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BANNING THE TRANSPORTATION OF NUCLEAR WASTE: A PERMISSIBLE EXERCISE OF THE STATES' POLICE POWER?

INTRODUCTION

In April 1977, President Carter declared a nationwide ban on the commercial reprocessing of spent nuclear fuel.¹ As a result, the spent fuel began to accumulate in storage pools at the various nuclear power plants.² These pools, however, were not designed for long-term storage,³ and their capacity is limited.⁴ Unless a means of permanently disposing of this waste is found,⁵ nuclear power plants will be forced to shut down, some as early as the mid-1980's.⁶

Responding to this urgent need, Congress passed the Nuclear Waste Policy Act of 1982 (NWPA),⁷ which establishes a schedule for the development and construction of permanent nuclear waste disposal

1. Statement by the President on His Decisions Following a Review of U.S. Policy, 1977 Pub. Papers 587-88. This decision resulted from a concern that nuclear materials made available through the wide-spread use of nuclear technology might be used for nuclear weapons. "[T]he serious consequences of proliferation and direct implications for peace and security" required this change in the nation's nuclear energy policy. *Id.* at 587. Even prior to this decision, economic problems were preventing spent fuel reprocessing from becoming a viable industry in the United States. H.R. Rep. No. 491, pt. 1, 97th Cong., 2d Sess. 27, reprinted in 1982 U.S. Code Cong. & Ad. News 3792, 3793.

2. Pacific Gas & Elec. Co. v. State Energy Resources Conservation & Dev. Comm'n, 103 S. Ct. 1713, 1717 (1983); see H.R. Rep. No. 491, pt. 1, 97th Cong., 2d Sess. 28, reprinted in 1982 U.S. Code Cong. & Ad. News 3792, 3794.

3. Pacific Gas & Elec. Co. v. State Energy Resources Conservation & Dev. Comm'n, 103 S. Ct. 1713, 1717 (1983); H.R. Rep. No. 491, pt. 1, 97th Cong., 2d Sess. 27-28, reprinted in 1982 U.S. Code Cong. & Ad. News 3792, 3794.

4. Pacific Gas & Elec. Co. v. State Energy Resources Conservation & Dev. Comm'n, 103 S. Ct. 1713, 1717 (1983); *In re Duke Power Co.*, 14 N.R.C. 307, 314 (1981).

5. Technically, spent nuclear fuel is different from "high-level radioactive waste." Spent nuclear fuel is the nuclear material removed from a reactor before the reusable elements of the spent fuel have been separated by reprocessing. Nuclear Waste Policy Act of 1982, Pub. L. No. 97-425, § 2, 96 Stat. 2201, 2204 (1983) (current version at 42 U.S.C.A. § 10101(23) (West 1983)). "High-level radioactive waste" includes the unusable material remaining after the reprocessing and any other highly radioactive material that the Nuclear Regulatory Commission determines needs permanent isolation. *Id.*, 96 Stat. at 2203 (current version at 42 U.S.C.A. § 10101(12) (West 1983)).

6. Pacific Gas & Elec. Co. v. State Energy Resources Conservation & Dev. Comm'n, 103 S. Ct. 1713, 1717-18 (1983); *In re Westinghouse Elec. Corp.*, 517 F. Supp. 440, 448 (E.D. Va. 1981); see *Illinois v. General Elec. Co.*, 683 F.2d 206, 208 (7th Cir. 1982), cert. denied, 103 S. Ct. 1891 (1983); H.R. Rep. No. 785, pt. 1, 97th Cong., 2d Sess. 47 (1982).

7. Pub. L. No. 97-425, 96 Stat. 2201 (1983) (current version at 42 U.S.C.A. §§ 10101-10226 (West 1983)).

facilities.⁸ The schedule calls for these facilities to be operational by the year 2000.⁹ In most cases, these facilities will be located away from the sites of the power plants.¹⁰ Consequently, the nation's roadways will be used to transport the nuclear waste. Although nuclear waste has been, and is being, shipped to other power plants with available storage space,¹¹ the shipments will become more frequent when the disposal facilities become operational.¹²

Some states facing such an increase in the transportation of nuclear waste have initiated actions to prohibit all highway transportation of nuclear waste,¹³ claiming that the transportation endangers the public

8. H.R. Rep. No. 491, pt. 1, 97th Cong., 2d Sess. 30-31, *reprinted in* 1982 U.S. Code Cong. & Ad. News 3792, 3797.

9. *Id.*, *reprinted in* 1982 U.S. Code Cong. & Ad. News at 3797.

10. *See id.* at 32-34, *reprinted in* 1982 U.S. Code Cong. & Ad. News at 3798-3800; *id.* at 38, *reprinted in* 1982 U.S. Code Cong. & Ad. News at 3804 (difficulties in increasing "at-reactor storage" include economic and regulatory impediments). The design requirements of the disposal facilities also deter construction at the site of the power plants. The surface facilities alone will cover 400 acres of land. *Id.* at 34, *reprinted in* 1982 U.S. Code Cong. & Ad. News at 3800. The underground repository tunnels will cover 2,000 acres of rock. *Id.* at 32, *reprinted in* 1982 U.S. Code Cong. & Ad. News at 3798.

11. *See, e.g., Illinois v. General Elec. Co.*, 683 F.2d 206, 208 (7th Cir. 1982), *cert. denied*, 103 S. Ct. 1891 (1983); N.Y. Times, Oct. 6, 1983, at A18, col. 1.

12. Winchester, *Wheeling and Dealing in Nuclear Power* (Book Review), 68 Sierra 75, 75 (Sept./Oct. 1983).

13. The attorneys general of both Illinois and Ohio have already gone to court in an attempt to block the shipments of nuclear waste. N.Y. Times, Oct. 2, 1983, at 46, col. 1. Alaska forbids all transportation of high-level nuclear waste, unless the purpose of the transportation is to take the waste out of the state for disposal. Alaska Stat. § 18.45.027 (1981). This statute technically would allow a shipper to pass through the state, provided the terminus of the journey was out of the state. Because of Alaska's geographic position, however, the effect of the statute is to prohibit any out-of-state shipments from entering the state, while permitting the state to transport its own waste out. Such a discriminatory impact may violate the commerce clause. *See infra* notes 140-43 and accompanying text. Other states have statutes allowing state officials to deny a permit for the transportation of nuclear waste based on public health and safety reasons. Enforcement procedures include injunctions, fines, or embargos. *See* Ariz. Rev. Stat. Ann. §§ 30-672(A), -673, -685, -687 (West Supp. 1983-1984) (injunction and misdemeanor); Colo. Rev. Stat. §§ 25-11-103(2), -104(1), -106, -107 (1973 & Supp. 1983) (injunction, fine, and imprisonment); Conn. Gen. Stat. § 16a-106 (1983) (maximum fine of \$10,000); Del. Code Ann. tit. 16, §§ 7413, 7414 (1983) (injunction); Ga. Code Ann. §§ 31-13-2, -13-5(a)(7), -13-10, -13-15 (1982) (misdemeanor); Idaho Code §§ 39-3006(3), -3012, -3013, -3017 (1977 & Supp. 1983) (injunction and misdemeanor); Kan. Stat. Ann. §§ 48-1606, -1607, -1610 to -1613 (1983) (impounding, injunction, fine, and imprisonment); Ky. Rev. Stat. §§ 174.400-174.990 (1980) (fine); Mass. Ann. Laws ch. 111, § 5B (Michie/Law. Co-op. Supp. 1983) (fine); Miss. Code Ann. §§ 45-14-53, -57, -69 (Supp. 1983) (fine and imprisonment); Mont. Code Ann. §§ 75-3-202, -404, -405 (1983) (fine and imprisonment); N.J. Stats. Ann. §§ 26:2D-10, -11.1, -13, -18 (West 1964 & Supp. 1983-1984) (embargo, injunction, and damages); Or. Rev. Stat. §§ 469.530(2), -550(2), -570, -603, -605 (1981) (injunction). These statutes, which provide for selective enforce-

health and safety.¹⁴ Such state action certainly will hamper the growth of the nuclear industry in this country. A nuclear power plant within the state would be forced, when its storage space filled up, to ship its waste by other means, such as by rail or waterway. If these other means were not available, the accumulation of waste would eventually force the plant to shut down.¹⁵

In a recently publicized case,¹⁶ New York City attempted to justify its ban on the transportation of nuclear waste by claiming that the federal regulations controlling such transportation did not provide for the highest possible level of safety.¹⁷ In a split decision, the Second Circuit rejected this argument, holding that the regulations did not have to ensure an optimum level of safety.¹⁸ This does not mean, however, that New York City and other state and local governments will be precluded from enacting and enforcing such bans.¹⁹ It does mean that, rather than attempting to defeat the adequacy of the federal regulations, these bans will have to survive scrutiny under the supremacy and commerce clauses. The supremacy clause establishes the superior authority of federal legislation over state legislation.²⁰ The commerce clause grants Congress the authority to regulate commerce among the states.²¹ Under this clause, state action will be declared invalid if it erects a barrier to the free flow of interstate commerce.²²

ment by state officials, may be an impermissible regulation of a radiation hazard. They allow the states to determine what type of technical safety measures are acceptable, thus infringing on the NRC's authority over such technical matters. See *infra* notes 95-97 and accompanying text.

14. See *infra* notes 150-52 and accompanying text.

15. *In re* Duke Power Co., 14 N.R.C. 307, 314-15 (1981). There are four options available to the plant operator when his storage pools fill: 1) expand the storage pool, 2) build an on-site storage facility, 3) transport the fuel to another location, 4) shut down. *Id.* The first three of these options may not actually exist. It may not be possible to expand the pools, and there may be timing and economic difficulties in constructing an on-site storage facility. *Id.* at 315. Therefore, if the transportation of the waste is banned, the only "option" remaining to the plant operator would be to shut down.

16. *City of New York v. United States Dep't of Transp.*, 715 F.2d 732 (2d Cir. 1983), *dismissed for lack of jurisdiction*, 52 U.S.L.W. 3630 (U.S. Feb. 27, 1984).

17. *Id.* at 739.

18. *Id.* at 740.

19. See *infra* notes 121-24 and accompanying text. A local municipality, however, might have more difficulty in enacting such a ban. See *infra* note 164.

20. U.S. Const. art. VI, cl. 2, states that "[t]his Constitution, and the Laws of the United States which shall be made in Pursuance thereof . . . 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."

21. U.S. Const. art. I, § 8, cl. 3, provides that Congress shall have the authority to "regulate Commerce with foreign Nations, and among the several States."

22. See *H.P. Hood & Sons v. Du Mond*, 336 U.S. 525, 535-38 (1949); *Southern Pac. Co. v. Arizona*, 325 U.S. 761, 767 (1945); *Edwards v. California*, 314 U.S. 160,

This Note analyzes whether, under the supremacy and commerce clauses, a state has the authority to impose a ban on the highway transportation of nuclear waste within its borders.²³ The supremacy clause analysis in Part I examines whether Congress has completely occupied the field of the regulation of radiation hazards. If so, a state ban would be an impermissible attempt to regulate in a field preempted by Congress. The commerce clause analysis in Part II asks whether such a ban erects an impermissible barrier to the free flow of interstate commerce. This Note concludes that the federal nuclear legislation has not clearly and unambiguously preempted the states' authority to impose a total ban on all nuclear waste transportation. Furthermore, under current commerce clause analysis a non-discriminatory ban that achieves some tangible safety benefit would not be considered an impermissible burden on commerce. If the states' authority in this area is to be removed, it must be done by the affirmative action of Congress.

I. PREEMPTION UNDER THE SUPREMACY CLAUSE

A state ban on the transportation of nuclear waste raises the question whether such regulations are preempted by federal legislation, specifically the Atomic Energy Act of 1954,²⁴ the Nuclear Waste Policy Act,²⁵ and the Hazardous Materials Transportation Act.²⁶ The preemption doctrine arises out of the supremacy clause of the Constitution. State legislation is preempted if Congress has already enacted valid federal legislation covering the same area.²⁷

174 (1941); *The Minnesota Rate Cases*, 230 U.S. 352, 400 (1913); *Leisy v. Hardin*, 135 U.S. 100, 108-09 (1890); J. Nowak, R. Rotunda & J. Young, *Handbook on Constitutional Law* 268 (2d ed. 1983) [hereinafter cited as J. Nowak]; L. Tribe, *American Constitutional Law* § 6-4, at 325 (1978); Trosten & Ancarrow, *Federal-State-Local Relationships in Transporting Radioactive Materials: Rules of the Nuclear Road*, 68 Ky. L.J. 251, 253 (1979-1980).

23. While most of the arguments in this Note apply to local as well as state authority, for the sake of simplicity this Note will only make references to the states. On the local level, there is the added complication of whether state action has preempted the local authority. See, e.g., Cal. Health & Safety Code § 25653 (West 1967) (no state agency, city, county or other political subdivision shall adopt regulations regarding the transportation of nuclear waste inconsistent with those adopted by the State Department of Health); Conn. Gen. Stat. § 16a-107 (1983) (authority of commissioner over transportation of nuclear materials supersedes any municipal ordinance).

24. Pub. L. No. 83-703, 68 Stat. 919 (codified as amended at 42 U.S.C. §§ 2011-2296 (1976 & Supp. V 1981)).

25. Pub. L. No. 97-425, 96 Stat. 2201 (1983) (current version at 42 U.S.C.A. §§ 10,101-10,226 (West 1983)).

26. Pub. L. No. 93-633, 88 Stat. 2156 (1975) (codified as amended at 49 U.S.C. §§ 1801-1812 (1976 & Supp. V 1981)).

27. See *supra* note 20 and accompanying text.

If the state action falls within the police power of the state, however, courts will not readily find that Congress has preempted the entire area of regulation.²⁸ The term "police power" refers to the inherent authority of the state to pass laws protecting the "health, safety, morals or general welfare" of the public.²⁹ When states legislate within this traditional authority, courts presume that the act is valid.³⁰ This presumption will not be defeated unless it is shown that the "clear and manifest purpose of Congress" was to preempt the states' authority.³¹ Even if some amount of federal preemption is found, the states' police power is not considered totally preempted, but is invalidated only "to the extent that it clearly has been preempted."³²

Courts look at various factors to find a clear congressional intent to preempt. First, Congress may expressly preclude state authority to regulate a particular field.³³ Second, a state law may be deemed

28. *Ray v. Atlantic Richfield Co.*, 435 U.S. 151, 157 (1978); *Florida Lime & Avocado Growers, Inc. v. Paul*, 373 U.S. 132, 146-47 (1963); *Rice v. Santa Fe Elevator Corp.*, 331 U.S. 218, 230 (1947); J. Nowak, *supra* note 22, at 294; L. Tribe, *supra* note 22, § 6-25, at 385.

29. J. Nowak, *supra* note 22, at 429; see *Southern Pac. Co. v. Arizona*, 325 U.S. 761, 764 (1945); *Barbier v. Connolly*, 113 U.S. 27, 31 (1885); *Hannibal & St. J. R.R. Co. v. Husen*, 95 U.S. 465, 471 (1877); B. Schwartz, *Constitutional Law* § 2.5, at 54 (2d ed. 1979).

30. *Huron Portland Cement Co. v. City of Detroit*, 362 U.S. 440, 443 (1960); *Southern Pac. Co. v. Arizona*, 325 U.S. 761, 766-67 (1945); J. Nowak, *supra* note 22, at 295; L. Tribe, *supra* note 22, § 6-25, at 385. This judicial deference is even more pronounced if the regulation specifically promotes the public health and safety. *Huron Portland Cement Co.*, 362 U.S. at 442-43; *Illinois v. Kerr-McGee Chem. Corp.*, 677 F.2d 571, 578 (7th Cir.), *cert. denied*, 103 S. Ct. 469 (1982).

31. *Florida Lime & Avocado Growers, Inc. v. Paul*, 373 U.S. 132, 146-47 (1963) (quoting *Rice v. Santa Fe Elevator Corp.*, 331 U.S. 218, 230 (1947)); *accord* *Pacific Gas & Elec. Co. v. State Energy Resources Conservation & Dev. Comm'n*, 103 S. Ct. 1713, 1723 (1983); *Ray v. Atlantic Richfield Co.*, 435 U.S. 151, 157 (1978); *Jones v. Rath Packing Co.*, 430 U.S. 519, 525 (1977); *De Canas v. Bica*, 424 U.S. 351, 357 (1976); *New York State Dep't of Social Servs. v. Dublino*, 413 U.S. 405, 413 (1973); see J. Nowak, *supra* note 22, at 295; L. Tribe, *supra* note 22, § 6-25, at 385; Henderson, *The Nuclear Choice: Are Health and Safety Issues Pre-empted?*, 8 B.C. Envtl. Aff. L. Rev. 821, 842-43 (1980).

32. *Illinois v. Kerr-McGee Chem. Corp.*, 677 F.2d 571, 579 (7th Cir.), *cert. denied*, 103 S. Ct. 469 (1982); see *Pacific Gas & Elec. Co. v. State Energy Resources Conservation & Dev. Comm'n*, 103 S. Ct. 1713, 1726 (1983) (court must determine whether the federal government "completely occupies a given field or an identifiable portion of it"); *Rice v. Santa Fe Elevator Corp.*, 331 U.S. 218, 230-31 (1947) ("It is often a perplexing question whether Congress has precluded state action or by the choice of selective regulatory measures has left the police power of the States undisturbed except as the state and federal regulations collide."); *McDermott v. Wisconsin*, 228 U.S. 115, 132 (1913) (state law must yield to the extent that it interferes with federal legislation); L. Tribe, *supra* note 22, § 6-25, at 384-85 (total preemption is not inferred in absence of clear congressional intent to bar state action).

33. *Pacific Gas & Elec. Co. v. State Energy Resources Conservation & Dev. Comm'n*, 103 S. Ct. 1713, 1722 (1983); *Jones v. Rath Packing Co.*, 430 U.S. 519, 525

invalid if it conflicts with a federal law in such a way as to make compliance with both a physical impossibility.³⁴ Third, a congressional intent to preempt may be inferred from a variety of factors, including the legislative history of the federal statute,³⁵ the pervasiveness of the federal occupation of the field,³⁶ or the existence of a dominant federal interest,³⁷ such as a need for national uniformity.³⁸ Finally, a state law may be invalid if it "stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress."³⁹

The federal statutes regulating the nuclear industry must be examined in the light of the above factors. If Congress has expressed an unambiguous intention to preempt states from banning the transportation of nuclear waste, any state action in this area is invalid.

A. *The Atomic Energy Act*

1. Express Preemption

The primary purpose of the Atomic Energy Act of 1954 (AEA)⁴⁰ is to foster the safe development of nuclear energy as a power source.⁴¹ The original AEA was virtually silent on whether a state may regulate

(1977); *Rice v. Santa Fe Elevator Corp.*, 331 U.S. 218, 234 (1947); *Northern States Power Co. v. Minnesota*, 447 F.2d 1143, 1146 (8th Cir. 1971), *aff'd mem.*, 405 U.S. 1035 (1972); 2 C. Antieau, *Modern Constitutional Law* § 10:22, at 43 (1969); J. Nowak, *supra* note 22, at 292.

34. *Florida Lime & Avocado Growers, Inc. v. Paul*, 373 U.S. 132, 142-43 (1963); *accord Pacific Gas & Elec. Co. v. State Energy Resources Conservation & Dev. Comm'n*, 103 S. Ct. 1713, 1722 (1983); *Fidelity Fed. Sav. & Loan Ass'n v. de la Cuesta*, 458 U.S. 141, 153 (1982); L. Tribe, *supra* note 22, § 6-24, at 377-78; *see* 2 C. Antieau, *supra* note 33, § 10:22, at 40.

35. *Florida Lime & Avocado Growers, Inc. v. Paul*, 373 U.S. 132, 146-50 (1963); *Illinois v. Kerr-McGee Chem. Corp.*, 677 F.2d 571, 579 (7th Cir.), *cert. denied*, 103 S. Ct. 469 (1982); *Northern States Power Co. v. Minnesota*, 447 F.2d 1143, 1146 (8th Cir. 1971), *aff'd mem.*, 405 U.S. 1035 (1972).

36. *Pacific Gas & Elec. Co. v. State Energy Resources Conservation & Dev. Comm'n*, 103 S. Ct. 1713, 1722 (1983); *Fidelity Fed. Sav. & Loan Ass'n v. de la Cuesta*, 458 U.S. 141, 153 (1982) (quoting *Rice v. Santa Fe Elevator Corp.*, 331 U.S. 218, 230 (1947)).

37. *Fidelity Fed. Sav. & Loan Ass'n v. de la Cuesta*, 458 U.S. 141, 153 (1982); *Rice v. Santa Fe Elevator Corp.*, 331 U.S. 218, 230 (1947); *see Florida Lime & Avocado Growers, Inc. v. Paul*, 373 U.S. 132, 143-44 (1963).

38. *Southern Pac. Co. v. Arizona*, 325 U.S. 761, 767 (1945); *The Minnesota Rate Cases*, 230 U.S. 352, 399 (1913); *Leisy v. Hardin*, 135 U.S. 100, 108-09 (1890); *Cooley v. Board of Wardens*, 53 U.S. 318, 340, 12 How. 299, 319 (1851).

39. *Hines v. Davidowitz*, 312 U.S. 52, 67 (1941); *accord Fidelity Fed. Sav. & Loan Ass'n v. de la Cuesta*, 458 U.S. 141, 153 (1982).

40. Pub. L. No. 83-703, 68 Stat. 919 (codified as amended at 42 U.S.C. §§ 2011-2296 (1976 & Supp. V 1981)).

41. *Pacific Gas & Elec. Co. v. State Energy Resources Conservation & Dev. Comm'n*, 103 S. Ct. 1713, 1731 (1983); *id.* at 1735 (Blackmun, J., concurring); H.R.

radiation sources for health and safety reasons.⁴² In 1959, Congress passed an amendment attempting "to clarify the . . . responsibilities . . . of the States."⁴³ Despite this attempt at clarification, the AEA still fails to state expressly that the federal government has sole and exclusive authority to regulate radiation hazards.⁴⁴ Thus, there is no express preemption of the states' police power.

2. Physical Impossibility

A state ban on nuclear waste transportation would not be invalid on the basis that compliance with both the federal and the state regulations is physically impossible. The Nuclear Regulatory Commission (NRC)⁴⁵ is authorized under the AEA to license the transfer in interstate commerce of "special nuclear material,"⁴⁶ "source material,"⁴⁷ and "byproduct materials,"⁴⁸ to regulate the export and import of

Rep. No. 883, 89th Cong., 1st Sess. 4 (1965); see 42 U.S.C. § 2011 (1976); H.R. Rep. No. 2181, 83d Cong., 2d Sess. 3 (1954); S. Rep. No. 1699, 83d Cong., 2d Sess. 3 (1954).

42. Joint Comm. on Atomic Energy, Selected Materials on Federal-State Cooperation in the Atomic Energy Field 1, 3-4 (1959) [hereinafter cited as Federal-State Cooperation]. The 1954 AEA was not totally silent on this point, however. See *infra* notes 81-87 and accompanying text.

43. 42 U.S.C. § 2021(a)(1) (1976). See *infra* note 72 and accompanying text.

44. Northern States Power Co. v. Minnesota, 447 F.2d 1143, 1147 (8th Cir. 1971), *aff'd mem.*, 405 U.S. 1035 (1972); Henderson, *supra* note 31, at 844; Meek, *Nuclear Power and State Radiation Protection Measures: The Impotence of Preemption*, 10 *Env'tl. L.* 1, 11 (1979).

45. The Atomic Energy Commission (AEC) was abolished in 1974, see 42 U.S.C. § 5814 (1976), and was replaced in its regulatory capacity by the Nuclear Regulatory Commission, *id.* § 5841. Throughout this Note, "NRC" will refer to both Commissions.

46. 42 U.S.C. § 2073(a) (1976). "Special nuclear material" is defined as: (1) plutonium, uranium enriched in the isotope 233 or in the isotope 235, and any other material which the Commission . . . determines to be special nuclear material, but does not include source material; or (2) any material artificially enriched by any of the foregoing, but does not include source material.

Id. § 2014(aa).

47. *Id.* § 2092 (1976). "Source material" is defined as:

(1) uranium, thorium, or any other material which is determined by the Commission . . . to be source material; or (2) ores containing one or more of the foregoing materials, in such concentration as the Commission may by regulation determine from time to time.

Id. § 2014(z).

48. *Id.* § 2111 (Supp. V 1981). "Byproduct materials" are defined as:

(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.

Id. § 2014(e).

these materials into the United States,⁴⁹ and to regulate the disposal of these materials.⁵⁰ No express provision, however, exists in the AEA permitting the NRC to *require* the transportation of nuclear waste.⁵¹ Thus, a state ban on such transportation would not make it physically impossible for a third party to comply with federal regulations.⁵² The NRC regulations merely dictate how shipments of nuclear waste should be carried out if these shipments occur.⁵³ Because the federal regulations do not demand such shipments, a state ban forbidding the transport of the waste does not force the possessor of nuclear waste into a physically impossible situation.

49. *Id.* § 2021(c) (1976 & Supp. V 1981).

50. *Id.*

51. *Cf. Illinois v. Kerr-McGee Chem. Corp.*, 677 F.2d 571, 583 & n.22 (7th Cir.) (NRC asserted that it could not require clean-up of off-site dumps of radioactive byproduct materials, but that any action taken with regard to such dumps must be done under a license from the NRC), *cert. denied*, 103 S. Ct. 469 (1982); 42 U.S.C. § 2021(c) (1976 & Supp. V 1981) (NRC authorized to require that no transfer of possession or control of nuclear material shall take place except pursuant to a license issued by the NRC). Thus, the NRC can both prevent the transportation of nuclear waste and license those who do transport the waste, but it cannot force such transportation to take place.

52. Similarly, the AEA does not require the states to authorize the construction of nuclear power plants. *See Pacific Gas & Elec. Co. v. State Energy Resources Conservation & Dev. Comm'n*, 103 S. Ct. 1713, 1722 (1983). The Supreme Court has made contradictory statements as to whether a state's prohibition of the construction of such plants in the face of an NRC license would make compliance with federal regulations a physical impossibility. *Compare id.* at 1722 (dictum) (AEA does not prohibit states from deciding to forbid the construction of nuclear reactors) *and id.* at 1734 (Blackmun, J., concurring) (even if the NRC decides it is safe to proceed with construction of nuclear power plants, states are not obligated to do so) *with id.* at 1727 (dictum) (state refusal to permit construction of nuclear plants because of safety concerns would conflict directly with the NRC judgment that nuclear technology is safe). The Court's latter assertion, however, may not be directed so much towards physical impossibility as to the perceived completeness of the federal occupation of the field of nuclear safety. *See id.* at 1726 (dictum) (federal government occupies the whole field of nuclear safety concerns, "except the limited powers expressly ceded to the states"). Recently, the Court retreated from its belief that Congress occupied the entire field of nuclear safety concerns. *See infra* notes 56-71 and accompanying text. A federal permit to engage in an action, such as the construction of a nuclear facility or the transportation of nuclear waste, is not a federal order to do so. *Marshall v. Consumers Power Co.*, 65 Mich. App. 237, 259, 237 N.W.2d 266, 280 (1975); *see In re Consolidated Edison Co.*, 7 N.R.C. 31, 34 (1978) (state retains the right to preclude construction even in the face of an issuance of an NRC permit). Because the NRC license merely permits construction of a nuclear facility or transportation of nuclear waste, a state measure forbidding those actions would not result in a physically impossible situation.

53. *See* 42 U.S.C. § 2021(c) (1976 & Supp. V 1981) (NRC authorized to require that no transfer of possession or control of nuclear materials shall take place except pursuant to a license issued by the NRC).

3. Implied Preemption

Courts look at various factors in attempting to find an implicit preemption within a federal statute.⁵⁴ These factors include the legislative history of the statute, the pervasiveness of the federal occupation of the field, and the need for national uniformity in the regulations.⁵⁵

The Supreme Court has examined the legislative history of the AEA in an effort to determine the extent of implied preemption in the field of nuclear energy.⁵⁶ Although *Pacific Gas & Electric Co. v. State Energy Resources Conservation & Development Commission*⁵⁷ dealt chiefly with a state's authority to impose economic regulations,⁵⁸ the Court, in dictum, discussed a state's authority to enact regulations to protect against radiation hazards.⁵⁹ Unfortunately, the discussion is somewhat contradictory.⁶⁰ At one point, the Court found congressional intent to preempt the states only as to the regulation of "the radiological safety aspects involved in the construction and operation of a nuclear plant."⁶¹ Later, however, the Court claimed that "the federal government has occupied the entire field of nuclear safety concerns, except the limited powers expressly ceded to the states."⁶²

54. See *supra* notes 35-38 and accompanying text.

55. See *supra* notes 35-38 and accompanying text.

56. The earliest federal case dealing directly with the extent of federal preemption in the nuclear field was *Northern States Power Co. v. Minnesota*, 447 F.2d 1143, 1145 (8th Cir. 1971), *aff'd mem.*, 405 U.S. 1035 (1972). The Eighth Circuit concluded that the NRC had the "sole authority to regulate radiation hazards associated with by-product, source, and special nuclear materials and with production and utilization facilities." *Id.* at 1149. This decision has been criticized by some authors. See, e.g., Jaksetic, *Constitutional Dimensions of State Efforts to Regulate Nuclear Waste*, 32 S.C.L. Rev. 789, 819-20 (1981) (stating that *Northern States* should be limited to its facts); Meek, *Nuclear Power and State Radiation Protection Measures: The Impotence of Preemption*, 10 *Env'tl. L. J.* 1, 13-16 (1979) ("The wisdom of perpetuating the dubious logic of *Northern States* [may] be seriously questioned."); Wiggins, *Federalism Balancing and the Burger Court: California's Nuclear Law as a Preemption Case Study*, 13 *U.C.D. L. Rev.* 3, 72-74 (1979) (*Northern States* analysis is no longer an acceptable test for preemption). Furthermore, the Supreme Court has indicated some disagreement with the reasoning employed in *Northern States*. See *Pacific Gas & Elec. Co. v. State Energy Resources Conservation & Dev. Comm'n*, 103 S. Ct. 1713, 1726 n.24 (1983) (summary affirmance in *Northern States* is not an adoption of the reasoning used by the lower court).

57. 103 S. Ct. 1713 (1983).

58. *Id.* at 1727-28.

59. *Id.* at 1722-23, 1726-27.

60. *Id.* at 1732-33 (Blackmun, J., concurring).

61. *Id.* at 1723.

62. *Id.* at 1726.

Thus, *Pacific* provides no definitive conclusion as to whether the federal preemption in this field is partial or absolute.⁶³

In *Silkwood v. Kerr-McGee Corp.*,⁶⁴ the Court again attempted to clarify the preemption issue. The question confronting the Court was whether the AEA preempted a state-authorized award of punitive damages.⁶⁵ The Court recognized that punitive damages are "regulatory in the sense that a nuclear plant will be threatened with damages liability if it does not conform to state standards."⁶⁶ It then reiterated its statement in *Pacific* that the NRC has authority to regulate the construction and operation of nuclear facilities,⁶⁷ and on that basis concluded that the federal government has occupied the whole field of nuclear safety concerns.⁶⁸ Having reached this conclusion, however, the Court then stated that the defendant failed to show that Congress intended to disallow punitive damages.⁶⁹ As a result, the Court upheld the plaintiff's right to receive punitive damages.⁷⁰ Thus, the Court contradicted itself by stating that Congress had occupied the whole field of nuclear safety regulations and then permitting state regulation in the form of punitive damages.⁷¹ The result is that a definite view as to the extent of federal preemption does not exist.

63. The narrower "construction and operation" view has some support from Congress. See H.R. Rep. No. 567, 89th Cong., 1st Sess. 10 (1965) (NRC's regulatory control is limited to protecting the public health and safety with respect to the special hazards associated with the operation of nuclear facilities).

64. 52 U.S.L.W. 4043 (U.S. Jan. 10, 1984).

65. *Id.* at 4044.

66. *Id.* at 4048. Compensatory damages, however, would not be regulatory in that they seek to make the injured party whole, rather than to punish the wrongdoer. *Id.* at 4050 (Blackmun, J., dissenting).

67. *Id.* at 4046.

68. *Id.*

69. *Id.* at 4048. The Court found that Congress assumed that traditional state tort liability would apply unless expressly preempted. Hence, the defendant had to show that Congress did not intend to allow punitive damages. *Id.* Similarly, the states' authority to ban the transportation of nuclear waste must be shown to be clearly preempted before state action is deemed invalid, because the states' police power is presumed not to be preempted unless that was the manifest intention of Congress. See *supra* notes 30-32 and accompanying text.

70. 52 U.S.L.W. at 4049. While holding that the AEA did not preempt a punitive damages award, the Court remanded the case so that the defendant could reassert any claims made before the Court of Appeals that had not been addressed by either that court or the Supreme Court. *Id.* These claims included the defendant's contention that the award was not supported by sufficient evidence and that it was excessive. *Id.*

71. *Id.* at 4049 (Blackmun, J., dissenting). By requiring the defendant to show that Congress intended to supplant state punitive damages awards, the Court has retreated from its dictum in *Pacific* that Congress had totally preempted the field of nuclear safety "except the limited powers expressly ceded to the states." *Pacific Gas & Elec. Co. v. State Energy Resources Conservation & Dev. Comm'n*, 103 S. Ct. 1713, 1726 (1983).

In light of the Supreme Court's failure to reach a definite conclusion as to congressional intent, an examination of the legislative history of the AEA is necessary. A close reading of the history of the 1959 amendment to the AEA, which was intended to clarify the federal-state relationship in the nuclear field,⁷² shows some ambiguity as to whether Congress ever intended the federal preemption to be absolute.

Early versions of the amendment demonstrate that the extent of the states' authority in the area of nuclear safety was one of the foremost concerns of Congress in passing that amendment. An earlier proposed bill, for example, suggested that the states be permitted to promulgate standards that were more stringent than those adopted by the NRC.⁷³

72. See 42 U.S.C. § 2021(a)(1) (1976); S. Rep. No. 870, 86th Cong., 1st Sess. 8, reprinted in 1959 U.S. Code Cong. & Ad. News 2872, 2878. See *supra* note 43 and accompanying text.

73. AEC Proposed Bill in June 1957, reprinted in Federal-State Cooperation, *supra* note 42, at 18. The bill stated in part:

Nothing in this Act shall be deemed to prevent the States from adopting, inspecting against, and enforcing standards, not in conflict with those adopted by the Commission, for protecting the health and safety of the public from radiation hazards incident to the processing and utilization of source, byproduct, and special nuclear material.

Id. The phrase "not in conflict" meant that a state could not relieve anybody from complying with the NRC's standards, but could impose more stringent state standards. Atomic Energy Commission Analysis of Proposed 1957 Bill, reprinted in Federal-State Cooperation, *supra* note 42, at 22.

In 1959, the NRC proposed another bill, see Federal-State Cooperation, *supra* note 42, at 24 (reprinting letter from A.R. Luedecke to Chairman Anderson of the Joint Committee on Atomic Energy), which was very similar to the present 42 U.S.C. § 2021 (1976 & Supp. V 1981). Section 274(a)(1) of that earlier proposal provided that "during the duration of . . . an agreement, nothing in this Act shall be construed to affect the authority of the State to regulate and license the categories of activities covered by the agreement for the protection of the health and safety of the public from radiation hazards." AEC Proposed Bill in March 1959, reprinted in Federal-State Cooperation, *supra* note 42, at 27 (emphasis added). This statement was designed to clarify that, once a state had entered into an agreement with the NRC for the discontinuance of NRC regulatory authority over certain areas, the state would then have "full jurisdiction with respect to regulation of those activities for protection against radiation hazards." *Id.* at 29; 105 Cong. Rec. 8384 (1959) (reprinting letter from A.R. Luedecke, General Manager, Atomic Energy Commission, to Senator Anderson, Chairman, Joint Committee on Atomic Energy (May 13, 1959)). The use of the term "full jurisdiction" in connection with a statement that the AEA would not "affect the authority" of an agreement state suggests that, prior to the agreement, the state's authority was partial, and only became "full" after the state had entered into the agreement.

The present 42 U.S.C. § 2021 (1976 & Supp. V 1981) changes the language of the earlier proposal. Section 2021(b) states in part that "[d]uring the duration of such an agreement . . . 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." *Id.* § 2021(b) (1976) (emphasis added). This suggests a more comprehensive preemption by the federal government. Instead of the AEA ceasing to "affect the authority"

At a later date, an express preemption clause was suggested.⁷⁴ Nonetheless, Congress failed to act on either proposal.⁷⁵ While this does not prove that Congress intended to leave any authority with the states, it is fair to conclude that Congress was unwilling to commit itself to a firm stance.

Furthermore, the language of the AEA suggests that the states have some authority to promulgate standards for protecting against radiation hazards. Section 2021(g) states that the NRC is to cooperate with the states to "assure that State and Commission programs for protection against hazards of radiation will be coordinated and compatible."⁷⁶ The NRC analysis of this subsection states that this cooperation becomes "even more important" when the states enter into an agreement with the NRC to assume independent regulatory responsibilities in the areas presently within the authority of the NRC.⁷⁷ Section 2021(g), therefore, must contemplate some cooperation between the NRC and the state before the state enters such an agreement. It is when the state has entered this agreement that the cooperation becomes "even more important," that is, more important than the need for cooperation before the agreement. Yet if some cooperation is anticipated before the state enters into an agreement with the NRC, arguably the AEA contemplates some state regulatory authority.

of the agreement state, the regulatory authority is now affirmatively granted to the agreement state, apparently for only the duration of the agreement.

Thus, the history of the 1959 amendment clearly shows that Congress was seriously considering the extent of state authority under the AEA. Such consideration, however, does not, of itself, automatically imply total preemption. See *supra* notes 30-32 and accompanying text.

74. *Hearings before the Joint Comm. on Atomic Energy on Federal-State Relationships in the Atomic Energy Field*, 86th Cong., 1st Sess. 307 (1959) (statement of Mr. Toll) [hereinafter cited as *1959 Hearings*]. At first, this suggestion was rejected, mainly because it was "practically impossible" to decide when the preemption should begin and end, and thus it was "better to leave these . . . questions perhaps up to the courts later to be resolved." *Id.* at 307-08 (statement of Mr. Lowenstein). Subsequent to this statement, an express preemption provision was incorporated into the amendment. *Id.* at 488. A few months later, it was deleted so as "to leave room for the courts to determine the applicability of particular State laws and regulations dealing with matters on the fringe of the preempted area in the light of all the provisions and purposes of the Atomic Energy Act, rather than in light of a single sentence." Letter from A.R. Luedecke to Chairman Anderson of the Joint Committee on Atomic Energy (August 26, 1959), *reprinted in 1959 Hearings*, at 500. It is precisely this type of hazy boundary that does not comply with the requirement of a clear and unambiguous indication of congressional intent to preempt. Tribe, *California Declines the Nuclear Gamble: Is Such a State Choice Preempted?*, 7 *Ecology L.Q.* 679, 697 (1979). See *supra* notes 30-32 and accompanying text.

75. See *supra* notes 43-44 and accompanying text.

76. 42 U.S.C. § 2021(g) (1976).

77. 105 Cong. Rec. 8385 (1959); see AEC Proposed Bill in March 1959, *reprinted in Federal-State Cooperation*, *supra* note 42, at 33 (comment to subsection f).

The comments to section 2021(k),⁷⁸ however, seem to indicate a congressional intent to occupy the area totally. The legislative history states that the NRC has "exclusive authority to regulate for protection against radiation hazards" until the states enter into a section 2021 agreement with the NRC to assume the responsibility.⁷⁹ The co-existence of sections 2021(g) and (k) reflects congressional confusion as to the intended extent of the federal preemption. This uncertainty fails to satisfy the requirement of a clear and unambiguous expression of an intent to preempt the police power of the state.⁸⁰

In addition, the "exclusive authority" mentioned in the legislative history to section 2021(k) may have been intended to extend only to the technological concerns involved in protecting against radiation hazards. As mentioned earlier, safety was not a dominant issue in the 1954 AEA.⁸¹ However, the few comments about safety in the legislative history indicate a concern not with who regulates radiation in general, but with who has the authority to issue technical regulations for protecting against radiation hazards. For example, the principal author of the AEA stated that the NRC's function is limited "to those areas in which the Commission [has] special competence or responsibility."⁸² This includes consideration of designs for nuclear facilities,⁸³ the technical qualifications of nuclear plant operators,⁸⁴ and the health and safety standards to be used.⁸⁵ These comments demonstrate a concern with the technical aspects of the field. There is certainly no reason to suppose that the NRC has "special competence" as to non-technical matters.⁸⁶ Also, when questioned about the safeguarding of

78. 42 U.S.C. § 2021(k) (1976) 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."

79. S. Rep. No. 870, 86th Cong., 1st Sess. 12, *reprinted in* 1959 U.S. Code Cong. & Ad. News 2872, 2883.

80. See *supra* notes 30-32 and accompanying text.

81. See *supra* note 42 and accompanying text. See *New Hampshire v. Atomic Energy Comm'n*, 406 F.2d 170, 174 n.4 (1st Cir.), *cert. denied*, 395 U.S. 962 (1969). Even a casual reading of the legislative history of the AEA shows that the dominant concerns of Congress were the questions of monopolies, *see, e.g.*, 100 Cong. Rec. 11,877-78, 11,903-07 (1954), patents, *see, e.g.*, 100 Cong. Rec. 11,366-69, 11,721-29, 14,344-47 (1954), and the authority of the NRC to produce electricity for commercial use, *see, e.g.*, 100 Cong. Rec. 10,834-40, 11,221-28, 11,385-87 (1954).

82. 100 Cong. Rec. 10,559 (1954) (statement of Sen. Anderson, quoting Chairman Strauss of the Atomic Energy Commission); *see New Hampshire v. Atomic Energy Comm'n*, 406 F.2d 170, 174 (1st Cir.) (Congress, in passing the 1954 legislation, was concerned with the "special hazards of radioactivity."), *cert. denied*, 395 U.S. 962 (1969).

83. 100 Cong. Rec. 10,559 (1954).

84. *Id.*

85. *Id.*

86. *Cf. id.* ("The Commission has no special competence in the field of electric energy distribution and seeks no responsibility in that field. Its functions should be

nuclear waste, Senator W. Sterling Cole, the Chairman of the Joint Committee on Atomic Energy, stated that the NRC was directed "to impose standard regulations in connection with the use of the special nuclear material and the utilization of the by-products."⁸⁷ The terms "use" and "utilization" suggest a grant of authority to the NRC only for technical concerns.

Nevertheless, the 1954 Act was basically silent as to what authority the states had over the regulation of radiation hazards.⁸⁸ In fact, some states had begun to promulgate their own safety regulations by 1959.⁸⁹ To clarify the division of federal-state responsibilities, Congress passed the 1959 amendment.⁹⁰ The legislative history of this amendment suggests that the federal role is limited to the regulation of technical matters.

The 1959 amendment allows the states greater participation in the safe development of nuclear energy by permitting them to assume some of the regulatory responsibilities of the NRC.⁹¹ The NRC, which proposed the amendment, realized that, as expertise in the nuclear energy field became more prevalent, the states would "gain a greater degree of competence through added technical resources."⁹² States would be prohibited from regulating certain areas solely because the technical safety considerations involved were considered to be too complex for the states to handle, at least for the foreseeable future.⁹³ A later Congress noted that the NRC's authority to protect the "health and safety of the public" was limited to the "special hazards" that are associated with the operation of a nuclear facility.⁹⁴ The term "special hazards" suggests a technological concern.

limited, as the bill contemplates, to those areas in which the Commission does have special competence or responsibility.").

87. *Id.* at 11,659.

88. See Federal-State Cooperation, *supra* note 42, at 3-4.

89. *Id.* at 4-5. As of late 1958, seven states (California, Connecticut, Massachusetts, Michigan, New York, Pennsylvania, and Texas) had issued comprehensive safety regulations. Twenty-two more states had regulations of narrower scope. Fifteen states required registration of radiation sources. *Id.* at 5.

90. See *supra* note 72 and accompanying text.

91. 42 U.S.C. § 2021(a)(4) (1976). This subsection states that one of the purposes of the section is "to establish procedures and criteria for discontinuance of certain of the Commission's regulatory responsibilities with respect to byproduct, source, and special nuclear materials, and the assumption thereof by the States." *Id.*

92. Letter from A.R. Luedecke, General Manager, Atomic Energy Commission, to Senator Anderson, Chairman, Joint Committee on Atomic Energy (May 13, 1959), reprinted in 105 Cong. Rec. 8383 (1959).

93. H.R. Rep. No. 1125, 86th Cong., 1st Sess. 3 (1959) (quoting letter from A.R. Luedecke, General Manager, Atomic Energy Commission, to Senator Anderson, Chairman, Joint Committee on Atomic Energy (May 13, 1959), reprinted in 105 Cong. Rec. 8383 (1959)); S. Rep. No. 870, 86th Cong., 1st Sess. 3 (1959) (same), reprinted in 1959 U.S. Code Cong. & Ad. News 2872, 2874.

94. H.R. Rep. No. 567, 89th Cong., 1st Sess. 10 (1965); cf. *New Hampshire v. Atomic Energy Comm'n*, 406 F.2d 170, 174 (1st Cir.) (Congress was concerned in 1954 with the "special hazards of radioactivity."), *cert. denied*, 395 U.S. 962 (1969).

A reading of the legislative history of the AEA and its amendments, therefore, indicates that the "exclusive" authority of the NRC relates only to the technical measures to be taken to protect against radiation hazards.⁹⁵ A state ban on the transportation of nuclear waste is, if anything, distinctly non-technical. It does not seek to impose any new standards on the transportation of waste. Rather, the state is attempting to decide whether to allow nuclear waste shipments; it is not dictating how these shipments should be carried out.⁹⁶ If a state were to ban only certain types of safety packaging, it would be dictating which technical safety measures the shippers could use.⁹⁷ Such a ban would be invalid. On the other hand, a non-discriminatory, total ban of all highway shipments of nuclear waste, which by its nature requires no technical expertise, avoids preemption by the AEA.

Intensive federal regulation of an area is another factor that may dictate a finding of implied preemption.⁹⁸ Undoubtedly, federal regu-

95. See 1959 Hearings, *supra* note 74, at 494, in which the following dialogue appeared:

Senator Hickenlooper. Let me ask you this: Suppose a plant wants to locate adjacent to a city and the city says there is a radiation hazard and, "We will not tolerate it near this city." The Commission says, "There is no radiation hazard. We will locate the plant next to the city." Do we take away from the city? That is what we do here—we take away from the city the right to determine that fact.

Representative Price. I do not think we would. You would honor the zoning regulations of any State.

This indicates that Congress intended to permit the states to retain their non-technical authority, such as zoning power. Thus, if there is any exclusive authority in the NRC, it is exclusive only as to technical matters. This view is strengthened by the fact that the NRC does not have exclusive authority over the transportation of nuclear materials. It shares its regulatory authority with the Department of Transportation (DOT). Trosten & Ancarrow, *Federal-State-Local Relationships in Transporting Radioactive Materials: Rules of the Nuclear Road*, 68 Ky. L.J. 251, 257-58 (1979-1980). In a Memorandum of Understanding, signed by the NRC and DOT on June 8, 1979, the NRC stated that its own authority over such transport applies only to the "administrative, procedural, and technical requirements necessary to protect the public health and safety." *Transportation of Radioactive Materials; Memorandum of Understanding*, 44 Fed. Reg. 38690, 38690-91 (1979) (emphasis added).

96. Cf. *Pacific Gas & Elec. Co. v. State Energy Resources Conservation & Dev. Comm'n*, 103 S. Ct. 1713, 1722 (1983) (AEA allows the state to decide whether to permit the construction of nuclear reactors); 1959 Hearings, *supra* note 74, at 494 (state may make zoning regulations prohibiting construction of nuclear plants); Wiggins, *Federalism Balancing and the Burger Court: California's Nuclear Law as a Preemption Case Study*, 13 U.C.D. L. Rev. 3, 61-67 (1979) (how nuclear plants are constructed and operated has been preempted, but whether they should be constructed is a state decision).

97. Some state statutes, permitting the state to selectively choose which shipments of nuclear waste to allow, see *supra* note 13 and accompanying text, would be invalid under this analysis. Selecting one type of safety measure as permissible while stating that another is not would be a technical decision.

98. See *supra* note 36 and accompanying text.

lation in this area has been pervasive.⁹⁹ Nevertheless, while the pervasiveness of federal regulations is a factor to be considered, it is not sufficient to cause preemption.¹⁰⁰ Modern legislation often involves areas requiring intricate and complex regulations from Congress. The fact that Congress must enact comprehensive legislation because of the nature of the regulated field does not mean that its enactments were intended as the exclusive means of meeting the problem.¹⁰¹ Thus, especially considering that the technical nature of the nuclear field demands a high level of intricate regulations,¹⁰² mere pervasiveness cannot settle the question of the extent of the preemption.

The need for uniformity has been asserted as another ground for finding an implied preemption.¹⁰³ A total ban on the shipment of nuclear waste does not, however, disrupt the uniformity of the safety regulations promulgated by the NRC. A ban prohibiting all highway transportation of nuclear waste regardless of the protective measures employed will not force carriers to use additional safety measures that are not required elsewhere.¹⁰⁴ If entry into the state depended on the

99. The NRC regulations can be found in 10 C.F.R. pts. 0-199 (1983). They include standards for domestic licensing, *id.* pt. 2, debt collection procedures, *id.* pt. 15, human uses of byproduct material, *id.* pt. 35, the packaging of radioactive material for transport, *id.* pt. 71, and the granting of patent licenses, *id.* pt. 81.

100. *See De Canas v. Bica*, 424 U.S. 351, 359-60 (1976) (comprehensiveness of regulations of immigration and naturalization cannot, without more, be read as preempting state regulation of aliens); *New York State Dep't of Social Servs. v. Dublino*, 413 U.S. 405, 415 (1973) (mere comprehensive nature of federal work incentive program insufficient to support claim of preemption).

101. *De Canas v. Bica*, 424 U.S. 351, 359 (1976) ("[C]omprehensiveness of legislation . . . was to be expected in light of the nature and complexity of the subject."); *New York State Dep't of Social Servs. v. Dublino*, 413 U.S. 405, 415 (1973) ("Given the complexity of the matter . . . a detailed statutory scheme was both likely and appropriate, completely apart from any questions of pre-emptive intent.").

102. *See Rep. C. Holifield, Remarks for Presentation to the Annual Meeting of the American Association for the Advancement of Science* (Dec. 30, 1957), *reprinted in Federal-State Cooperation*, *supra* note 42, at 504-05.

103. *See supra* notes 37-38 and accompanying text.

104. *Cf. Ray v. Atlantic Richfield Co.*, 435 U.S. 151, 179 (1978) (tug-escort requirement and resultant additional cost for vessels not meeting state design standards does not force compliance with those standards); *Huron Portland Cement Co. v. Detroit*, 362 U.S. 440, 448 (1960) (municipal ordinance for smoke emissions which would require structural changes in federally licensed vessels does not disrupt national uniformity because there was no showing it actually conflicted with other local ordinances); *Kelly v. Washington*, 302 U.S. 1, 14-15 (1937) (state may not impose particular standards as to structure and design of vessels beyond those that are essential to safety and seaworthiness). Thus, the uniformity requirement is only breached if the state action forces compliance with state measures that conflict with the measures of other states. *See, e.g., Bibb v. Navajo Freight Lines*, 359 U.S. 520, 527, 529 (1959) (conflicting state requirement as to type of mudguard); *Southern Pac. Co. v. Arizona*, 325 U.S. 761, 771-72 (1945) (state law prohibiting longer trains that were used outside the state); *Hall v. DeCuir*, 95 U.S. 485, 489 (1877) (conflicting state requirement as to the seating of the different races on a river vessel).

types of safety precautions employed, the ban would be open to attack on the basis of the need for national uniformity.¹⁰⁵ The shipper would be forced to choose either to use the protective measures permitted by the banning state, or to be precluded from shipping through that state. If other states required different safety measures, national uniformity would be disrupted. A total ban that does not consider the protective means used, however, would not be preempted on this ground.

4. Frustration of Objectives

Absent an implied preemption, the question arises whether such a ban would frustrate the objectives of Congress in passing the AEA.¹⁰⁶ A ban on the transportation of nuclear waste would seriously hamper the growth of the nuclear industry in this country.¹⁰⁷ Although the general purpose of Congress may be to promote the use of nuclear power, that goal is not meant to be achieved "at all costs."¹⁰⁸ A statement of general purpose does not demonstrate a congressional intent to preempt any state action that might hamper the achievement of that purpose.¹⁰⁹

Congress itself has provided the means by which a state may defeat the general objectives of the AEA. For example, a state could prevent the development of nuclear power plants by means of stringent land use requirements,¹¹⁰ or by using the authority granted to the states under the Clean Air Act Amendments of 1977.¹¹¹ Because a state could

105. Cf. *Bibb v. Navajo Freight Lines*, 359 U.S. 520, 527, 529 (1959) (state permitted trucks with contoured mudguards to enter, but not those with straight mudguards); *Southern Pac. Co. v. Arizona*, 325 U.S. 761, 782 (1945) (state allowed only trains with a maximum length of 70 cars to enter, while most other states permitted trains with more than 70 cars).

106. See *supra* note 39 and accompanying text.

107. See *supra* note 15 and accompanying text.

108. *Silkwood v. Kerr-McGee Corp.*, 52 U.S.L.W. 4043, 4048 (U.S. Jan. 10, 1984) (quoting *Pacific Gas & Elec. Co. v. State Energy Resources Conservation & Dev. Comm'n*, 103 S. Ct. 1713, 1731 (1983)); 42 U.S.C. § 2013(d) (1976) (atomic energy should be developed and utilized only to the extent it is consistent with the health and safety of the public).

109. *Commonwealth Edison Co. v. Montana*, 453 U.S. 609, 633 (1981). In *Commonwealth Edison* the Court found that the congressional objective of the Power-plant and Industrial Fuel Use Act of 1978, 42 U.S.C. §§ 8301-8484 (Supp. V 1981) to "encourage and foster the greater use of coal," *id.* § 8301(b)(3), did not reflect an intent to preempt all state action having an adverse impact on the use of coal. 453 U.S. at 633; see *Exxon Corp. v. Governor of Maryland*, 437 U.S. 117, 133-34 (1978) (Sherman Act's basic national policy favoring free competition is not a congressional decision to preempt all state authority to enact laws conflicting with that policy).

110. See *supra* note 95. See *In re Consolidated Edison Co.*, 7 N.R.C. 31, 34 (1978).

111. See 42 U.S.C. §§ 7416, 7422 (Supp. V 1981).

prevent the operations of nuclear facilities in these other legitimate ways,¹¹² it is not rational to single out a ban on nuclear waste transportation as the one way that frustrates the objectives of Congress.

These arguments demonstrate that Congress has not clearly and unambiguously expressed its intent to preempt the traditional state police power in this area.¹¹³ A ban on the highway transportation of nuclear waste is a non-technical regulation, and there is at least some doubt as to whether the states' authority over non-technical regulations of radiation hazards has been preempted. In addition, section 2021(g) suggests that a state may be able to engage in some form of technical regulation.¹¹⁴ These ambiguities lead to the conclusion that the courts should uphold this exercise of the police power until Congress asserts itself with more clarity.¹¹⁵

B. *The Nuclear Waste Policy Act and the Hazardous Materials Transportation Act*

Two other federal statutes must be considered for their preemptive effect. A close examination shows that neither can be considered as preemptive authority.¹¹⁶

112. See *In re Consolidated Edison Co.*, 7 N.R.C. 31, 34 (1978) (state could prevent or halt construction or operation of nuclear facility for some valid reasons under state law without conflicting with the AEA).

113. In addition, a court might not even reach the question of the extent of federal preemption of nuclear safety concerns. States clearly have the authority to regulate non-radiation hazards. *Pacific Gas & Elec. Co. v. State Energy Resources Conservation & Dev. Comm'n.*, 103 S. Ct. 1713, 1726 (1983); *Illinois v. Kerr-McGee Chem. Corp.*, 677 F.2d 571, 580 (7th Cir.), *cert. denied*, 103 S. Ct. 469 (1982); S. Rep. No. 870, 86th Cong., 1st Sess. 12, *reprinted in* 1959 U.S. Code Cong. & Ad. News 2872, 2882. The question of preemption is only over the extent of the states' authority to regulate radiation hazards. At least one federal court has recognized the difficulty in distinguishing what is or is not a regulation of a radiation hazard. *Illinois v. Kerr-McGee Chem. Corp.*, 677 F.2d 571, 581 (7th Cir.), *cert. denied*, 103 S. Ct. 469 (1982). The ban under consideration exemplifies this difficulty. The states would not be trying to regulate the nuclear materials themselves, but rather the transportation of those materials. They would not be regulating how the radiation source should be transported, but would be forbidding that transportation out of concern for the dangers of radiation. It is not totally clear that such a ban would actually constitute a regulation of a radiation hazard. *Cf. 1959 Hearings, supra* note 74, at 494 (city's use of its zoning laws to prevent locating a nuclear power plant next to the city based on the claim that there is a radiation hazard is not a regulation of a radiation hazard).

114. See *supra* notes 76-77 and accompanying text.

115. See *supra* notes 30-32 and accompanying text.

116. An argument might be raised that the cumulative effect of all three statutes evinces a congressional intent to preempt. This argument would be based on the claim that preemption exists because of the pervasiveness of the federal occupation of the field. See *supra* note 36 and accompanying text. In a field as technically complex as nuclear power, however, a high degree of federal regulation is to be expected. See *supra* note 102 and accompanying text. Thus, the mere pervasiveness of the regula-

The Nuclear Waste Policy Act (NWPA) was created to provide much-needed disposal facilities for the ever-growing amounts of nuclear waste.¹¹⁷ While the NWPA does not address the states' right to ban totally the transportation of nuclear waste,¹¹⁸ it does expressly state that it should not be construed as affecting any state or local law "pertaining to the transportation of spent nuclear fuel or high-level radioactive waste."¹¹⁹ In the face of this section, a finding of a congressional intent to preempt cannot be justified. Furthermore, the NWPA gives a state broad power to prevent the existence of nuclear waste disposal facilities within its borders.¹²⁰ Thus, a state ban on the transportation of nuclear waste would not frustrate the objectives of Congress, because Congress already allows the states to play a major role in the success or failure of the nuclear waste disposal program.

The Hazardous Materials Transportation Act (HMTA)¹²¹ provides that any state regulation inconsistent with either the statute or the regulations issued under its authority will not be preempted if (1) the level of protection provided by the state is equal to or greater than the protection from the federal requirement and (2) the state regulation does not burden commerce unreasonably.¹²² Although a state ban on the transportation of nuclear waste may be considered inconsistent with the statute,¹²³ it may avoid preemption by meeting the two-part test.¹²⁴ A total ban would satisfy the first requirement because ban-

tions is not sufficient to justify a claim of preemption. See *supra* notes 100-01 and accompanying text. Furthermore, the NWPA should not be included in causing a cumulative effect, because it expressly denies affecting any state or local law with regard to the transportation of nuclear waste. See *infra* note 119 and accompanying text.

117. See *supra* notes 1-8 and accompanying text.

118. See Pub. L. No. 97-425, § 9, 96 Stat. 2206 (1983) (current version at 42 U.S.C.A. § 10,108 (West 1983)).

119. *Id.*

120. *Id.* § 115, 96 Stat. 2217 (current version at 42 U.S.C.A. § 10,135 (West 1983)). A state may submit a notice of disapproval of a proposed nuclear waste disposal site to Congress. *Id.* § 116(b) (current version at 42 U.S.C.A. § 10,136(b) (West 1983)). If Congress does not pass a joint resolution within 90 calendar days of continuous session approving the site, the site shall be disapproved. *Id.* § 115(c) (current version at 42 U.S.C.A. § 10,135(c) (West 1983)); see H.R. Rep. No. 491, pt. 1, 97th Cong., 2d Sess. 47, reprinted in 1982 U.S. Code Cong. & Ad. News 3792, 3813.

121. Pub. L. No. 93-633, 88 Stat. 2156 (1975) (codified as amended at 49 U.S.C. §§ 1801-1812 (1976 & Supp. V 1981)).

122. *Id.* § 112(b), 88 Stat. 2161 (codified at 49 U.S.C. § 1811(b) (1976)).

123. 49 C.F.R. pt. 177 app. A (1982) states that a state routing rule applying to large quantities of radioactive materials is inconsistent with 49 C.F.R. pt. 177 (regulations promulgated under the authority of the HMTA) if it prohibits the transportation of such materials by highway without providing for an alternate route.

124. In *City of New York v. United States Dep't of Transp.*, 715 F.2d 732 (2d Cir. 1983), dismissed for lack of jurisdiction, 52 U.S.L.W. 3630 (U.S. Feb. 27, 1984),

ning the waste prevents it from causing any harm in the state at all. The second part of the test requires the same analysis as that employed under the commerce clause. If the state ban survives scrutiny under the commerce clause, it will not be preempted by the HMTA.¹²⁵

II. THE COMMERCE CLAUSE CHALLENGE

The Constitution grants Congress the power to regulate commerce among the states.¹²⁶ This grant contains no explicit restraint on the authority of the states to exercise power over commerce in the absence of congressional action.¹²⁷ Some areas, however, are not proper spheres for the exercise of state authority.¹²⁸ Even in the face of congressional silence, the commerce clause prohibits a state from erecting barriers to the free flow of interstate commerce.¹²⁹ This is known as the "dormant" or "negative" side of the commerce clause.¹³⁰

New York City attempted to have the DOT regulations promulgated under the HMTA declared invalid. *Id.* at 739. Such a result would have allowed New York City to ban all transportation of nuclear waste without contravening the HMTA because there would not have been any conflicting DOT regulations. *Id.* at 737. The court held, however, that the DOT issuance of such regulations was within the authority of the agency. *Id.* at 740. The HMTA does not require the DOT to promulgate regulations embodying the highest degree of safety. *Id.* This decision, however, does not mean that all statutes imposing bans are invalid. It means only that a state cannot claim that such bans are consistent with the HMTA. Rather, a state, to avoid preemption, will have to travel the more difficult route of attempting to qualify under the two-part test. See *supra* note 122 and accompanying text.

125. See *infra* pt. II.

126. U.S. Const. art. I, § 8, cl. 3. See *supra* note 21 and accompanying text.

127. *Southern Pac. Co. v. Arizona*, 325 U.S. 761, 767 (1945) (residual power in state to make laws governing matters of local concern even though interstate commerce is affected); *accord Kassel v. Consolidated Freightways Corp.*, 450 U.S. 662, 669 (1981) (same); J. Nowak, *supra* note 22, at 266; L. Tribe, *supra* note 22, § 6-2, at 320; see *Great Atl. & Pac. Tea Co. v. Cottrell*, 424 U.S. 366, 371 (1976) (state has broad power to protect public health despite an effect on the free flow of commerce); *Sligh v. Kirkwood*, 237 U.S. 52, 58 (1915) (state may protect safety and welfare of the people, although the state measures incidentally affect interstate commerce). In addition, the tenth amendment emphasizes that the state is permitted to exercise any legislative powers not delegated to the federal government. U.S. Const. amend. X; see *National League of Cities v. Usery*, 426 U.S. 833, 845 (1976); *Fry v. United States*, 421 U.S. 542, 547 n.7 (1975); *United States v. Darby*, 312 U.S. 100, 124 (1941); *Asbell v. Kansas*, 209 U.S. 251, 254-55 (1908); 2 C. Antieau, *supra* note 33, § 10:37, at 75.

128. *Hunt v. Washington State Apple Advertising Comm'n*, 432 U.S. 333, 350 (1977) (overriding requirement of a national "common market"); *Great Atl. & Pac. Tea Co. v. Cottrell*, 424 U.S. 366, 375 (1976) (national interest in freedom for interstate commerce); *Huron Portland Cement Co. v. Detroit*, 362 U.S. 440, 444 (1960) (state regulation may not stand if it disrupts required uniformity of interstate commerce).

129. See *supra* note 22 and accompanying text.

130. J. Nowak, *supra* note 22, at 267; B. Schwartz, *supra* note 29, at 126; L. Tribe, *supra* note 22, § 6-2, at 320.

Because Congress has not clearly preempted a state's authority to exercise its police powers to erect a ban against the transportation of nuclear waste,¹³¹ it must be determined whether such an action would violate the "negative" side of the commerce clause.

The police power of a state does not rest upon any commercial power, interstate or otherwise. Rather, it is founded on the recognition that there are some areas of legislation, such as "the preservation of health, prevention of crime, and protection of the public welfare," that can best be implemented by the state.¹³² The Supreme Court has recognized, however, that state legislation protecting those concerns may result in a burden on interstate commerce.¹³³ In such a situation, the courts are left with the duty of drawing a line between a permissible and an impermissible burden on commerce.¹³⁴

Due to the special nature of a state's police power, the courts grant it broad deference, particularly if the safety purpose is connected with the use of state highways.¹³⁵ Such regulations are granted a "strong presumption of validity" even in the face of an argument that the regulation burdens interstate commerce.¹³⁶ Alternative ways will not

131. See *supra* pt. I.

132. The License Cases, 46 U.S. 504, 631, 5 How. 504, 632 (1847) (Grier, J., concurring); see 2 C. Antieau, *supra* note 33, § 10:2, at 6; B. Schwartz, *supra* note 29, at 52, 129.

133. Kassel v. Consolidated Freightways Corp., 450 U.S. 662, 671 (1981); City of Philadelphia v. New Jersey, 437 U.S. 617, 623-24 (1978); Bibb v. Navajo Freight Lines, 359 U.S. 520, 523-24 (1959); H.P. Hood & Sons v. Du Mond, 336 U.S. 525, 531-32 (1949); Sligh v. Kirkwood, 237 U.S. 52, 59-60 (1915); 2 C. Antieau, *supra* note 33, §§ 10:39-40, at 82-84; see B. Schwartz, *supra* note 29, at 128.

134. Raymond Motor Transp., Inc. v. Rice, 434 U.S. 429, 440-41 (1978); Great Atl. & Pac. Tea Co. v. Cottrell, 424 U.S. 366, 371 (1976); Pike v. Bruce Church, Inc., 397 U.S. 137, 142 (1970); B. Schwartz, *supra* note 29, at 128.

135. Raymond Motor Transp., Inc. v. Rice, 434 U.S. 429, 443-44 (1978); Bibb v. Navajo Freight Lines, 359 U.S. 520, 523 (1959); Railway Express Agency v. New York, 336 U.S. 106, 111 (1949); accord Kassel v. Consolidated Freightways Corp., 450 U.S. 662, 670 (1981); see 2 C. Antieau, *supra* note 33, § 10:40, at 83; B. Schwartz, *supra* note 29, at 130-31.

136. Bibb v. Navajo Freight Lines, 359 U.S. 520, 524 (1959); accord Raymond Motor Transp., Inc. v. Rice, 434 U.S. 429, 443-44 (1978); Washington State Bldg. & Constr. Trades Council v. Spellman, 684 F.2d 627, 631 (9th Cir. 1982), *cert. denied*, 103 S. Ct. 1891 (1983). The general test for validity of state regulations not involving the exercise of the states' police power was announced in Pike v. Bruce Church, Inc., 397 U.S. 137 (1970). The Pike test requires that the state action regulate in an evenhanded, non-discriminatory manner to serve a legitimate local purpose while having only an incidental effect upon interstate commerce. *Id.* at 142; see Hughes v. Oklahoma, 441 U.S. 322, 336 (1979). If the state regulation meets this requirement, it will be upheld provided the resultant burden on interstate commerce is not "clearly excessive in relation to the putative local benefits." Pike, 397 U.S. at 142. The extent to which a burden on commerce will be tolerated depends upon the type of legitimate local interest involved, and upon whether that purpose could be served by a less burdensome alternative. *Id.* A different test is employed when the local interest seeks

be sought to achieve the state's goal.¹³⁷ Still, "the incantation of a purpose to promote the public health or safety does not insulate a state law from Commerce Clause attack."¹³⁸

The Supreme Court's most recent attempt to formulate a test addressing state restrictions on the use of its highways arose in *Kassel v. Consolidated Freightways Corp.*¹³⁹ Unfortunately, this plurality decision resulted in not one, but three possible tests. These tests, however, all share some basic points. First, they require that the regulation, to be upheld, must be non-discriminatory.¹⁴⁰ For example, a state's attempt to ban the transportation of nuclear waste into, but not within, the state would be unconstitutional.¹⁴¹ No matter how salutary the state's 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."¹⁴² Obviously, the places of origin of the nuclear waste have no effect on the radioactive hazards posed by such materials.¹⁴³ Therefore, to withstand the commerce clause challenge, a state must ban the shipment of nuclear waste originating inside, as well as outside, its borders.

to protect the public health and safety. See *infra* notes 139-83 and accompanying text.

137. *Raymond Motor Transp., Inc. v. Rice*, 434 U.S. 429, 449-50 (1978) (Blackmun, J., concurring); *Bibb v. Navajo Freight Lines*, 359 U.S. 520, 524 (1959); see *Brotherhood of Locomotive Firemen & Enginemen v. Chicago, R.I. & Pac. R.R.*, 393 U.S. 129, 138-39 (1968); *South Carolina State Highway Dep't v. Barnwell Bros.*, 303 U.S. 177, 190 (1938).

138. *Kassel v. Consolidated Freightways Corp.*, 450 U.S. 662, 670 (1981); accord *Raymond Motor Transp., Inc. v. Rice*, 434 U.S. 429, 443 (1978).

139. 450 U.S. 662 (1981).

140. See *id.* at 675-78 (Powell, J., plurality opinion); *id.* at 687 (Brennan, J., concurring); *id.* at 692 (Rehnquist, J., dissenting).

141. *Washington State Bldg. & Constr. Trades Council v. Spellman*, 684 F.2d 627, 631 (9th Cir. 1982), *cert. denied*, 103 S. Ct. 1891 (1983); *Illinois v. General Elec. Co.*, 683 F.2d 206, 213-14 (7th Cir. 1982), *cert. denied*, 103 S. Ct. 1891 (1983).

142. *City of Philadelphia v. New Jersey*, 437 U.S. 617, 626-27 (1978); see, e.g., *Hunt v. Washington State Apple Advertising Comm'n*, 432 U.S. 333, 350-51 (1977) (North Carolina law invalid that imposed an additional cost on Washington, but not on North Carolina, apple shippers); *Great Atl. & Pac. Tea Co. v. Cottrell*, 424 U.S. 366, 375 (1976) (only state interests of substantial importance could validate a discriminatory state law relating to sale of out-of-state milk); *Dean Milk Co. v. City of Madison*, 340 U.S. 349, 354 (1951) (discriminatory state exercise of its power to protect public health and safety invalid if reasonable non-discriminatory alternatives are available).

143. *Illinois v. General Elec. Co.*, 683 F.2d 206, 213 (7th Cir. 1982) ("However compelling the state's interest in safeguarding its residents from the hazards of radioactivity, that interest is unaffected by the origin of the radioactive material."), *cert. denied*, 103 S. Ct. 1891 (1983).

Secondly, all three views in *Kassel* provide that the safety benefits sought to be achieved must be more than mere illusion.¹⁴⁴ Whether a particular state can actually show a safety benefit as a result of the ban necessarily depends on the specific facts, such as the population density, terrain and road conditions of each state.¹⁴⁵ This factual issue may be the greatest obstacle in the way of the ban. The commercial transportation of even highly radioactive materials has an excellent safety record.¹⁴⁶ In 1981, the Department of Transportation issued a report concluding that "the public risks in transporting these materials by highway are too low to justify the unilateral imposition by local governments of bans and other severe restrictions on the highway mode of transportation."¹⁴⁷ The casks in which this waste is packaged are constructed under stringent safety requirements,¹⁴⁸ and tested extensively by such means as dropping them 2000 feet onto the desert floor.¹⁴⁹

Congress, however, in passing the Nuclear Waste Policy Act, recognized that while the hazards incident to nuclear waste disposal are small in theory, "[i]n practice, . . . management of nuclear wastes has been inadequate to guarantee that the risks will be small in fact."¹⁵⁰ This caution seems justified in the light of some incidents, such as one in which a canister of "radioactive material" fell off a truck and was not found until twelve hours later.¹⁵¹ Because a finding of an actual

144. *Kassel v. Consolidated Freightways Corp.*, 450 U.S. 662, 671 (1981) (Powell, J., plurality opinion); *id.* at 681 n.1 (Brennan, J., concurring); *id.* at 692 (Rehnquist, J., dissenting) (quoting *Raymond Motor Transp., Inc. v. Rice*, 434 U.S. 429, 449 (1978) (Blackmun, J., concurring)).

145. *Cf. Atchison, T. & S.F. Ry. v. Public Utils. Comm'n*, 346 U.S. 346, 349-50, 355 (1953) (state may force railroad to enlarge grade separations that cause traffic problems in rapidly growing city, despite material interference with interstate commerce); *South Carolina State Highway Dep't v. Barnwell Bros.*, 303 U.S. 177, 195-96 (1938) (conditions under which state highways are constructed are not uniform throughout the country, and thus a state legislature is not bound by the judgment of other legislatures as to the burden those highways can withstand); *Nashville, C. & St. L. Ry. v. White*, 278 U.S. 456, 459 (1929) (state requirement to have a flagman at railroad crossings, despite presence of electric signal, cannot be said to be unnecessary and unreasonable when those crossings are constantly travelled).

146. Inconsistency Ruling (IR-1), 43 Fed. Reg. 16,954, 16,957 (1978).

147. 46 Fed. Reg. 5299 (1981).

148. *See* 10 C.F.R. pts. 71, 73 (1983).

149. *N.Y. Times*, Oct. 6, 1983, at A18, col. 1. Another test is placing the casks on trucks and railroad cars, which are then crashed into concrete walls at speeds of 60 to 84 miles an hour. *Id.* These tests are designed to ensure that the casks will not rupture. *Id.*

150. H.R. Rep. No. 491, 97th Cong., pt. 1, 2d Sess. 29, *reprinted in* 1982 U.S. Code Cong. & Ad. News 3792, 3796.

151. *Philadelphia Inquirer*, Nov. 25, 1983, at 8A, col. 1. While the cask did not rupture, the danger still existed that somebody might pick it up. If somebody had picked it up, according to Mike Mobley of the Tennessee Department of Health and Environment, "it would be a very serious danger." *Id.*; *see Norton, Policy Issues in the Routing of Radioactive Materials Shipments*, 21 *Nat. Resources J.* 735, 739 (1981)

danger would depend on the individual facts of each case, this Note cannot make any definitive determination of the actual risks involved. For the remainder of the Note, it shall be presumed that some safety benefit exists. If, in an actual case, this safety benefit is not shown, the benefit will be deemed illusory and the ban will be invalidated.¹⁵²

Beyond these common factors, the tests differ. The first test, proposed by Justice Powell,¹⁵³ recognizes the deference normally given to state actions based on the police power.¹⁵⁴ The state action, however, must first be analyzed to see if it is worthy of such deference.¹⁵⁵ If the state action bears disproportionately upon out-of-state residents, less deference will be afforded,¹⁵⁶ and the Court will balance the safety interest with the burdens on commerce.¹⁵⁷ If such a balance is necessary, the measure will be invalidated if the safety benefit is only marginal, while the burdens on commerce are substantial.¹⁵⁸ If, however, such deference is granted and the safety benefits are not illusory, the Court will not second-guess the state legislative judgment about the importance of the safety purpose in comparison to the related burdens on interstate commerce.¹⁵⁹

(between January 1, 1978 and December 31, 1980, there were 289 reported incidents of radioactive shipments in the United States emitting radiation in excess of the permitted levels); Shapley, *Radioactive Cargoes: Record Good but the Problems Will Multiply*, 172 Science 1318, 1318-19 (June 25, 1971) (quoting an official at the United States Department of Transportation Office of Hazardous Materials as stating that "someday some of these shipments will be involved in severe accidents").

152. See *supra* note 144 and accompanying text.

153. *Kassel*, 450 U.S. at 664 (plurality opinion). Justice Powell was joined in the plurality decision by Justices White, Blackmun and Stevens.

154. *Id.* at 670.

155. See *id.* at 678 (traditional deference was not given to the state judgment, thus the controlling factors are the relative safety of the state regulation and the substantiality of the burden on interstate commerce). A state is granted this deference because of the assumption that, if a state safety regulation does not on its face discriminate against interstate commerce, the burden on the state's own economic interests will guarantee that the political processes of the state will serve as a check on the passage of any unduly burdensome regulations. *Id.* at 675; *Raymond Motor Transp., Inc. v. Rice*, 434 U.S. 429, 444 n.18 (1978).

156. *Kassel*, 450 U.S. at 675-76.

157. *Id.* at 671 & n.12 (A state action is invalid if the safety interest is illusory and the federal interest is significantly impaired. It is "highly relevant" to this balance that the state action is not given the traditional deference.); see *id.* at 678 (when state safety judgment does not merit traditional deference, the controlling factors are the actual safety benefits and the extent of the burden on interstate commerce).

158. *Id.* at 670, 678.

159. *Id.* at 670 (quoting *Raymond Motor Transp., Inc. v. Rice*, 434 U.S. 429, 449 (1978) (Blackmun, J., concurring)); see *id.* at 697 n.8 (Rehnquist, J., dissenting) (reading the plurality opinion as holding that a state need only prove that the safety benefits are not illusory, when the state action merits the "strong presumption of validity").

The first line of inquiry under the Powell test, therefore, is whether the proposed state action has a disproportionate impact on out-of-state residents.¹⁶⁰ A state's ban on the transportation of nuclear waste would not have such an impact. The burden imposed on out-of-state power plants by the ban would merely be the inconvenience of a detour or of finding a new disposal site.¹⁶¹ For the in-state residents, the burden is more onerous. A nuclear plant within a state might be forced to shut down, because of the ban, when its on-site storage facilities reach capacity.¹⁶² The only means of avoiding such a result would be either to have a permanent disposal facility located on the same grounds as the power plant, or to use alternative means of transportation, such as transport by rail or waterway.¹⁶³ If a state had no nuclear facilities, the ban would still be burdensome, in that it would at least strongly discourage, if not totally preclude, the possibility that the state could avail itself of a major energy source. Thus, the economic pressures caused within the state by the ban would serve as the necessary political check on hasty state action.¹⁶⁴

Thus, a ban would be given full deference. The Powell test would then merely ask whether the safety benefit is illusory.¹⁶⁵ Assuming that this benefit is non-illusory,¹⁶⁶ a ban would be upheld under this test.

The second approach, proposed by Justice Brennan,¹⁶⁷ rejects any attempt at balancing in the field of safety regulations.¹⁶⁸ It is not the province of the courts to second-guess the judgment of a state's lawmakers on the proper balance to be struck between competing inter-

160. See *id.* at 675-76. See *supra* notes 154-57 and accompanying text.

161. See Trosten & Ancarrow, *supra* note 22, at 287.

162. See *id.* See *supra* note 15 and accompanying text.

163. See *supra* note 15 and accompanying text.

164. Cf. *Kassel v. Consolidated Freightways Corp.*, 450 U.S. 662, 676 (1981) (political check lacking because state's "border cities" received the benefit of longer trucks without the state accepting the burdens of interstate traffic). This rationale, however, does not apply with equal force to a city or local ban on such transportation. The economic effect of a local ban upon the municipality would not be as harsh as the economic effect of a state-wide ban upon the state. While a local municipality may ban the transportation of nuclear waste within its borders, such a ban would not prevent the construction of a nuclear facility within the state. Consequently, a city would be able to have its proverbial cake and eat it too. The municipality could prevent the transportation of nuclear waste through its streets, yet avail itself of the energy generated by a nuclear plant located somewhere else within the state. Thus, the normal deference to a municipal ban might not be accorded, and the municipal ban would fail where a state-wide ban might succeed.

165. See *supra* notes 144, 159 and accompanying text.

166. See *supra* notes 145-52 and accompanying text.

167. 450 U.S. 662, 679 (Brennan, J., concurring). Justice Brennan was joined in his concurrence by Justice Marshall.

168. *Id.* at 681 n.1.

ests.¹⁶⁹ Once the safety benefits are shown as not illusory or insubstantial, the courts should defer to the judgment of a state.¹⁷⁰ The courts should not weigh a safety interest against an economic interest.¹⁷¹ Under this analysis, however, "the local benefits actually sought to be achieved by the State's lawmakers, and not . . . those suggested after the fact by counsel," must be considered.¹⁷² In other words, provided a state's legislative intent was actually to promote the public health and safety, and these safety benefits were not illusory, the regulation is permitted to stand.¹⁷³ Thus, a ban having a non-illusory safety benefit would be invalidated only if the state's legislative intent was not to enact the ban for that safety purpose, but for some other reason. If the state is sincere in its safety justification, the ban would withstand this commerce clause analysis.¹⁷⁴

The third view, suggested by Justice Rehnquist,¹⁷⁵ also rejects any balancing approach.¹⁷⁶ Safety and economic interests are considered too dissimilar to be able to make some vague claim that one "outweighs" the other.¹⁷⁷ Accordingly, Justice Rehnquist would automatically grant deference to any state action claiming a safety purpose.¹⁷⁸ Provided the safety measure is rationally related to achieving its purpose, the only other consideration is whether the safety justification is merely a pretext for discriminating against interstate commerce.¹⁷⁹ This pretext is presumed to exist if the safety benefit is illusory.¹⁸⁰ If the benefit is not illusory, however, the state action will be upheld.¹⁸¹

169. *Id.* at 686-87 (quoting *Raymond Motor Transp., Inc. v. Rice*, 434 U.S. 429, 449 (1970) (Blackmun, J., concurring)).

170. *Id.* at 681 n.1.

171. *Id.* at 681 n.1, 686.

172. *Id.* at 680.

173. *See id.* at 680-81 & n.1.

174. The language of Justice Brennan's opinion, however, hints that he might invalidate some safety measures related to interstate commerce as being protectionist in nature. *See id.* at 685. The decision of one state to protect its own safety interests at the expense of the safety or other interests of other states is a form of safety protectionism, which would be invalidated just as economic protectionist measures are. *Id.* at 686-87. As Justice Rehnquist points out, however, all safety regulations that affect commerce are, by definition, "protectionist." *Id.* at 705-06 (Rehnquist, J., dissenting). Justice Brennan's view would prevent a state from ever taking more stringent safety measures than other states in areas that affect commerce. The states would have to permit unsafe travel through their jurisdiction simply because some other state permitted it. *See id.*

175. *Id.* at 687 (Rehnquist, J., dissenting). Justice Rehnquist was joined in his dissent by Chief Justice Burger and Justice Stewart.

176. *Id.* at 698-99.

177. *See id.* at 691.

178. *See id.*

179. *Id.* at 692.

180. *Id.*

181. *Id.* at 697 n.8 (state needs only to show safety benefits are not illusory, and that a rational relationship exists between the state regulation and safety).

A ban is a rational means of protecting against the hazards incident to the transportation of nuclear waste,¹⁸² and the benefit achieved by it has been presumed not to be illusory.¹⁸³ Thus, the Rehnquist view would not invalidate such a ban.

Under any of the three tests, therefore, it is likely that a non-illusory, non-discriminatory ban on the highway transportation of nuclear waste would not be invalidated under the "negative" side of the commerce clause. Considering the societal interest in the continued existence of nuclear energy, the question remains whether the Court should develop a separate test for nuclear issues. For example, should the existence of a less burdensome alternative,¹⁸⁴ such as merely restricting the transportation to certain quiet hours of the night, be sufficient to defeat a state's regulation? Such an approach would deny to a state legislature its accustomed deference.¹⁸⁵ As Justice Rehnquist has pointed out, such a course would involve the judiciary in deciding state policy.¹⁸⁶ A court would be imposing its opinion on a state as to what is the least burdensome way to protect the public health and safety.¹⁸⁷ Such policy decisions, particularly in an area traditionally within the states' domain, are not the proper function of the judiciary.¹⁸⁸ If any federal action is to be taken to restrict the states' authority in this area, that action should be taken by Congress.

182. Not permitting trucks carrying nuclear waste to enter the state is, to say the least, an effective way of preventing any accidents involving the transportation of that waste from occurring within the state.

183. See *supra* notes 145-52 and accompanying text.

184. The search for a less restrictive alternative exists in other areas of the law. See, e.g., *Doe v. Bolton*, 410 U.S. 179, 200 (1973) (while requirement of residency to receive abortion in hospital within the state might be valid if policy was to preserve state-supported facilities, it is unconstitutional when it applies to private hospitals); *United States v. O'Brien*, 391 U.S. 367, 377 (1968) (governmental regulation is valid if the incidental restriction on first amendment freedoms is "no greater than is essential" to further the governmental interest); *Dean Milk Co. v. City of Madison*, 340 U.S. 349, 354 (1951) (A local statute plainly discriminating against interstate commerce is invalid if "reasonable nondiscriminatory alternatives, adequate to conserve legitimate local interests, are available.").

185. See *supra* notes 154-55 and accompanying text.

186. *Kassel v. Consolidated Freightways Corp.*, 450 U.S. 662, 691 (Rehnquist, J., dissenting) ("It would . . . arrogate to this Court functions of forming public policy, functions which, in the absence of congressional action, were left by the Framers of the Constitution to state legislatures.").

187. See *id.* at 691-92.

188. See *Brotherhood of Locomotive Firemen & Enginemen v. Chicago, R.I. & Pac. R.R.*, 393 U.S. 129, 138 (1968) ("[P]ublic policy can, under our constitutional system, be fixed only by the people acting through their elected representatives."); *Bibb v. Navajo Freight Lines*, 359 U.S. 520, 524 (1959) ("Policy decisions are for the . . . legislature."); *South Carolina State Highway Dep't v. Barnwell Bros.*, 303 U.S. 177, 190 (1938) ("[A] court is not called upon, as are . . . legislatures, to determine what . . . is the most suitable restriction to be applied . . .").

CONCLUSION

Congress has not clearly preempted state police power to such an extent that a state's total ban on the highway transportation of nuclear waste within the state would be impermissible. Neither does current commerce clause analysis of state exercises of the police power render a non-illusory, non-discriminatory ban invalid. A state still retains the authority to pass such a ban on the highway transportation of nuclear waste. The validity of such a ban, however, would ultimately depend upon the ability of a state to document the existence of the claimed safety benefit.

This Note demonstrates that a state might legitimately prevent nuclear waste from travelling through the state by means of motor vehicles. This Note does not suggest that this is necessarily a desirable course of action for a state to undertake. Should Congress consider it undesirable for the states to possess this authority, then Congress, and not the courts, should take steps to prevent the enactment of such a ban.

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