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Exercising Police Powers to Control Spent Fuel and Other Radioactive Wastes

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EXERCISING POLICE POWERS TO CONTROL SPENT FUEL AND OTHER RADIOACTIVE WASTES

I. INTRODUCTION

With the proliferation of private nuclear power plants over the past twenty-five years,[1] the public has become increasingly concerned with the safe disposal of radioactive wastes.[2] Throughout the past decade, a number of states have enacted statutes affecting the disposition of spent nuclear fuel[3] within their borders. In general, these laws have been directed to the prohibition of both radioactive waste disposal sites within the state and transportation of spent fuel through the state.[4] The nuclear industry has challenged this legislation on federal pre-

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1. In 1980, there were seventy nuclear power plants licensed to produce electricity and more than ninety scheduled to come on line before 1990. SENATE COMMITTEE ON ENERGY AND NATURAL RESOURCES, LOW-LEVEL RADIOACTIVE WASTE POLICY ACT, S. REP. No. 548, 96th Cong., 2d Sess. (1980), *reprinted in* 1980 U.S. CODE CONG. & AD. NEWS 6933, 6934 [hereinafter cited as S. REP. No. 548].

2. There are a variety of articles concerning nuclear power plants and radioactive waste regulation. *See, e.g.*, Bauman & Platt, *May a State Say "No" to Nuclear Power? Pacific Legal Foundation Gives a Disappointing Answer*, 10 ENVTL. L. 189 (1979); Hart & Glaser, *A Failure to Enact: A Review of Radioactive Waste Issues and Legislation Considered by the Ninety-Sixth Congress*, 32 S.C.L. REV. 639 (1981); Jakesetic, *Constitutional Dimensions of State Efforts to Regulate Nuclear Waste*, 32 S.C.L. REV. 789 (1981); Meek, *Nuclear Power and State Radiation Protection Measures: The Impotence of Preemption*, 10 ENVTL. L. (1979); Ohio Decisions, *Public Utilities — Federal Preemption of State Regulation — Cleveland v. Public Utilities Commission*, 10 CAP. U. L. REV. 919 (1980); Woychik, *State Opportunities to Regulate Nuclear Power and Provide Alternative Energy Supplies: Part I and Part II*, 15 U.S.F. L. REV. 129, 441 (1980).

3. The Nuclear Energy Policy Study Group has defined spent fuel as "fuel elements removed from a reactor after several years of generating power. Spent fuel contains radioactive waste materials, unburned uranium and plutonium." S. Kenny, Jr., Nuclear Power Issues and Choices: Report of the Nuclear Energy Policy Study Group (1977) [hereinafter cited as the FORD/MITRI Study].

4. *See, e.g.*, Act of June 23, 1979, Ch. 350, 1979 N.H. Laws 400 (prohibiting the storage or disposal or both of radioactive waste within the state and coastal jurisdiction of the state); Town of Hookset Ordinances pursuant to N.H. REV. STAT. ANN. § 31.39 (amended 1981) (any proposed hazardous waste facility to be subject to voter approval); Spent Fuel Act, ILL. REV. STAT. Ch. 11.5, §§ 230-42 (Supp. 1981); Act of Dec. 8, 1982, Ch. 503, 1982 Mass. Acts 1163 (requiring voter approval of any new nuclear power plant or disposal facility); Act of Sept. 14, 1979, Ch. 519, 1979 Me. Laws 981 (acquisition of land for and construction of federal radioactive waste repository subject to voter approval).

emption grounds.[5]

The vast majority of states that utilize nuclear products do not have nuclear disposal facilities for irradiated materials within their borders.[6] Utilities are storing spent fuel at specifically designed ponds or storage basins on their reactor sites.[7] Of the six commercially operated low-level waste disposal facilities built in 1960's, only two remain in operation. Of these two, only one will accept low-level radioactive waste containing liquids.[8] Only recently has the federal government established a policy for long-term storage and disposal of high-level radioactive wastes.[9]

Thus, the storage and disposal problem of radioactive materials urgently requires a resolution. Various methods have been pursued by states to control internal hazardous wastes. Additionally, states have sought to regulate out-of-state radioactive materials within their borders. This Comment will explore the controversy stemming from federal limitations upon state regulation of radioactive materials. When and how can a state control these wastes?

II. ATOMIC ENERGY ACT

The Atomic Energy Act of 1946 established federal control over all fissionable materials.[10] The Atomic Energy Act (AEA) was amended in 1954 to provide for the state control over some nuclear and radioactive materials.[11] The AEA provided, in part,

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5. The preemption section of this article discusses the nuclear utilities' challenges to states' legislative attempts at prohibiting the transportation and disposal of spent fuels.

6. By and large, storage facilities are limited to temporary on-site storage capacities. S. REP. No. 548, *supra*, note 1 at 6934.

7. "A nuclear reactor must be periodically refueled and the spent fuel removed. This spent fuel is intensely radioactive. . . . The general practice is to store the [spent] fuel in a water-filled pool at the reactor site." Pac. Gas and Elec. v. St. Energy Resources Conserv., 461 U.S. ____, 103 S.Ct. 1713, 1717 (1983).

8. S. REP. No. 548, *supra* note 1 at 6938.

9. On December 20, 1982 Congress passed the Nuclear Waste Policy Act of 1982, Pub. L. No. 97-425, 96 Stat. 2201 [hereinafter cited as NWPA]. The NWPA established a federal policy for the disposal of high-level radioactive wastes and safe stabilization of low-level wastes. *See, id.* at 3792.

10. Atomic Energy Act of 1946, Ch. 724, 60 Stat. 755 (amended 1954).

11. Atomic Energy Act of 1954, S. REP. No. 1699, 83rd Cong., 2d Sess. 2, *reprinted in* 1954 U.S.CODE CONG. & AD. NEWS 3456, 3457-3460 [hereinafter AEA].

that:

> [T]he development, use, and control of atomic energy shall be directed [by the NRC] so as to make the maximum contribution to the general welfare, subject at all times to the paramount objective of making the maximum contribution to the common defense and security and. . . to promote world peace, improve the general welfare, increase the standard of living, and strengthen free competition in private enterprise.[12]

Congress believed that the national interest would be best served if source,[13] by-product[14] and special nuclear material[15] were regulated by the NRC. Federal regulation of these radioactive materials is premised on defense and security purposes, as well as protection of the health and safety of the general populous.[16]

In drafting the 1954 AEA, Congress specifically intended that the interpretation of the scope of federal preemption be left to the courts.[17] The 1954 AEA never clearly defined the respec-

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12. 42 U.S.C. § 2011(a)(b) amended 1954. *See*, Energy Reorganization Act of 1974, Pub. L. No. 93-438, 1974 U.S.CODE CONG. & AD. NEWS (88 Stat.) 1233. That Act abolished the Atomic Energy Committee and "all [its] functions. . . were transferred to. . . the Nuclear Regulatory Commission [hereinafter cited as NRC] and the Administrator of the Energy Research and Development Administration [hereinafter cited as ERDA], with certain exceptions."

13. "[S]ource material means (1) uranium, thorium, or any other material which is determined by the [NRC]. . . to be source material; or (2) ores containing one or more of the foregoing materials, in such concentration as the [NRC] may by regulation determine from time to time." 42 U.S.C. § 2014(z) (1957).

14. "[B]y-product material means (1) any radioactive material (except special nuclear material) yielded in or made radioactive by exposure to the radiation incident to the process of producing or utilizing special nuclear material, and (2) the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content." 42 U.S.C. § 2014(e) (amended 1978).

15. "[S]pecial nuclear material means plutonium, uranium enriched in the isotope 233 or in the isotope 235, and any other material which the [NRC]. . . determines to be special nuclear material artificially enriched by any of the foregoing, but does not include source material." 42 U.S.C. § 2014(aa) (1957).

16. *See* 42 U.S.C. § 2012(d)-(i) (1957).

17. *See, Hearings Before the Joint Committee on Atomic Energy on Federal-State Relationships in the Atomic Energy Field*, 86th Cong., 1st Sess. 308 (1959) (statement of Robert Lowenstein, Office of the General Counsel, U.S. Atomic Energy Commission); *see also*, Northern States Power Co. v. Minn., 447 F.2d 1143, 1155-56 (8th Cir. 1971), *aff'd*, 405 U.S. 1035 (1972). "Congress knew how to establish federal preemption by expressly providing therefore in clear language. No such language was incorporated into the Act."

tive regulatory roles of the state governments and the NRC. However, in 1959 the Cooperation with States Amendment[18] was added. The Amendment authorizes the NRC to enter into agreements with state governors providing for the discontinuance of NRC regulatory authority over source, by-product and special nuclear materials in quantities not sufficient to form a critical mass,[19] with the state.[20] The state, throughout the term of the agreement, is granted sole regulatory authority over the radioactive materials for the protection of public health and safety from radiation hazards.[21] Prior to the Amendment, state authority to regulate for health and safety purposes any radioactive or irradiated material used in a nuclear production or utilization facility had been preempted by the federal government. Subsequent to section 2021(b), states which have entered into an agreement with the NRC will have complete regulatory authority over by-product, source and special nuclear materials in quantities not sufficient to form a critical mass. However, pursuant to section 2012(c), the NRC shall have absolute authority over: construction and operation of any production or utilization facility,[22] export from or import into the United States of by-product, source, or special nuclear material, or of any production or utilization facility, disposal into the ocean or sea of by-product, source of special nuclear materials, disposal or radioactive materials the NRC has determined hazardous or potentially hazardous and therefore subject to a disposal license from the NRC.[23] Therefore, state actions to slow down or halt construction of nuclear power plants based on the plants' construction or operation will be preempted by federal authority.

In order to avoid any opportunity for dual authority between the states and the NRC, section 2021(d) authorizes the NRC to maintain full regulatory authority over source, by-product and special nuclear materials until such time as a state en-

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Id.

18. *See* S. REP. No. 870, 86th Cong., 1st Sess. 308, *reprinted in* 1959 U.S.CODE CONG. & AD. NEWS 2872.

19. *See generally* Lovins & Ross, *Nuclear Power and Nuclear Bombs*, 58 FOR. AFF. 1137 (1980). E. Lovins has defined critical mass as quantities of this [radioactive] material sufficient to create a nuclear fission chain reaction.

20. 42 U.S.C. § 2021(b) (1978).

21. *Id.*

22. Including nuclear power plants. *See* Pac. Gas & Elec. 163 S.Ct. at 1722, 1723.

23. 42 U.S.C. § 2021(c)(1980).

ters into an agreement with the NRC to assume full responsibility over such materials. To assure that state and NRC programs for radiation protection will be coordinated and compatible, section 2021(g) authorizes and directs the NRC to cooperate with the states in the formulation of standards for protection against radiation hazards.[24]

Under section 2021(j), the NRC, either by state request or upon reasonable notice and opportunity for a hearing, may terminate the agreement with the state and reassert its regulatory authority.[25] There will always be either federal or state regulatory authority over source, by-product and special nuclear materials. State and local regulatory authority for purposes other than radiation protection is preserved under section 2021(k).[26] Therefore, state regulation of nuclear power plants and their wastes by the authority of the traditional state regulatory powers other than health and safety will not be preempted by the NRC.

III. Traditional Police Power

Since *Village of Euclid v. Ambler Realty*,[27] states have been recognized as legitimate regulators of public health, safety, morals and general welfare. State regulation of land use is presumed a valid exercise of police powers when such regulation is reasonably related to those recognized state interests.[28] State

24. 42 U.S.C. § 2021(g) (1959) provides, "[t]he [NRC] is authorized and directed to cooperate with the [s]tates in the formulation of standards for protection against hazards of radiation to assure that [s]tate and NRC programs for protection against hazards of radiation will be coordinated and compatible."

25. 42 U.S.C. § 2021(j) (1959) provides, "[t]he [NRC], upon its own initiative after reasonable notice and opportunity for hearing to the state within which an agreement. . . has become effective, or upon request of the Governor of such state, may terminate or suspend its agreement with and reassert [its] licensing and regulatory authority. . . if the [NRC] finds that such termination or suspension is required to protect the public health and safety."

26. 42 U.S.C. § 2021(k) (1959) provides that "[n]othing 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."

27. 272 U.S. 365 (1926).

28. States are constitutionally authorized to regulate for purposes of public health, safety, morals and general welfare. *Id.* at 390, 319. *See also* Village of Arlington Heights v. Metropolitan Housing Development Corp., 429 U.S. 252, 264-68 (1977), holding no need for judicial review of legislative motives unless there is proof of regulation motivated by racially discriminatory purpose.

regulatory authority for purposes of land use was broadened in *Village of Belle Terre v. Boras*,[29] to include exclusionary zoning. In that case, the Supreme Court held that regulation for the protection of community values and characteristics and for the preservation of clean air is a legitimate exercise of state regulatory powers. Zoning for industries, power plants, hospitals and similar businesses that generate radioactive waste is a legitimate regulatory function of state and local governments.[30] However, licensing of nuclear facilities, including disposal facilities, is within the exclusive regulatory ambit of the NRC.[31] Additionally, under the AEA, the NRC maintains exclusive regulatory authority over spent fuel for purposes of public health and safety until a state enters into an agreement with the NRC to assume authority.[32]

The majority of state measures to regulate nuclear power plants and radioactive waste materials have been enacted to prevent or limit the transportation and disposal of out-of-state wastes for health and safety purposes. Only a minority of these regulatory endeavors have been premised on general welfare interests such as the economic burden states will encounter if nuclear power plants will be forced to shut down until adequate storage facilities are developed. Although health and safety has traditionally been the legitimate concern of the states, this state interest may be preempted where the federal government manifests and intent to regulate in that area.[33] Since the AEA pro-

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29. 416 U.S. 1 (1974).

30. N.R.C. Authorization Act for Fiscal Year 1980, Pub. L. No. 96-295, 94 Stat. 780 (1980), specifically authorizes states to impose certain siting and land use requirements for nuclear plants; *see also* 42 U.S.C. § 2021(k), which provides that "[n]othing 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* (emphasis added); *see also* Pac. Gas & Elec., 103 S.Ct. at 1726, (under the AEA, states still maintain their traditional authority over the usage of land).

31. *See* 42 U.S.C. §§2020, 2021(c), 2073(e), 2077(d), 2093(a), 2112(c), 2131-2140, 2231-2242, (1954-1977); *see also* U.S. v. City of New York, 463 F.Supp. 604 (Dist. Ct. N.Y. 1978) (federal government has authority under the AEA to license reactors for radiological health and safety).

32. 42 U.S.C. §2021(b) (1978).

33. Art. VI, §2 of the U.S. Constitution provides, "This Constitution and the Laws of the United States. . . shall be the Supreme Law of the Land . . . ." U. S. CONST. art VI §2. *See also* 1954 U.S. CODE CONG. & AD. NEWS at 3456. Rice v. Santa Fe Elevator Corp., 331 U.S. 218, 230 (1947), noted: "The historic police powers of the states were not to be superceded by [a] Federal Act unless that was a clear and manifest purpose of Congress."

vides for federal regulation of radioactive materials for health and safety purposes, state regulatory measures based on health and safety have been subject to preemption challenges.

IV. PREEMPTION

The Supremacy Clause[34] provides that the United States Constitution supercedes any inconsistent laws.[35] Thus, where a state statute obstructed a federal agency from conducting business,[36] the United States Supreme Court held "that the states have no power . . . to retard, impede, burden or in any manner control, the operations of the Constitutional laws enacted by Congress to carry into execution the powers vested in the [federal] government."[37] Therefore, when Congress exercises its legitimate regulatory authority in a particular area, under the Supremacy Clause the federal legislation can preempt any concurrent state regulation.

A. Commerce Clause

The regulation of commerce is a legitimate Congressional exercise of its constitutional power.[38] Commerce has been broadly described as anything that is in the flow or traffic between or among states.[39] Congressional regulatory authority under the Commerce Clause is applicable to all industries or businesses having a substantial affect on interstate commerce.[40] The only limitation upon the Congress' commerce power is

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34. U.S. CONST. art. VI § 2.

35. Marbury v. Madison, 1 Cranch 137, 176 (1803), held: "the Constitution is superior to any other law or legislative act."

36. *See generally*, McCullough v. Maryland, 4 Wheat 316 (1819) (Maryland law obstructed a U.S. bank from issuing bank notes).

37. *Id.* at 436.

38. U.S. CONST. art. I § 8: "Congress shall have the power to regulate commerce with foreign nations and among the several states and with the Indian Tribes."

39. Gibbons v. Ogden, 9 Wheat 1 (1824).

40. Nat. Labor Rel. Bd. v. Jones & Laughlin St. Corp., 301 U.S. A (1937) (Commerce Clause provides Congress with the power to regulate any commerce, including intrastate when there is a substantial effect on interstate commerce); *see also*, Wickard v. Filburn, 317 U.S. 111 (1942) (aggregate effect of violations of farming regulations on interstate commerce), and U.S. v. Darby, 312 U.S. 100 (1941) (Constitution places no restrictions on Congressional regulation or interstate commerce, therefore the Court will not look at Congressional motive or purpose).

found in the tenth amendment.[41] However, a state's interest must give way to the federal government's commerce power when the federal interest is demonstrably greater and where state compliance with federal standards is essential.[42]

A leading case regarding the need for state compliance with federal standards is *Philadelphia v. New Jersey*.[43] The case concerned a New Jersey statute which prohibited the importation of most "solid or liquid waste which originated or was collected outside the territorial limits of the state. . . ."[44] The statute distinguished common garbage from all forms of hazardous waste[45] and differs in that respect from state regulations of radioactive wastes. In looking at the constitutionality of the statute, the Court found the New Jersey regulation of garbage had not been preempted by federal legislation.[46] The Court noted, however, that "[a]ll objects of interstate trade merit Commerce Clause protection; [and] none is excluded by definition at the outset[47] . . .[Indeed] [t]he crucial inquiry. . . [is] whether [the statute] is basically a protectionist measure, or. . . a law directed to legitimate local concerns, with effects upon interstate commerce that are only incidental."[48] The Court found the effect of the

41. U.S. CONST. Amend. X (1791), "The powers not delegated to the United States by the Constitution, nor prohibited by it to the states are reserved to the states or to the people."

42. National League of Cities v. Usery, 426 U.S. 833, 856 (1976) (Blackmun, J., concurring). The Court in Hodel v. Virginia Surface Min. & Rec. Ass'n., 452 U.S. 264, 286-290 (1981), outlined a four-prong test from *National League of Cities* to determine when the federal government exceeds its commerce power: (1) federal regulation must attempt to regulate states qua states; (2) federal regulation must address matters that are indisputably matters of state sovereignity; (3) state compliance with the federal law must directly impair the state's ability to structure intergral operations in areas of traditional state functions; (4) the Court will also compare the extent of federal interest with the importance of state interest. *Id.* State regulations of spent fuel will generally fail under the *Hodel* test as the purpose of the AEA of 1946 was to ensure federal control and regulation over the field of atomic energy. *See generally* Atomic Energy Act of 1946, Ch. 724 § 1, Pub. L. No. 585, *reprinted in* 1946 U.S. CODE CONG. & AD. NEWS 722, 723.

43. 437 U.S. 617 (1978).

44. New Jersey Waste Control Act of 1973, Ch. 363, N.J. STAT. ANN. §§13:1I-13:1I-10 (West Supp. 1978) (repealed).

45. This Act did not apply to hazardous or chemical wastes. *See* Philadelphia v. New Jersey, 437 U.S. at 619. *See also* N.J. ADMIN. CODE 7:1-4:2 (Supp. 1977) (repealed).

46. Philadelphia v. New Jersey, 437 U.S. at 620.

47. *Id.* at 622. *See also* Bowman v. Chicago Northwestern R. Co., 125 U.S. 465, 489 (1888).

48. Philadelphia v. New Jersey, 437 U.S. at 624: "[s]tates are not free from constitutional scrutiny when they restrict [the movement of interstate commerce]."

statute would be the overt blockade of the flow of interstate commerce at the state's border. Accordingly, the Court held the law invalid as a form of economic isolationism and protectionism prohibited by the Commerce Clause.[49]

The Court left unanswered the question of whether protectionist legislation motivated by reasons other than the origins of commerce is constitutionally valid.[50] However, the Court has consistently found "parochial legislation" resulting in the isolation of one state from the rest to be invalid. The Eighth Circuit noted that "the processing and utilization of source, by-product and special nuclear material *must be regulated by the United States in the national interest* because of their affect [sic] upon interstate. . . commerce."[51] Since the measures to insulate states from spent fuels are isolationist and parochial they have been found invalid.[52] Similarly, measures in non-nuclear[53] states banning all forms of nuclear materials would probably be invalidated as isolationist. Indeed, the Ninth Circuit found a Washington State statute, which banned the transportation and disposal of out-of-state low-level waste, did not regulate (the waste) "even handedly" and therefore unconstitutional under the *Pike*[54] test.[55]

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49. *Id.* at 624-27.

50. *See, id.* at 626, 627: "But whatever New Jersey's ultimate purpose, it may not be accomplished by discriminating against articles of commerce coming from outside the state *unless there is some reason, apart from their origin, to treat them differently*" (emphasis added). As noted, the New Jersey statute exempted hazardous wastes; therefore this case can be distinguished on that issue, especially as there is ample reason (including the terrifically long half-life of some radioactive wastes) to distinguish common garbage from radioactive and other hazardous wastes.

51. Northern States, 447 F.2d at 1153 (emphasis in original).

52. *See generally*, Northern States, 447 F.2d 1143 and Washington State Bldg. & Const. Trades v. Spellman, 684 F.2d (9th Cir. 1982), *cert denied* 103 S.Ct. 1891.

53. Non-nuclear states here refers to states which have no major utilization or production facilities nor designated radioactive waste disposal areas. This is a difficult distinction since many states fitting this category have hospitals, research centers and universities experimenting with radioactive materials. *See generally*, G. Hart and K. Glaser, *supra*, note 2 at 650, 651.

54. *See* Pike v. Bruce Church, Inc., 397 U.S. 137, 142 (1978). The Court developed a balancing test where the state statute regulates evenhandedly to effectuate a legitimate local interest and its effect on interstate commerce is only incidental, then the Court will uphold the state law. Where the burden imposed on interstate commerce is clearly excessive to the putative local value, the state law will fail.

55. *See* Washington State Bldg. & Const. Trade, 684 F.2d 627.

B. Preemption of State Authority

Federal regulations will preempt a state's authority in areas subject to federal rule.[56] Atomic energy and its wastes are legitimately regulated by the federal government.[57] The only issue is the extent of the federal authority in the area. Nothing in the AEA declared the federal government as sole and exclusive regulatory authority over civilian radioactive wastes.[58] The legislative history of the AEA of 1954 reveals Congressional intent to allow the states some regulatory authority over radioactive materials.[59] In *Northern States*,[60] Minnesota, a nonagreement state, imposed additional regulations on the Monticello Nuclear Power Plant beyond the NRC requirements.[61] The Court of Appeals declared that radioactive waste releases from a nuclear power plant are within the control of the NRC over the operation and utilization of the plant.[62] Relying on Mr. Lowenstein's (of the AEC) testimony before the Joint Committee on Atomic Energy, the court held that the federal government impliedly reserved exclusive control over radioactive waste emissions.[63] The court found that the state had no authority to regulate radioactive effluents for health and safety purposes.[64] This ruling has been ap-

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56. *See generally*, FERC v. Mississippi, 456 U.S. 742 (1982) (allowing states the option to consider federal rules where federal government maintains preemptive power); Florida Lime and Avocado Growers, Inc. v. Paul, 373 U.S. 132 (1963) (no evidence of Congressional design to preempt field); Rice v. Santa Fe Elevator Corp., 331 U.S. 218 (1947) (where federal government intended exclusive authority, then the federal law prevails).

57. Atomic Energy Act of 1946, Ch. 724, 60 Stat. 755.

58. *See* Northern States, 447 F.2d at 1147. *See also* Campbell v. Hussey, 368 U.S. 297, 302 (1961) and Rice v. Santa Fe Elevator Corp., 331 U.S. at 235, 236, regarding Congress' express declaration of exclusive regulatory authority over a given activity.

59. AEA of 1954, *supra* note 11. Federal preemption may be implied, *inter alia*, by the aim and intent of Congress as revealed by the statute itself and its legislative history. *See also* Florida Lime and Avocado Growers, 373 U.S. at 147-150; Bethlehem Steel Co. v. N.Y. State Labor Relations Bd., 330 U.S. 767, 772 (1947); Northern States, 447 F.2d at 1146, 1147.

60. Northern States, 447 F.2d at 1145. This case has been a leading case in this area.

61. Minnesota asserted that regulation of radioactive waste releases to the environment was within a state's traditional police powers. The state also asserted the AEA of 1954 never preempted the state's authority to regulate radioactive waste releases from nuclear power plants, and, alternatively, had Congress intended to preempt this area of regulation, that did not preclude concomitant state regulation. *Id.*

62. *See id.*, at 1149.

63. *See, Hearing Before the Joint Committee on Atomic Energy, supra* note 17 at 306. *See also*, Northern States, 447 F.2d at 1149.

64. *See* Northern States, 447 F.2d at 1152.

plied to a variety of suits challenging states' radioactive waste legislation.[65] Subsequently, the Clean Air Act of 1977[66] was specifically written to counter the *Northern States* holding that the federal government maintained exclusive regulatory control over radioactive discharges.[67]

In recent years, federal regulatory commissions and the Supreme Court have been ceding some regulatory authority to the states. While the AEA does vest ultimate control over nuclear materials in the federal authorities, regulation by agreement states in compliance with the authority granted them by the agreement, is a valid exercise of the state's authority.[68]

C. Congressional Grants of Authority to States

Since the mid-1970's, Congress has developed several comprehensive programs which provide for cooperation among federal, state and local governments in the development and implementation of programs regarding state radiation protection measures.

1. Federal Water Pollution Control Act Amendments of 1972.

The F.W.P.C.A.[69] established a joint regulatory program between the Environmental Protection Agency (EPA) and state governments. State governments, under EPA guidelines, regulate the discharge of water pollutants, including the discharge of water containing radioactive materials.[70]

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65. *See* Train v. Colorado Pub. Int. Research Group, 426 U.S. 1, 14-17, 22-24 (1976). *See also* Pac. Gas & Elec., 103 S.Ct. at 1726. "Minnesota's effort to regulate radioactive waste discharges from nuclear power plants fell squarely within the field of *safety regulations reserved for Federal regulation.*" *Id.* (emphasis added).

66. Clean Air Act of 1977, Pub. L. No. 95-95, 91 Stat. 695 (1977). *See infra*, text accompanying notes 81-5.

67. *See* 1977 U.S. CODE CONG. & AD. NEWS, pp. 1523, 1524.

68. 42 U.S.C. § 2021(b) (1978) "During the duration of such an agreement, it is recognized that the state shall have authority to regulate the materials covered by the agreement for the protection of the public health and safety from radiation hazards."

69. Federal Water Pollution Control Act Amendments of 1977, Pub. L. No. 92-500, 86 Stat. 816 (1972) (codified at 33 U.S.C. §§ 1251-1376 (1976)). This legislation was subsquently amended by the Clean Water Act of 1977, Pub. L. No. 95-217, 91 Stat. 1566 (1977) (codified at 33 U.S.C. §§ 1251-1376 (Supp. I 1977)).

70. 33 U.S.C. § 1362(6) (1976).

In *Train v. Colorado Public Interest Research Group*,[71] Colorado P.I.R.G. charged the F.W.P.C.A. established EPA regulation over all radioactive materials covered in the AEA. The United States Supreme Court held that Congress, as reflected in the F.W.P.C.A.'s legislative history, did not intend the F.W.P.C.A. to alter the regulatory authority of the NRC over the discharge of source, by-product and special nuclear materials.[72] Thus, the F.W.P.C.A. does provide for state control over some radioactive discharges. However, under *Train*, a state may not enforce its regulatory power under the F.W.P.C.A. to control water pollution from nuclear power plant discharges.[73]

Stricter state regulations of radioactive water pollution in areas outside the domain of NRC authority will not be preempted as the F.W.P.C.A. specifically allows states to impose stricter standards than the EPA in preventing, reducing and eliminating pollution.[74]

2. Safe Drinking Water Act of 1974, As Amended.

Similar to the F.W.P.C.A., the Safe Drinking Water Act[75] also calls for a joint EPA-state program in regulating allowable contaminants in public water systems.[76] Radiological substances fall within the Congressional definition of contaminants.[77]

The Safe Drinking Water Act requires the enforcement of standards of state regulatory agencies to be as strict as federal EPA standards.[78] Furthermore, the Safe Drinking Water Act places primary enforcement responsibility for public water sys-

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71. 426 U.S. 1 (1976).

72. *Id.* at 14-20.

73. *Id.* at 11, 22-25. *Train* distinguished radioactive materials subject to control requirements under F.W.P.C.A. from materials covered by the AEA. The Court concluded that some of the materials covered by the F.W.P.C.A. included radium and accelerator produced isotopes but that such materials do not include source, by-product and special nuclear materials, which are subject to NRC regulations.

74. 33 U.S.C. §§ 1370, 1251(b) (1976).

75. Safe Drinking Water Act of 1974, 42 U.S.C. §§ 201, 300(f) to 300(j-9) (1976) (amended 1977).

76. 42 U.S.C. § 300f(6) (1976). The domain of the Act's regulatory authority extends as well to underground sources of drinking water.

77. H.R. REP. No. 1185, 93rd Cong., 2d Sess. 16 (1974), *reprinted in* 1974 U.S. CODE CONG. & AD. NEWS 6454, 6469.

78. 42 U.S.C. § 300(g)-(z) (1976).

tems upon the state.[79] The Safe Drinking Water Act was amended in 1977[80] to provide for federal compliance with federal, state and local authority over drinking water supplies and underground injection. The Safe Drinking Water Act contemplated state regulatory authority over areas of radiological contamination; thus it suggests Congress did not intend for the federal government to have supreme regulatory authority over all radioactive materials. Under this Act, the state government in compliance with the federal government can regulate radioactivity contaminated water.

3. Clean Air Act Amendments of 1977.

The Clean Air Act as amended[81] clarified state regulatory powers over radioactive pollutants[82] "which may reasonably be anticipated to endanger public health. . . [or]. . . to result in an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness."[83]

The EPA is required to delegate regulatory authority over commercial nuclear facilities to states which have submitted procedures deemed adequate by the EPA.[84] The states then become direct regulatory authority over nuclear facilities and radioactive materials. Nuclear facilities and materials under state regulation must meet state-imposed standards which are as strict as (or stricter than) EPA guidelines.[85] This legislation was intended to nullify the ruling in *Northern States* and to strengthen state regulatory authority in the nuclear sphere. Thus, under the Clean Air Act, states may impose stricter than federal standards on the nuclear industry in order to control radioactive air pollutants.

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79. *Id.*

80. Safe Drinking Water Act Amendments of 1977, 42 U.S.C. §§ 300(f) to 300(j)-10, 7410-7626 (Supp. I 1977).

81. Clean Air Act of 1977, 42 U.S.C. §§ 7401-7642 (Supp. I 1977).

82. Including source, by-product and special nuclear materials, 42 U.S.C. § 7422 (1977).

83. 42 U.S.C. § 7422 (1977).

84. *Id.* § 7412(d)(1) (1977).

85. *Id.* § 7416 (1977). *See also* H.R. CONF. REP. No. 564, 95th Cong., 1st Sess. 143 (1977), *reprinted in* 1977 U.S. CODE CONG. & AD. NEWS 1502, 1523-1524.

4. Hazardous Materials Transportation Act of 1974.

Congress passed the Hazardous Materials Transportation Act[86] (H.M.T.A.) because of its concern with the safety hazards involved with the the transportation of hazardous wastes,[87] including radioactive materials. The H.M.T.A. empowers the Secretary of Transportation to determine what materials will be designated as hazardous wastes[88] and to issue regulations governing the transportation of hazardous materials.[89] Section 1811 states:

> (a) Except as provided in subsection (b) of this section, any requirement, of a State or political subdivision thereof, which is inconsistent with any requirement set forth in this title, or in a regulation issued under this title, is preempted.
>
> (b) Any requirement, of a State or political subdivision thereof, which is not consistent with any requirement set forth in this title, or in a regulation issued under this title, is not preempted if, upon the application of an appropriate State agency, the Secretary determines, in accordance with the procedures to be prescribed by regulation, that such requirement (1) affords an equal or greater level of protection to the public than is afforded by the requirements of this title or of regulations issued under this title and (2) does not unreasonably burden commerce. Such requirement shall not be preempted to the extent specified in such determination by the Secretary for so long as such State or political subdivision thereof continues to administer and enforce effectively such requirement.[90]

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86. Hazardous Materials Transportation Act of 1974, 49 U.S.C. § 170(6)(a), 6(6)(iv), (14), (17),; 49 U.S.C. §§ 1471-1472, 1655, 1801-1812 (1976).

87. 49 U.S.C. § 1801 (1976). The purpose of H.M.T.A. is to "improve the regulatory and enforcement authority of the Secretary of Transportation to protect the nation adequately against the risks to life and property which are inherent in the transportation of hazardous materials in commerce."

88. *Id.* § 1803 (1976), "The materials so designated [as hazardous wastes] . . . include. . . radioactive materials. . . ."

89. *Id.* §§ 1804(a), 1805(a) (1976).

90. 49 U.S.C. § 1811 (1975).

Thus, the provision provides for state regulations, not inconsistent with the H.M.T.A., over the transportation of nuclear materials and spent fuel to be stricter than federal regulations. However, those regulations may not unreasonably burden interstate commerce.[91]

An effort to regulate the transportation of radioactive materials, *City of New York v. United States Department of Transportation*,[92] arose from a New York City ordinance[93] banning the transportation of radioactive materials through densely populated New York City. Since 1976, Long Island, New York, has shipped all spent fuel by barge across the Long Island Sound to New London, Connecticut.[94] The New York City measure would have prohibited commercial transportation of radioactive materials by motor vehicle through the City.[95] Moreover, it would have prevented any highway shipment of spent fuel from Long Island, given that all roads from Long Island pass through New York City.

During this period various locations throughout the United States were enacting regulations concerning the transport of radioactive materials. The Department of Transportation (DOT), concerned that local regulations would lead to inconsistency and thereby diminish the overall safety, invited comment on whether the Federal Government should subject radioactive materials to more stringent highway routing requirements.[96] In 1981, DOT published a Final Rule known as HM-164.[97] The Final Rule requires motor vehicle carriers of large-quantity shipments of radioactive materials to travel by interstate highways, except where

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91. *See* Philadelphia v. New Jersey, 437 U.S. 617. *See also*, Hughs v. Oklahoma, 441 U.S. 322 (1979) (state law forbidding transportation out-of-state of minnows held to overtly block the flow of interstate commerce).

92. 715 F.2d 732 (2d Cir. 1983), *appeal dismissed*, 52 U.S.L.W. 3625 (U.S. Feb. 27, 1984)(No. 83-770).

93. N.Y.C., N.Y., HEALTH CODE § 175.11 (1977).

94. The regulation would have prevented shipments through New York City of spent fuel from Brookhaven National Laboratories and the Shoreham Nuclear Power Plant in Long Island. *See* City of New York v. United States Department of Transportation, 539 F. Supp. 1237, 1243, 1244 (S.D.N.Y. 1982) (overruled on other grounds 715 F.2d 732).

95. City of New York, 715 F.2d at 736.

96. *Id.* at 737.

97. 46 Fed. Reg. 5298 (January 19, 1981) (codified at 49 C.F.R. §§171-173, 177 (1982)).

a bypass or beltway around a city is reasonably available.[98] New York City's regulation is inconsistant with the Final Rule because HM-164 provides for highway transportation of radioactive materials, and the City's regulation prohibits transportation of radioactive materials by road through the City.

In addition to HM-164, DOT released a Final Regulatory Evaluation and Environmental Assessment. The Assessment concluded that HM-164 would not have a significant impact on the environment and therefore an Environmental Impact Statement was unnecessary.[99]

New York City continued to urge DOT to consider barging large-quantity radioactive materials around high density centers that lacked circumferential highways. That proposal was turned down.[100] DOT also rejected New York's application for a non-preemption ruling of its regulation.[101] The Second Circuit Court concluded that under H.M.T.A. the Secretary of Transportation was not required to use the safest mode of transportation. Rather, the court believes DOT need only use its centralized system of regulation to develop acceptable safety measures for all modes of transportation.[102] Although the court found that DOT

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98. City of New York, 715 F.2d at 736.

99. *Id.* at 738. DOT concluded that although there was a risk that trucking large-quantity shipments of radioactive materials through densely populated areas did create some risk, that risk, on the basis of "overall risk assessment" did not have a significant impact on the environment. *Id.*

The district court in City of New York v. United States Department of Transportation, 539 F. Supp. 1237, (overruled on other grounds, 715 F.2d 732) held HM-164 invalid because it failed to meet the requirements of N.E.P.A. to prepare an Environmental Impact Statement assessing all appropriate alternatives available involving transportation of nuclear materials through New York City in order for DOT to make a rational finding of the safest method of nuclear material transportation. *Id.* at 1293.

100. City of New York, 715 F.2d at 739.

101. *Id.* at 739. *See also* S. REP. No. 1347, 93rd Cong., 2d Sess. 25 (1974), *reprinted in* 1974 U.S. CODE CONG. & AD. NEWS 7669. The Senate Committee on Commerce noted that 49 U.S.C. § 1811 "[s]ubsection (b) sets up the mechanisms by which a state. . . can apply to avoid preemption upon a showing that the regulation in question provides protection that is equal to or better than that provided by the Federal regulation." S. REP. No. 1192, 93rd Cong., 2d Sess. 37, 38 (1974).

New York City had declared that its regulation provided for a safer means of transportation of radioactive materials than HM-164 and that it did not unreasonably burden interstate commerce. City of New York v. United States Department of Transportation, 539 F. Supp. at 1256 (*overruled* 715 F.2d 732).

102. City of New York, 715 F.2d at 740, 741. The court noted that the inclusion of subsection (b) in 49 U.S.C. § 1811 was "[a] further clue that Congress did not intend H.M.T.A. regulations to maximize public safety." *Id.* at 740.

must consider alternatives to highway shipment of radioactive materials,[103] it condoned DOT's limitation of the alternatives to transportation by highway.[104] Furthermore, the court found that the DOT's Environmental Assessment, finding HM-164 would not significantly affect the environment, "did not violate N.E.P.A. in deciding that an [Environmental Impact Statement] was not required."[105]

The court found that the New York City prohibition of motor vehicle shipments of radioactive materials was preempted by H.M.T.A.. The court dismissed New York City's contention that a non-preemptive ruling should be granted, stating that such a request was premature.[106]

5. Summary of Regulatory Acts

The F.W.P.C.A., Safe Drinking Water Act, Clean Air Act and H.M.T.A., are an indication of the general intent of Congress since the passage of the AEA and its subsequent amendments, to clarify the respective areas of state and federal regulation of nuclear and radioactive materials. The Acts, by providing for state regulation in areas previously regulated solely by federal law, allow the states greater degrees of regulatory authority over these materials. These Acts show that Congress has differentiated areas subject to its regulatory authority. Congress has clarified its intent to preempt specific areas of nuclear regulation and has provided the opportunity to regulate nuclear and radioactive materials. Although the Clean Air Act prohibits state regulation of radioactive water pollutants from a nuclear power plant, the Clean Air Act and subsequent Acts specifically grant states the authority to regulate radioactive air pollutants, including any discharges from nuclear power plants.[107] Although these acts suggest a Congressional intent for states to become more involved in the regulation of radioactive materials and spent fuel, under the authority of these Acts, states are empowered to control specific aspects of the nuclear fuel cycle.

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103. *Id.* at 742. The court noted that highway shipment of radioactive materials would increase low-level radiation on interstate highways.

104. *Id.* at 743.

105. *Id.* at 745.

106. *Id.* at 752.

107. *See supra* text accompanying notes 69-106.

V. Radioactive Waste Policy Acts

For more than twenty years, privately operated nuclear power plants have generated a massive volume of spent fuel and other radioactive wastes of various lifetimes and toxicities.[108] Throughout this period, the federal government has not formulated a policy concerning the long-term storage or disposal of these radioactive wastes.[109] The amount of radioactive wastes already produced coupled with the magnitude of wastes to be produced by the nuclear power plants scheduled to come on line within the next few years poses a significant problem in need of immediate regulation.[110]

A. Low-Level Waste Policy Act of 1980

Most nuclear power plants have on-site storage ponds specifically designed for temporary storage of spent fuel. NRC regulations provide for federal authority over these on-site storage areas.[111] In 1980, Congress passed the Low-Level Radioactive Waste Policy Act to establish a program for federal storage and disposal of spent fuel from civilian nuclear power plants.[112] From the inception of the nuclear industry, the federal government has encouraged it to reprocess[113] spent fuels. However, in

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108. According to the Ford/Mitre Study, *supra*, note 3 at 183, plutonium-239, which is a prevalent isotope in spent fuel, has a half-life of 24,000 years. Plutonium-238 has a half-life of 13 years and is also present in spent fuel. "The largest risk from plutonium is through inhalation of small particles which become lodged in the respiratory tract. Plutonium present in the lungs can induce cancer, it can also translocate with the same effect to other tissues. . . ." *Id.* at 183.

109. *See* Nuclear Waste Policy Act of 1982, H.R. Rep. No. 97-491 (parts I and II) (1982) *reprinted in* 1982 U.S. Code Cong. & Ad. News 3842.

110. New Hampshire's Speaker's Report on Hazardous Waste, 27 (1980) at 1673, notes the EPA estimated that approximately 5-7 million metric tons of hazardous wastes are generated each year in the United States. The EPA estimated that 90 percent of these wastes are disposed of improperly.

111. *See* 10 C.F.R. § 150.15.

112. Low Level Radioactive Waste Policy Act of 1980, 42 U.S.C. § 2021(b)(c)(d) (1980) (hereinafter L.L.R.W.P.A.). The purpose of the Act is to "[e]stablish a Federal program for interim storage of spent nuclear fuel away from the reactor. . . [and] to set forth a Federal policy to initiate a program for the disposal of nuclear waste from civilian activities. . . ." S. Rep. No. 548, 96th Cong., 2d Sess., *reprinted in* 1980 U.S. Code Cong. & Ad. News 6933. The L.L.R.W.P.A. was written to clarify the "enormous uncertainty" the public has regarding the regulatory problems of spent fuel storage. *Id.* at 6949.

113. Reprocessing is an operation to extract the useful uranium and plutonium from

April of 1977, President Carter shelved the commercial reprocessing of spent nuclear fuel. Since this, the nuclear industry and the federal government have sought the development of an away-from-reactor (A.F.R.) storage site.

Utilities are currently storing spent fuel at specifically designed ponds or storage basins on their reactor sites.[114] These storage ponds were developed solely for short-term use, with limited storage capacities. Since the reprocessing program has been indefinitely put aside, large quantities of spent fuel are accumulating at these on-site storage facilities. Additionally, only two of the six commercially operated low-level waste disposal facilities built in the 1960's remain in operation.[115] If these storage ponds reach capacity level, the reactors will have to be shut down until an alternative disposal or storage site can be arranged. Additionally, the health risks to the public will increase without adequate reprocessing and storage facilities due to the continual buildup of spent fuel.[116]

The L.L.R.W.P.A. vested ultimate responsibility in the federal government for radioactive waste from civilian nuclear power plants. The policy behind the L.L.R.W.P.A. is to encourage states to manage spent fuel and other radioactive wastes on a regional basis. The L.L.R.W.P.A. promotes the establishment of interstate compacts among several states.[117] Effective January 1, 1986, states may enter into regional compacts for the disposal of civilian spent fuel from nuclear power plants in a region. At that time, under the L.L.R.W.P.A. regional compact, states may exclude spent fuel from noncompact states.[118] The

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spent fuel. *See* 1980 U.S. CODE CONG. & AD. NEWS 6937. The Ford/Mitre Study Group, *supra* note 3 at 44, defines reprocessing as "[t]he chemical and mechanical process by which plutonium-239 and the unused uranium-235 are recovered from spent reactor fuel."

114. *See* 1980 U.S. CODE CONG. & AD. NEWS 6938. Approximately three million cubic feet per year of low-level waste is generated in the United States; 30-40% of that low-level waste stems from medical use.

115. Only one of these sites will accept low-level radioactive wastes containing liquids. *See* 1980 U.S. CODE CONG. & AD. NEWS, *supra*, note 106 at 6938.

116. *See* Ford/Mitre Study, *supra*, note 3 at 186.

117. Provided these compact states have worked out a comprehensive system for the disposal and interim storage of civilian spent radioactive fuel. *See* 42 U.S.C. § 2021(d)(B) (1980).

118. 94 Stat. 3347; *see also, supra*, text accompanying notes 22-3, regarding 42 U.S.C. § 2021(d) (1980).

compacts may be established upon Congressional approval and are subject to a Congressional review every five years.[119]

1. The Low-Level Radioactive Waste Policy Act and Current State Regulatory Attempts.

The L.L.R.W.P.A. renders contemporaneous state attempts to create exclusive regional compacts premature. State acts, such as the Illinois Spent Fuel Act[120] and the Washington State Radioactive Waste Storage and Transportation Act of 1980,[121] which ban the storage and transportation of all nonmedical radioactive waste generated outside the state, cannot be authorized under the L.L.R.W.P.A. until 1986.[122] Thus, until 1986, state regulatory attempts in the form of compacts will likely be found to be unduly burdensome on commerce.[123] Additionally, if the regional compacts are to be upheld, they must be managed under the auspices of Congress.

It remains questionable whether such exclusive laws will survive judicial scrutiny after 1986 in light of the United States Supreme Court's stand against parochial, isolationist legislation.[124] However, spent nuclear fuel is extremely different from nonradioactive waste and future legislation pertaining to radioactive waste storage and disposal should be so distinguished as the public has an increased concern due to the potential magni-

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119. *See generally* L.L.R.W.A., *supra*, note 106.

120. Illinois Spent Fuel Act, ILL. REV. STAT. Ch. 11.5 §§ 230-42.

121. The WA State Radioactive Waste Storage and Transportation Act, adopted by the voters initiative measure No. 383 was overruled in Washington State Bldg. & Const. Trades v. Spellman, 684 F.2d 627 (9th Cir. 1982), *cert denied* 103 S.Ct. 1891. The initiative was also held to be in violation of the Commerce Clause. *Id.* at 630.

122. *See* ILL. REV. STAT. Ch. 11.5 §§230-42. *See also* Illinois v. General Electric Co., 18 Env't Rep. Cas. (BNA) p. 1254 (7th Cir., July 13, 1982) (finding a state initiative which prohibited out-of-state spent fuel shipments into the spent nuclear fuel storage facility at Morris, Grundy County, Illinois, to be per se discriminatory under *Pike* and *Philadelphia v. New Jersey*). California's San Onefre nuclear power plant ships its spent fuel to the Illinois facility. The Seventh Circuit Court, relying on *Northern States* and *Train*, rather than relying on the provisions of the L.L.R.W.P.A., found the interstate compact language of the initiative preempted by the AEA. This position exemplifies many of the courts who have wrestled with these types of issues and continue to fall back on case law (prior to the Congressional Acts of the mid-1970's granting regulatory authority to the states) which held the federal government enjoyed exclusive authority in matters of nuclear or radioactive material regulation.

123. *See* Philadelphia v. New Jersey, 437 U.S. 612; Hughs, 441 U.S. 322.

124. *See* Philadelphia v. New Jersey, 437 U.S. 612; Hughs, 441 U.S. 322.

tude of health risks and the economic burden that high capacity storage sites can cause.[125]

B. Nuclear Waste Policy Act of 1982

Congress enacted the Nuclear Waste Policy Act of 1982[126] (N.W.P.A.) to establish a federal program for the development of permanent disposal sites for high-level nuclear waste and spent fuel. The N.W.P.A. also sets standards for the stabilization and long-term protection of low-level radioactive waste disposal sites. Regulation of high-level radioactive waste is federally assumed. Any low-level radioactive waste is regulated by the owners or operators of low-level waste storage sites.[127] The N.W.P.A. authorizes the Secretary of Energy to "assume custody of low-level radioactive waste sites following termination of licenses for such sites,"[128] or where title is turned over to the Secretary of Energy.

The N.W.P.A. allows the owners and operators of civilian nuclear power plants to construct additional temporary on-site storage ponds[129] when necessary for additional storage of spent fuel until the permanent disposal and storage sites are completed.[130] Furthermore, the N.W.P.A. requires the nuclear power plant owners and operators to maximize their use of temporary on-site storage facilities, as well as transferring spent fuel to other plant sites that have additional storage capacity. Should all the temporary storage facilities be utilized, the federal government, as a last resort, will assume authority for storage at federal nuclear defense sites.[131]

1. The Nuclear Waste Policy Act of 1982 and State Regulation.

Construction of additional on-site storage facilities would be

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125. *See, supra* text accompanying notes 102-04.
126. Nuclear Waste Policy Act of 1982, 96 Stat. 2201.
127. *Id.*, § 221(a).
128. *Id.*, § 221(b).
129. Subject to NRC approval and licensing.
130. The projected date of completion is sometime around 1995, *see* 1982 U.S. CODE CONG. & AD. NEWS 3797.
131. *See* 1982 U.S. CODE CONG. & AD. NEWS 3814. The storage sites are not subject to NRC licensing provisions.

subject to the construction and operation exception of the AEA,[132] and thus under the exclusive regulatory authority of the federal government.[133] It is doubtful that any state law seeking to regulate the construction of additional temporary on-site storage facilities, even for reasons other than health and safety, would survive the AEA exception.[134] However, it is plausible for a state to regulate the type of future energy facilities to be erected within its borders. The United States Supreme Court upheld sections of California's Warren-Alquist State Energy Resources Conservation and Development Act[135] that placed a moratorium on new nuclear power plant construction. Under the California act, no new nuclear power plants could be built until the state determined that there would be adequate storage capacity for the plant's spent fuel when required and disposal facilities for the radioactive wastes generated by the plant.[136] The United States Supreme Court noted the N.W.P.A. was "directed at solving the nuclear waste disposal problem for *existing* reactors."[137] Therefore, although the N.W.P.A. specifically addressed all the storage and disposal problems of nuclear power plants, a state law (motivated by the economic impact of these problems), aimed at preventing the construction of new nuclear power plants within its borders, is within the rightful regulatory power of the state and is unlikely to be subject to federal preemption.[138]

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132. *See* 42 U.S.C. § 2021(c).

133. *See* Pac. Gas & Elec., 103 S.Ct. at 1726. "It would clearly be impermissible for [a state] to attempt to [regulate the construction and operation of a nuclear power plant]. . . [E]ven if enacted out of non-safety concerns, [the state measure] would nonetheless directly conflict with the N.R.C.'s exclusive authority over [this area]." *Id.*

134. *See id.* at 1730.

135. CAL. PUB. RES. CODE §§25000-25986 (West Supp. 1981) [hereinafter cited as the California Act].

136. *See id.* §§ 25524.1(b), 25524.2. The measures were premised on the economic impact of nuclear generated electricity.

137. *See* Pac. Gas & Elec., 103 S.Ct. at 1730 (emphasis added). The Court also found that "the legal reality remains that Congress has left sufficient authority in the States to allow the development of nuclear power to be slowed or even stopped for economic reasons." *Id.* at 1732.

138. The purpose of the California Act was to prevent the economic hardship the state may have been forced to endure should a nuclear reactor be forced to shut down due to storage and disposal problems. *See* Pac. Gas & Elec., 103 S.Ct. at 1727. The Supreme Court, citing the Court of Appeals' reading of section 25524.2, restated, "section 25524.2 is directed towards purposes other than protection against radiation hazards. While Proposition 15 would have required California to judge the safety of a proposed method of waste disposal, section 25524.2 leaves that judgment to the federal government. California is concerned not with the adequacy of the method, but rather with its

VI. CONCLUSION

As the Supreme Court observed in *Pac. Gas & Elec v. St. Energy Resources Conserv.*, "Congress has allowed the States to determine — as a matter of economics — whether a nuclear plant. . . should be built."[139] Furthermore, Congress has delegated authority to the states to slow or even halt the development of nuclear power. Similarly, the acts discussed herein make clear Congress' intention that the states have regulatory authority over radioactive wastes. Congress has avoided dual regulation with the states. Unless a state enters into an agreement to assume regulation of specific areas of the nuclear fuel cycle, the federal government retains power.

Notions of exclusive federal regulation over radioactive materials are unsound. States which have entered into agreements with the NRC for regulatory authority over source, byproduct and special nuclear materials should be recognized as having the sole authority over these radioactive materials throughout the term of the agreement. Additionally, after January 1, 1986, all states wishing to limit the amount of radioactive wastes in their region may, under the L.L.R.W.P.A., enter into exclusive compacts to prohibit noncompact state wastes from entering their region.

Presently, the most effective way for states to limit the buildup of radioactive wastes is to balance the economic burden of radioactive waste and spent fuel storage for new nuclear power plants against alternative sources of energy (e.g., fossile fuel, hydroelectric, solar, wind, etc.). There are no federal laws requiring states to construct nuclear power plants. Certainly, if nuclear power is not cost effective, a state may choose another, less burdensome form of electricity generation. State attempts to

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existence." Massachusetts voters recently approved a law (MASS. GEN. LAWS ANN. Ch. 503 (1982)) which empowers the legislature to establish economic, safety and environmental criteria (e.g., an existing, operating, licensed permanent disposal site for high-level wastes generated by the proposed nuclear plant, and adequate emergency preparedness plan, effective emission standards to protect public health and safety, federally approved technology or means for timely and economical decomissioning, dismantling and disposal, and that the proposed plant offers the optimal means of meeting state energy needs), before any new nuclear power plant or radioactive waste dumps can be built.

139. 461 U.S.____, 103 S. Ct. 1713, 1731.

limit exposure to radioactive materials motivated by safety concerns have generally been futile, as the Atomic Energy Act entrusted atomic health and safety concerns to the federal government. Pursuant to section 274(d) of the Atomic Energy Act, state regulations of certain radioactive materials should be enforced where a state has entered into an agreement with the NRC to assume regulation.

Congress has granted the states more authority over the storage and disposal of spent fuel and other radioactive wastes. It is up to the states to utilize these Congressional grants of authority so that citizens can have control over the nuclear fuel cycle through a more accessible level of government. Regulating radioactive wastes through pollution measures, preventing future construction of additional nuclear power plants and entering into agreements with the NRC and regional states, will afford state and local governments more effective control over the tremendous amount of radioactive waste generated each year and temporarily stored through the United States.

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