be able to consider aspects of a nuclear plant which may be said to involve radiation effects more directly, yet also affect rates and services. This postulated state power would permit direct inquiry into areas generally considered the exclusive domain of the NRC.[257] A good example of this final category would be state evaluation of the effectiveness of reactor safeguards systems. The effectiveness of these systems may present hazards not only to the public health and safety, the exclusive domain of the NRC, but also to the safety of the plant itself.[258] Thus, upon considering rates and services in assessing an application for a certificate of public convenience and necessity, a state should logically be able to inquire directly into the workability of the emergency core cooling system relative to its effectiveness in protecting plant equipment. Permitting this type of state intervention would not compromise the federal interest of protecting the health and safety of the public, but would enable the state to assert and protect the economic interests of its residents.[259]

One of the obvious concerns which arises in this context is that states may implement more stringent measures than those imposed by the NRC and thus stultify the development of nuclear power.[260] In such cases, the validity of the state measure should depend on its reasonableness.[261] Assuming a congressional intent to promote the utilization of nuclear power, it is not clear that Congress intended to do so

257. In *In re* Wis. Elec. Power Co., 5 ATOM. EN. L. REP. (CCH) ¶ 16,631 (Wis. Pub. Serv. Comm'n May 1, 1975), the state Public Service Commission ruled that it could inquire into the design, safety, and reliability of nuclear power plants, although it could not formulate rules or regulations regarding radiological safety. *Id.* The reasoning may have been that if the plant is unreliable or unsafe, so that it would have to be shut down, the rates and services of the utility could be affected.

258. In cases where a safety system may be called upon to operate during some transient condition, its effectiveness in protecting the fuel and other reactor components from damage (such as overpressurization or overheating) may present economic considerations as well as public health and safety concerns. In addition, normal plant operation may present economic problems. For example, the result of normal reactor operation (including the normal effects of radiation) may cause fuel problems and necessitate a reduction in power output. *See* 2 ATOM. EN. L. REP. (CCH) ¶ 10, 251 (AEC Release Aug. 24, 1973). Also, the radiation levels present under normal operating conditions cause embrittlement of the reactor vessel, a consideration in assessing the number of years the plant may operate. *See* 10 C.F.R. § 50, app. G (1977); NUCLEAR NEWS, Nov., 1976, at 29-30.

259. Exclusive NRC regulation of hazards to the plant would not be mandated, so long as protection of public health and safety remained with the NRC. *See* text & note 45 *supra.*

260. *See* Northern States Power Co. v. Minnesota, 447 F.2d 1143, 1154 (8th Cir. 1971), *aff'd*, 405 U.S. 1035 (1972); Helman, *supra* note 135, at 67.

261. 447 F.2d at 1158 (Van Oosterhout, J., dissenting); *accord*, Huron Portland Cement Co. v. City of Detroit, 362 U.S. 440, 448 (1960).

if the economic interests of the states would be affected adversely.[262] General policy considerations also support this conclusion. An economical and reliable supply of electricity has been a traditional state interest.[263] This interest should not be defeated where the purpose of the federal regulation rests on a separate and distinct basis. So long as public health and safety are adequately protected under the federal statutes and regulations, the state should be permitted to further its legitimate interests which are independent of the federal interests.[264]

Concurrent Jurisdiction

In *Northern States Power Co. v. Minnesota*,[265] the Eighth Circuit took notice of the fact that, in enacting the 1959 amendment to the Atomic Energy Act of 1954, Congress did not intend for radiation hazards to be regulated concurrently by the states.[266] However, considering the large number of trained personnel presently available in the field, the wide-scale use of nuclear power, the willingness of states to assume a greater role, and the availability of expert consultants and contractors to provide assistance where necessary,[267] the situation today is far different than it might have been in 1959.[268] These factors provide a sound basis for congressional reassessment of the states' role in nuclear power. A cooperative effort between state and federal governments in regard to atomic energy could be as appropriate as it is in dealing with the problem of air pollution. Under the Clean Air Amendments of 1970,[269] states are encouraged to enact laws to prevent and control air pollution.[270] Where the effect of the pollution is multistate, states make recommendations to aid in establishing federal stand-

262. *See* Hays, *supra* note 177, at 742. Clear intent is required for the state regulation to be preempted. *See* text & notes 59-60 *supra*. National uniformity in plant design could still be achieved since those features required by the NRC to promote the federal interest would continue to be incorporated. See text & note 206 *supra*.

The economics of nuclear power is a subject of current debate. *See, e.g.*, NUCLEAR NEWS, July, 1977, at 28-30; NUCLEAR NEWS, May, 1977, at 24-25; NUCLEAR NEWS, Jan., 1977, at 35-36.

263. *See generally* Brasfield, *Regulation of Electric Utilities by the State Corporation Commission*, 14 WM. & MARY L. REV. 589, 589-93 (1973); Ileo & Parcell, *Economic Objectives of Regulation—The Trend in Virginia*, 14 WM. & MARY L. REV. 547, 547-49 (1973); Note, *Due Process Restraints on the Use of Automatic Adjustment Clauses in Utility Rate Schedules*, 18 ARIZ. L. REV. 453 (1976).

264. *See generally* Note, *supra* note 10, at 649-51; Note, *supra* note 210, at 1314-16.

265. 447 F.2d 1143 (8th Cir. 1971), *aff'd*, 405 U.S. 1035 (1972).

266. *Id.* at 1149-50. For a discussion of recent legislative developments, see Appendix, *infra* at 1021.

267. *See* Note, *supra* note 210, at 1312.

268. *See* Note, *Nuclear Power Plant Siting: Additional Reductions in State Authority?*, 28 U. FLA. L. REV. 439, 457 (1976).

269. Act of Dec. 31, 1970, Pub. L. No. 91-604, 84 Stat. 1676 (amending Act of Nov. 21, 1967, Pub. L. No. 90-148, 81 Stat. 485) (codified as amended at 42 U.S.C. §§ 1857-1858 (1970 & Supp. V 1975)).

270. 42 U.S.C. § 1857a(a) (1970).

ards.[271] Similarly, in the case of nuclear power, states should expressly be given some role by Congress in establishing radiation standards and performance requirements of safety systems. In its comments on the 1959 amendment, the JCAE noted that the legislation should be regarded as interim, and with the wide-scale use of nuclear energy, states should prepare for increased responsibilities.[272] Given sufficient availability of trained personnel and the presence of nuclear plants in most states,[273] the time for increased state and local responsibilities may be at hand.

CONCLUSION

Current projections on the use of nuclear power reveal that this source of energy will form a substantial part of the nation's energy supply during the years ahead. The trend of congressional action since 1946 has been in the direction of permitting the utilities industry to take advantage of this energy source as it sees fit and allowing the states to have a greater say in its regulation. With standardization being the goal of the NRC in the continued use of power reactors, and with the presence of such reactors in most states, the promotional aspect of the 1954 Act has lost some of its influence. This is especially true in light of the Energy Reorganization Act of 1974 and its emphasis on developing all sources of energy. Under the 1954 Act and the 1959 amendment, the promotional language may be viewed principally as weighing the benefits of nuclear power against the risks to the public health and safety. This view enables the states to exercise traditional police powers in regulating nuclear power to a greater extent than is generally acknowledged. Furthermore, the time may be ripe for the Congress to give concurrent jurisdiction to the states to participate in those areas over which Congress retained exclusive federal control. The message conveyed by the recent state activity is that the states are prepared to assume a broader role. The federal government and the courts should accord greater responsibility to the states.

271. *Id.* §§ 1857c-2(a) to -5.
272. S. REP. No. 870, *supra* note 36, at 9.
273. *See* NUCLEAR NEWS, Aug., 1976, at 73-78; text & notes 267-68 *supra.*

APPENDIX

Since this Note went to press Congress passed the Clean Air Act Amendments of 1977.[274] Under these amendments the regulation of radioactive air pollution from nuclear power plants was transferred from the NRC to the Environmental Protection Agency [EPA].[275] The effect of this transfer of responsibility, as well as the legislative history of the amendments, provide convincing support for the arguments presented in this Note.

As to the effect of the new legislation, radioactive air pollution will now be regulated under the Clean Air Act.[276] Since the Clean Air Act allows for state regulation,[277] states will now be permitted to adopt and enforce standards for radioactive air pollution from nuclear power plants which are more stringent than those adopted by the federal government.[278] Therefore, with respect to radiation hazards created by releases of radioactivity to the air, it is clear that Congress has chosen not to follow the holding in *Northern States Power Co. v. Minnesota*,[279] but rather to permit concurrent jurisdiction.[280]

The new legislation is also consistent with the federal interest analysis presented in this Note.[281] Congress not only recognized that states may enact more stringent standards than the federal government,[282] but also indicated that nuclear power enjoys no preferred status relative to other energy sources.[283] On the other hand, the new legislation supports the proposition that the dominant federal interest in regulating nuclear power is the protection of the public health and safety. If the NRC decides that the application of an emission standard for a nuclear power plant would endanger the public health or safety,

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274. Pub. L. No. 95-95, 91 Stat. 685.
275. *Id.* § 120, 91 Stat. 720.
276. 42 U.S.C. §§ 1857-1858 (1970 & Supp. V 1975).
277. *Id.* §§ 1857a(a), 1857c-5; *see* text & notes 220-21, 269-71 *supra.*
278. *See* H.R. REPORT No. 294, 95th Cong., 1st Sess. 43, *reprinted in* [1977] U.S. CODE CONG. & AD. NEWS 2207, 2251.
279. 447 F.2d 1143 (8th Cir. 1971), *aff'd*, 405 U.S. 1035 (1975); see text & notes 147-51 *supra.*
280. See text & notes 265-73 *supra.*
281. See text & notes 170-207 *supra.*
282. *See* H.R. REPORT No. 294, *supra* note 278.
283. *See id.*; see text & notes 170-91 *supra.*

In its report on the new legislation, the Committee on Interstate and Foreign Commerce stated:

> It is recognized that this provision may necessitate extra caution in the construction, operation, and maintenance of nuclear facilities than presently exists. . . . The costs of protecting the public health under the Clean Air Act must be considered a cost of doing business for the nuclear power industry, just as is the cost of meeting clean air requirements for coal-fired generating stations.

H.R. REPORT No. 294, *supra* note 278.

the standard will not apply.[284] In summary, the new amendments and their legislative history demonstrate a congressional intent that encouragement of nuclear power should be granted lesser importance than protection of the public health and safety.[285] Based on this further clarification of congressional intent, courts should be more willing to uphold state regulation of nonradiological hazards[286] and utility rates and services,[287] even where such regulation incidentally affects the federal regulation of radiation hazards, so long as the protection of the public health and safety is not compromised.

The effect of permitting greater involvement by the states may very well prove beneficial to the nuclear power industry. As noted by the Committee on Interstate and Foreign Commerce:

> Finally, in the Committee's view, public confidence in nuclear power will be assured only with adequate safeguards. Providing such safeguards is likely ultimately to lead to greater public confidence, and that, in turn, may reduce public resistance to the generation of needed energy by nuclear powerplants.[288]

284. Pub. L. No. 95-95, § 120, 91 Stat. 721.
285. See text & notes 170-97 *supra*.
286. See text & notes 208-40 *supra*.
287. See text & notes 241-64 *supra*.
288. H.R. REPORT No. 294, *supra* note 278.