

FEDERAL AND STATE RESPONSIBILITIES IN THE ENVIRONMENTAL CONTROL OF NUCLEAR POWER PLANTS*

I. INTRODUCTION

Rapidly escalating demands for electricity,¹ accompanied by dwindling supplies of fossil fuel² and the emission of pollutants from conventional fossil fuel plants,³ have encouraged the development of nuclear power facilities. Twenty-two nuclear plants are now operational, and fifty-five more are under construction.⁴ Tentative projections show that by 1990, 40 per cent of all generating plants installed in the United States will be powered by nuclear reactors. In the Northeast by that time, nuclear power will provide 58 per cent of the generating capacity.⁵

Although often justified as less damaging to the environment than fossil fuel plants,⁶ there are a number of serious ecological hazards attendant to the operation of nuclear power facilities. The primary safety concern of the Atomic Energy Commission,⁷ the federal agency created by the Atomic Energy Act of 1946⁸ to regulate atomic energy activities, has been the avoidance of a catastrophic accident involving nuclear reactors. A 1959 study by the Brookhaven National Laboratory indicated that such an accident could result in as many as 3400 deaths within a fifteen

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¹ Total consumption of electric energy in the United States rose 400% between 1950 and 1968, although the population increased by only 33%. *Cincinnati Enquirer*, Feb. 7, 1971, Special Supplement (Atomic Power: Paradise Lost or Found?), at 4, col. 5 [hereinafter *Enquirer Supplement*].

² Fossil fuels include coal, residual fuel oil and natural gas. In the years ahead, synthetic gas from coal and liquified natural gas imports will become more important. Coal shortages have been caused in part by labor shortages and transportation problems. In addition, some coal is of limited utility, having sulfur content too high to meet air pollution regulations. There is an abundant supply of residual fuel oil, with technology available to remove the sulphur, but the oil can't be moved economically by pipeline over long distances. Natural gas is environmentally attractive and easy to handle, but there is a shortage of domestic natural gas, and imports are not yet competitive with nuclear power. Hearings on the Environmental Effects of Producing Electric Power Before the Joint Comm. on Atomic Energy, 91st Cong., 1st Sess., pt. 1, at 55 (1969), [hereinafter *Environmental Hearings*].

³ Pollution results from the emission of sulphur dioxide, nitrogen oxides and particulate matter. *Environmental Hearings*, supra note 2, at 810. John Nassikas, Chairman of the Federal Power Commission, has attributed the choice of nuclear power, particularly in the Northeast, to three factors: low fuel cost, low fuel transportation, and the virtual absence of atmospheric pollution. *Id.* at 35.

⁴ Hammond, *Breeder Reactors: Power for the Future*, 174 *Science* 807, 810 (1971).

⁵ *Environmental Hearings*, supra note 2, at 35.

⁶ Address by Dr. James Schlesinger, Chairman of the Atomic Energy Commission, Atomic Industrial Forum and the American Nuclear Society, Oct. 20, 1971, reported in *N.Y. Times*, Oct. 21, 1971, at 1, col. 6.

⁷ Hereinafter the AEC or the Commission.

⁸ Act of Aug. 1, 1946, ch. 724, 60 Stat. 755.

mile radius, and \$7,000,000 in property damage, but that the possibility of a calamity was extremely remote.⁹ Fortunately, such an accident has never occurred.¹⁰

Hazards resulting from the normal operation of a nuclear power plant can be divided into two categories: radiological¹¹ and nonradiological. While the full spectrum of possible injury has not yet been determined, radiation exposure can result in somatic effects such as increased susceptibility to disease and development of cancer, and genetic defects caused by gene mutation. The reproductive organs are among the most radiosensitive in the entire body, and the predominant scientific view is that there is no dose threshold for these organs;¹² the damage is completely cumulative. Until recently there had never been any substantial criticism of federal radiation emission standards. However, scientists at the Lawrence Radiation Laboratory in California have charged that present standards for maximum emission are too low, and that increased construction of nuclear power plants could lead to radiation-induced fatalities.¹³ This attack has been rejected by the AEC.¹⁴

Federal radiation standards had also been criticized on the ground that they were determined solely in relation to human safety levels and not with respect to the ecosystem as a whole.¹⁵ This charge is no longer true now that the Environmental

⁹ Letter from Harold S. Vance, Acting Chairman of the Atomic Energy Commission, to the Joint Committee on Atomic Energy, summarizing the study. H.R. Rep. No. 435, 85th Cong. 1st Sess., 31-34 (1957). 42 U.S.C. § 2210 (1970), commonly known as the Price-Anderson Act, requires licensees to carry the maximum amount of private insurance available. The AEC indemnifies the licensees for \$500,000,000, less the amount that the private financial protection required exceeds \$60,000,000.

¹⁰ But see Green, *Safety Determinations in Nuclear Power Licensing: A Critical View*, 43 Notre Dame Law. 633, 650 (1969), for a documentation of two mishaps; one at The Atomic Energy Commission National Reactor Testing Station in Idaho, resulting in the death of three operating personnel; the other concerning the small meltdown of the fuel core of the Fermi reactor near Detroit in 1966. Although there were no injuries in the latter situation, a major meltdown of the reactor fuel can result in a nuclear mass that cannot be cooled or contained. No member of the general public has ever been injured in any incident. *Enquirer Supplement*, supra note 1, at 5, col. 1.

Recently there has been sharp criticism by environmentalists of a key safety feature in nuclear power plants, the Emergency Core Cooling System. The system is designed to flood an overheated reactor with cooling water if the primary cooling system fails. Cooling is necessary to prevent a meltdown of reactor fuel which could, though the chance is remote, lead to a nuclear explosion. The AEC has acknowledged that problems in the cooling system might be more severe than originally believed. Senator Mike Gravel, Democrat of Alaska, has introduced a bill in the Senate to halt further reactor construction until the problems are resolved. *N.Y. Times*, Mar. 12, 1972, § 1, at 64, col. 3. The AEC is currently holding hearings on the subject. 36 Fed. Reg. 22,774 (1971).

¹¹ Radioactive waste originates from small leakages from the fuel core which invariably occur. After some holdup, the wastes, both gaseous and liquid, are allowed to escape, although some liquid waste is trapped and sent to burial grounds off site. *Enquirer Supplement*, supra note 1, at 4, col. 1. Coal fired power plants also discharge natural background radiation present in coal. Such radiation discharge is negligible when compared to that from most nuclear fuel plants. *Environmental Hearings*, supra note 2, at 806-07.

¹² W. Berman & L. Hydemann, *Federal and State Responsibilities for Radiation Protection: The Need for Federal Legislation* 9-11 (1959). One of the major scientific disputes over the effect of radiation on general health centers on whether there is a linear relationship between dose and effect, or a curved relationship which results in a dose threshold below which no harm is done. *Enquirer Supplement*, supra note 1, at 9, col. 1.

¹³ Dr. John Gofman and Dr. Arthur Tamplin have stated that with the current population of 200,000,000, if more than 20% of the country's power needs were contributed by nuclear reactors, yielding the maximum permitted emissions, 32,000 radiation deaths a year would result. Although agreeing that emission practices are currently much lower than the maximum permitted (today's practices might result in one or two deaths a year at the most), Gofman and Tamplin are concerned with the possibility that the present practice may be discarded so long as the regulations permit higher discharges. The scientific community is divided over this charge. *Enquirer Supplement*, supra note 1, at 8, col. 1.

¹⁴ *Id.* at 8, col. 1.

¹⁵ *Environmental Hearings*, supra note 2, at 410.

Protection Agency has absorbed the AEC's function of setting generally applicable standards for the protection of the general environment.¹⁶

The crucial nonradiological environmental threat is thermal pollution,¹⁷ resulting when heated water that has been used to cool the main steam condenser is discharged into rivers, lakes or estuaries.¹⁸ Nuclear plants require 50 per cent more cooling water than fossil fuel plants, and raise water temperatures eighteen to twenty-three degrees above the intake temperature, as compared to a twelve to fifteen degree rise for fossil fuel plants.¹⁹ Such a temperature rise could have deleterious effects on the public water supply, fish and other aquatic life and public recreation.²⁰ In addition to its effect on fish digestion, growth and spawning activities, higher water temperatures can induce fish migration. In 1963, for example, the seven degree rise in water temperature caused by the operation of the Consolidated Edison Indian Point nuclear power plant lured thousands of spawning bass from their natural spawning grounds. Before Consolidated Edison finally screened off its water intake area 2,000,000 fish were killed.²¹

It is possible to curb such pollution through the use of cooling towers or cooling ponds which dissipate waste heat to the atmosphere.²² Research is currently being conducted to devise possible uses for this waste heat.²³

Other possible hazards can result from the site chosen for the reactor. In *Northern California Association v. Public Utilities Commission*,²⁴ a construction permit had been granted for a reactor to be situated near an active earthquake fault. A petition to reopen proceedings relating to the permit application was dismissed as not being timely brought. Subsequently, however, the AEC concluded that the site was unsatisfactory, and the utility withdrew its application.²⁵

Some groups, such as the Committee for Nuclear Responsibility, argue that these plants are just too hazardous, and suggest that fossil fuel plants be used until a new energy source is perfected.²⁶ While it is true that in some parts of the country such

¹⁶ Presidential Reorganization Plan No. 3 of 1970, 3 C.F.R. 199 (Supp. 1970). Essentially what this means is that the AEC still sets radiation standards for effluents within the nuclear facility, while the EPA sets standards applicable outside of site boundaries. The EPA has decided to defer to the standards now proposed by the AEC for light-water-cooled nuclear reactors. EPA, Testimony Prepared for AEC Hearings on Proposed Numerical Guides for Design Objectives and Limiting Conditions for Operation for Light-Water-Cooled Nuclear Power Reactors (1972).

¹⁷ There is no precise technical correlation between thermal pollution and radiological emissions. While the amount of heat produced by a reaction would increase as the quantity of the fuel consumed by the reaction increased, the amount of leakage of radioactive material would depend on the shielding surrounding the reactor.

¹⁸ Electricity is produced when water in a closed system is converted to steam by heat produced either by nuclear fission or the burning of fossil fuels. The steam turns the electric turbines, and is then condensed so that the cycle can begin again. Thermal pollution results when river or lake water is cycled through the condenser.

¹⁹ Wall Street Journal, Dec. 1, 1967 at 1, col. 6; Enquirer Supplement, supra note 1, at 10, col. 5.

²⁰ Note, Thermal Pollution: The "Dishonorable Discharge"- New York's Criteria Concerning Heated Liquids, 34 Albany L. Rev. 539 (1970). See also Note, Cold Facts on Hot Water: Legal Aspects of Thermal Pollution, 1969 Wis. L. Rev. 253; Hearings on Thermal Pollution Before the Subcomm. on Air and Water Pollution of the Senate Comm. on Public Works, 90th Cong., 2nd Sess., pt. 1, at 70 (1969).

²¹ Note, Thermal Pollution: The "Dishonorable Discharge" - New York's Criteria Concerning Heated Liquids, supra note 20, at 543.

²² Cooling towers appear to be the most viable alternative. Though utilities are reluctant to build them because of the high initial cost, studies have shown that the financial impact on consumers when the cost is passed on to them is negligible. Environmental Hearings, supra note 2, at 1050-55.

²³ The Tennessee Valley Authority is currently studying possible uses for this heated water, including heating and cooling greenhouses, environmental control of livestock housing, extending the crop growing season, recycling nutrients from livestock waters, and fish farming. 4 CCH Atom. En. L. Rep., Report Letter No. 856, Nov. 12, 1971.

²⁴ 61 Cal. 2d 126, 390 P.2d 200, 32 Cal. Rptr. 432 (1964).

²⁵ Green, supra note 10, at 642 n. 64.

²⁶ Marshall, The Nuclear Sword of Damocles, The Living Wilderness, Spring 1971.

plants might be a viable alternative because of the proximity to fossil fuel supplies,²⁷ there is only a limited fuel supply left.²⁸ The coal shortage has led to disastrous strip mining in some states.²⁹

One thing is certain. Although demands for electricity which are spurred by the public utilities themselves and wasteful private and industrial consumption could and should be curtailed, a heavily industrialized country still requires a large amount of power. At present there are two choices: nuclear or fossil fuel plants, and people concerned about the environment must choose one of the two.³⁰ Research is being conducted to develop alternate energy sources. Among these are nuclear fusion (as opposed to current fission power), which would end the possibility of nuclear explosion;³¹ solar energy, which would eliminate the radioactivity problem, but not thermal pollution;³² and a new method of fossil fuel utilization, magnetohydrodynamics, which would substantially decrease air and thermal pollution.³³ For the time being, however, nuclear power plants appear to be the best alternative, subject, of course, to strict regulation.

This Note will investigate the present scheme of environmental regulation for nuclear power facilities, with primary emphasis on intergovernmental relations in the regulatory process. As will be shown, there has, in the past, been a complete dichotomy in the environmental control of nuclear power plants, with the federal government having sole responsibility for regulating radiological factors, and the states regulating all nonradiological aspects. A regulatory split continues, but now, for the first time, all environmental factors must be considered in the federal nuclear power plant licensing process as a result of the National Environmental Policy Act of 1969³⁴ and the decision in *Calvert Cliffs Coordinating Committee v. Atomic Energy Commission*.³⁵ The profound effect of these recent developments will be analyzed to determine probable future trends in the environmental regulation of nuclear power facilities.

II. DEVELOPMENT OF THE FEDERAL-STATE RELATIONSHIP

A. Historical Role of the AEC

Recognizing the potential of atomic energy for peaceful as well as military purposes, Congress passed the Atomic Energy Act of 1946,³⁶ reserving most atomic energy activities, including the development of nuclear power, as a federal government

²⁷ Environmental Hearings, *supra* note 2, at 57-58.

²⁸ Although somewhat behind schedule, the United States is developing a fast breeder reactor that will eliminate any problem of shortages of nuclear fuel. This type of reactor converts plentiful uranium 238 which cannot be used as fuel, to plutonium, which can. *N.Y. Times*, Oct. 19, 1971, at 1, col. 6.

²⁹ Faltermayer, *Taming the Strip-Mine Monster*, *Life*, Oct. 1, 1971, at 21. In particular, there is a shortage of low sulphur coals. Efficient dust collectors have been developed, and water scrubbing processes to remove sulphur dioxide, but the solid residues of both must be disposed of somewhere. The cost of air cleaning operations can be cut by using low sulphur fuels, but these are more costly. Hearings on the Environmental Effects of Producing Electric Power Before the Joint Comm. on Atomic Energy, 91st Cong., 2nd Sess., pt. 2, 1564 (1969).

³⁰ A prime example of a totally disorganized situation is that currently existing in Vermont, where there is a severe power shortage, but where local groups are fighting every proposed nuclear and fossil fuel plant. Walsh, *Vermont: A Power Deficit Raises Pressure for New Plants*, 173 *Science* 1110 (1971). Obviously, power plants severely destructive to the environment are undesirable, but a disorganized approach wastes money that could be better spent on improvements to reduce pollution.

³¹ Seif, *Fusion Power: Progress and Problems*, 173 *Science* 802 (1971).

³² Hammond, *Solar Energy: A Feasible Source of Power?*, 172 *Science* 660 (1971).

³³ Environmental Hearings, *supra* note 2, at 55.

³⁴ 42 U.S.C. § 4321 et seq. (1970).

³⁵ 449 F.2d 1109 (D.C. Cir. 1971).

³⁶ Act of Aug. 1, 1946, ch. 724, 60 Stat. 755.

monopoly under the aegis of the Atomic Energy Commission. The 1954 Act³⁷ opened the field of nuclear power to private enterprise, and under the authority of this Act, the AEC promulgated detailed licensing and regulatory procedures for private facilities. The licensing procedure consists of a two-stage process: first the construction permit and then the operating license. The first step in the licensing process is a comprehensive review of safety provisions by the staff of the AEC's Division of Reactor Licensing. The Advisory Committee on Reactor Safeguards evaluates the staff's determination of safety. Finally, a public hearing is conducted by an Atomic Safety and Licensing Board, which has before it the detailed record of the regulatory staff and the letter of the advisory committee. The hearing is mandatory only at the construction permit stage, although a hearing must be granted at the operating license stage at the request of an intervenor whose interest is affected. Individuals or groups who wish to intervene in a hearing must apply to the AEC.³⁸ States may intervene in the hearing without adopting a particular position with respect to the granting of a license.³⁹

Not until the 1959 Amendment⁴⁰ to the Atomic Energy Act did Congress explicitly provide for cooperation with the states in the regulatory process. Section 2021(b) of the amended Act provides for turnover agreements with the states resulting in discontinuance of the Commission's regulatory authority over byproduct materials, source materials, and special nuclear materials in quantities insufficient to support a self-sustaining nuclear reaction.⁴¹

The AEC has always maintained that no state, including those which have entered into turnover agreements under section 2021(b), has the power to regulate nuclear power plants and the emission of radioactive effluents from such facilities.⁴² This interpretation has been upheld by the United States Supreme Court in *Northern States Power Co. v. Minnesota*,⁴³ where the Court affirmed without opinion the Eighth Circuit ruling that the federal government had preempted the regulation of radioactive waste emissions from nuclear power plants.⁴⁴

³⁷ Act of Aug. 30, 1954, ch. 1073, 68 Stat. 921, amending Act of Aug. 1, 1946, ch. 724, 60 Stat. 755 (codified at 42 U.S.C. § 2011 et seq. (1970)).

³⁸ 10 C.F.R. § 50 (1971). See Green, *supra* note 10, for a detailed discussion of the licensing process.

³⁹ 42 U.S.C. § 2021(1) (1970).

⁴⁰ Act of Sept. 23, 1959, Pub. L. No. 86-373, 73 Stat. 688, amending Act of Aug. 1, 1946, ch. 724, 60 Stat. 755 (codified at 42 U.S.C. § 2021 (1970)).

⁴¹ See 42 U.S.C. § 2014 (1970) for definitions of byproduct, source, and special nuclear materials.

⁴² 10 C.F.R. § 8.4 (1971).

⁴³ No. 71-650 (U.S. Apr. 3, 1972), *aff'g* mem. 447 F.2d 1143 (8th Cir. 1971). Since the Supreme Court affirmed without opinion, the discussion in this Note will be centered on the opinion of the Court of Appeals for the Eighth Circuit.

⁴⁴ The doctrine of federal preemption has its roots in the supremacy clause, U.S. Const. art. VI, which is counterbalanced by the tenth amendment, reserving to the states or the people those powers not delegated to the federal government or forbidden to the states. The first question to be asked in a preemption determination is whether the federal act is constitutional. There are a number of firm constitutional foundations for the Atomic Energy Act. *Estep & Adelman, State Control of Radiation Hazards: An Intergovernmental Relations Problem*, 60 Mich. L. Rev. 41 (1961).

While a variety of definitions have been used, a traditional test of federal preemption is enunciated in *Hines v. Davidowitz*, 312 U.S. 52 (1941): whether the state law "stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress." *Id.* at 67. A preemption issue arises from an actual conflict between federal and state regulations where compliance with both is physically impossible. *Florida Lime & Avocado Growers v. Paul*, 373 U.S. 132 (1963). In *Florida Lime*, the Court held that federal marketing orders setting a maturity test for avocados based on picking dates, sizes and weights did not preempt the operation of a California statute with a maturity test based on oil content. The court noted that a situation where impossibility of physical compliance with state and federal regulations would arise if federal marketing orders forbade the picking and marketing of any avocado testing more than 7% oil, while the California statute excluded from the state any avocado measuring less than 8% oil content.

B. Radiological Factors and the Preemption Issue

1. Authority in Favor of Preemption

*Northern States Power Co. v. Minnesota*⁴⁵ was the first federal court adjudication of the preemption question with respect to radioactive waste emissions. Prior state court decisions, *Boswell v. City of Long Beach*,⁴⁶ and *Lewis v. Alexander*,⁴⁷ held that the Atomic Energy Commission had the sole authority to regulate the disposal of radioactive wastes. However, in a carefully worded opinion, *Northern California Association v. Public Utilities Commission*,⁴⁸ the California Supreme Court avoided stating that the federal government was the sole authority in the regulation of radiation, while concluding that the states had the power to protect the public from other hazards associated with nuclear reactors.

Many commentators had anticipated a federal-state clash, since several states⁴⁹ had asserted the right to regulate radioactive effluents since the enactment of the 1959 Amendment to the Atomic Energy Act. Most agreed that the courts would find federal

Conflict may also be implied where it is clearly inferable from the scope and purpose of the federal regulation. *Cloverleaf Butter Co. v. Patterson*, 315 U.S. 148 (1942). A question of conflict may arise where Congress has chosen to occupy a limited field and the state regulation is outside that field, and yet a suggestion of preemption is attempted. Such a situation arose in *Huron Portland Cement Co. v. Detroit*, 362 U.S. 440 (1960). The Huron Portland Cement Company unsuccessfully argued that a federal law providing for inspection and regulation of ships' boilers prevented the operation of a city air pollution code on smoke emanating therefrom. The opinion stated that there was no overlap in the scope of the law, since the sole aim of the city ordinance was the elimination of air pollution, a matter of state and local concern.

If there is no conflict the court will then investigate a possible intent by Congress to preempt the field. *Florida Lime*, supra at 146. Such intent may be implied by a scheme of regulation so pervasive as to leave no room for the states. *Pennsylvania v. Nelson*, 350 U.S. 497 (1956). The nature of the subject matter may be such that the federal interest, being so dominant, will result in preemption. *Florida Lime*, supra at 143-44. Such dominant federal interests have been found in *Hines v. Davidowitz*, supra (Federal Alien and Registration Act of 1940, and immigration and naturalization law held to preempt state law because registration of aliens is intertwined with foreign relations), and *Pennsylvania v. Nelson*, supra (Smith Act preempts state law since sedition is a crime against the nation).

Where a centralized agency has been given a broad grant of power, preemption has been found even when the agency has not exercised its authority to the full extent conferred. *San Diego Bldg. Trades Council v. Garmon*, 359 U.S. 236 (1959) (National Labor Relations Board); *Napier v. Atl. Coast Line R.R.*, 272 U.S. 605 (1926) (Interstate Commerce Commission). Although a local regulation was upheld in *Huron Portland Cement Co. v. Detroit*, supra, on the grounds that its objective differed from that of the federal regulation, the Supreme Court has more recently stated in *Florida Lime* that the test is "whether both regulations can be enforced without impairing the Federal superintendence of the field, not whether they are aimed at similar or different objectives." *Id.* at 142.

There are some situations where Congress has expressly indicated that the authority conferred by it shall be exclusive, and a court may find preemption without finding conflict, pervasive regulation or need for uniformity based on the nature of the subject matter. *Rice v. Santa Fe Elevator Corp.*, 331 U.S. 218, 230-33 (1947). Such express intent may be found in the statutory language, *Campbell v. Hussey*, 368 U.S. 297 (1961), or the legislative history, *Rice v. Santa Fe Elevator Corp.*, supra. *Rice* indicated that the Supreme Court would be less likely to find preemption where Congress is legislating in a field that the states have traditionally occupied. The Court in *Rice* reached the conclusion that the United States Warehouse Act preempted state law by examining congressional hearings in order to interpret the federal statute. For a critique of Supreme Court decisions which frame the preemption question in terms of specific congressional intent, see Note, *Preemption as a Preferential Ground: A New Canon of Construction*, 12 *Stan. L. Rev.* 208 (1959).

⁴⁵ No. 71-650 (U.S. Apr. 3, 1972), aff'g mem. 447 F.2d 1143 (8th Cir. 1971).

⁴⁶ 1 CCH Atom. En. L. Rep. ¶ 4045 (Calif. Super. Ct. 1960).

⁴⁷ 4 CCH Atom. En. L. Rep. ¶ 16,579 (N.Y. Sup. Ct. 1967).

⁴⁸ 61 Cal. 2d 126, 390 P. 2d 200, 32 Cal. Rptr. 432 (1964).

⁴⁹ Esgain, *State Authority and Responsibility in the Atomic Energy Field*, 1962 *Duke L. Rev.* 163, 190.

preemption in the control of radioactive wastes from nuclear power plants,⁵⁰ and some of those who argued that a basis for state regulation existed, still concluded that a finding of preemption was probable.⁵¹

The statutory language and legislative history strongly suggest an express congressional intent to preempt, although there is no specific language in the statute stating that section 2021 was intended to preempt state regulation. Section 2021(c) states:

No agreement entered into pursuant to subsection (b) of this section shall provide for discontinuance of any authority and the Commission shall retain authority and responsibility with respect to regulation of-

(1) the construction and operation of any production or utilization facility;

...
Counsel for the AEC has argued in hearings before the Joint Committee on Atomic Energy that the problems of effluent discharge cannot be separated from the construction and operation of the reactor portion of the power plant and, therefore, that the Commission has the sole authority to regulate radioactive effluents.⁵² Furthermore, section 2021(k) provides that "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," intimating that turnover agreements under section 2021 provide the only opportunity for state regulation of radiation hazards. The Report of the Joint Committee on Atomic Energy which accompanied the 1959 Amendment states:

(b) ... Licensing and regulation of more dangerous activities such as nuclear reactors will remain the exclusive responsibility of the Commission ...

...
3. It is not intended to leave any room for the exercise of dual or concurrent jurisdiction by States to control radiation hazards by regulating byproduct, source, or special nuclear materials ...

...
5. The Joint Committee believes it important to emphasize that the radiation standards adopted by States under the agreements of this bill should either be identical or compatible with those of the Federal Government. ... The committee recognizes the importance of the testimony before it by numerous witnesses of the dangers of conflicting, overlapping, and inconsistent standards in different jurisdictions, to the hindrance of industry and jeopardy of public safety.

...
Subsection K ... is intended to make it clear that the bill does not impair the state authority to regulate activities of AEC licenses for the manifold health, safety, and economic purposes other than radiation protection. As indicated elsewhere, the Commission has exclusive authority to regulate for protection against radiation hazards until such time as the State enters into an agreement with the Commission to assume such responsibility.⁵³

An implied congressional intent to preempt could be inferred from the nature of the subject matter. It has been argued that the states do not have the technical

⁵⁰ Cavers, *State Responsibility in the Regulation of Atomic Reactors*, 50 Ky. L. Rev. 29 (1961); Estep & Adelman, *State Control of Radiation Hazards: An Intergovernmental Relations Problem*, 60 Mich. L. Rev. 41 (1961); Helman, *Preemption: Approaching Federal-State Conflict Over Licensing Nuclear Power Plants*, 51 Marq. L. Rev. 43 (1967).

⁵¹ Note, *Federal Preemption and State Regulation of Radioactive Air Pollution: Who is the Master of the Atomic Genie*, 68 Mich. L. Rev. 1294 (1970); cf. Note, *Environmental Control: Higher State Standards and the Question of Preemption*, 55 Cornell L. Rev. 846 (1970). One commentator concluded that preemption did not exist. Lemov, *State and Local Control Over the Location of Nuclear Reactors Under the Atomic Energy Act of 1954*, 39 N.Y.U. L. Rev. 1008 (1964).

⁵² Hearings on Federal State Relations in the Atomic Energy Field Before the Joint Comm. on Atomic Energy, 86th Cong., 1st Sess. 306 (1959) [hereinafter 1959 Hearings].

⁵³ S. Rep. No. 870, 86th Cong., 1st Sess. 8-12 (1959).

competence, consistency of approach or sufficient funds necessary to provide effective regulation of such a highly technical area.⁵⁴

2. Authority in Favor of State Regulation

Indication of a congressional intent not to preempt has been found in the fact that the 1959 Amendment does not use words such as "sole" or "exclusive" to qualify the regulatory authority of the AEC. Also, Congress expressly rejected a proposal to provide for preemption by including in section 2021(k) the statement:

It is the intention of this Act that state law and regulations concerning the control of radiation hazards from byproduct, source and special nuclear materials shall not be applicable except pursuant to an agreement entered into with the Commission pursuant to subsection (b).⁵⁵

Finally, during the hearings on the amendment conducted by the Joint Committee on Atomic Energy, counsel for the AEC, Mr. Robert Lowenstein, in discussing why the Commission had not recommended an express statement of federal preemption, stated:

We thought that this act without saying in so many words did make clear that there is preemption here, but we have tried to avoid defining the precise extent of that preemption, feeling that it is better to leave these kinds of detailed questions perhaps up to the courts later to be resolved.⁵⁶

Thus, extensive discussion of the problem prior to the *Northern States* decision indicated that, although there was a strong case for preemption, some basis existed for a court to reach the opposite conclusion.

3. The Northern States Resolution of the Preemption Question

*Northern States Power Co. v. Minnesota*⁵⁷ involved an attempt by the Minnesota Pollution Control Agency to require the Northern States Power Company to obtain a permit limiting the discharge of radioactive wastes from a nuclear plant under construction to a level much lower than that required by the AEC.⁵⁸ The plaintiff power company sought an injunction, contending that Minnesota's requirements were virtually impossible to meet, at least in the immediate future, and only at prohibitive and unnecessary expense. There were no disputed issues of fact. The adequacy of the respective state and federal regulations was not before the court. The one question of law was whether regulation of the discharge of radioactive wastes from a nuclear plant was preempted by the federal government.

In their argument to the district court,⁵⁹ the defendants relied on *Florida Lime & Avocado Growers v. Paul*,⁶⁰ where state exercise of the police power withstood a preemption challenge. They contended that the regulation of radioactive waste releases fell within the traditional use of the state police power to protect the health and

⁵⁴ Helman, *supra* note 50, at 61-67.

⁵⁵ 1959 Hearings, *supra* note 52, at 488. It has been argued that when the committee deleted this sentence from subsection k, it deleted all provision for preemption from the 1959 Amendment. Therefore, the committee comment that there can be no dual or concurrent state control more properly refers to the 1954 Atomic Energy Act. Lemov, *supra* note 51, at 1013-14.

⁵⁶ 1959 Hearings, *supra* note 52, at 308. The word "here" appears to refer to reactor licensing; no more precise definition is indicated in Mr. Lowenstein's statements.

⁵⁷ No. 71-650 (U.S. Apr. 3, 1972), *aff'g mem.* 447 F.2d 1143 (8th Cir. 1971).

⁵⁸ The construction of this plant, near Monticello, Minnesota, was authorized by a provisional construction permit issued June 19, 1967, by the AEC, pursuant to 42 U.S.C. § 2134(b) and the regulations contained in 10 C.F.R. § 50 (1971). Northern then applied to the Pollution Control Agency for a waste disposal permit. It was issued May 20, 1969, subject to specified conditions regulating the level of radioactive discharges. On June 19, 1971, the AEC issued a provisional operating license to Northern under which the Monticello plant is currently operating. Minnesota had never entered into a turnover agreement with the AEC under § 2021. 447 F.2d at 1144-45.

⁵⁹ 320 F. Supp. 172 (D. Minn. 1970). See Comment, 55 Minn. L. Rev. 1223 (1971), for a discussion of the district court opinion.

⁶⁰ 373 U.S. 132 (1963). See note 44 *supra*.

safety of citizens under the tenth amendment,⁶¹ and that a clear and manifest intent by Congress to preempt was thereby required. The district court found such an intent both expressly, through statutory language⁶² and legislative history,⁶³ and impliedly, through the pervasiveness of federal supervision in the field of atomic energy.⁶⁴ Other factors were that Congress had directed the AEC to effect a comprehensive licensing procedure, and that the regulations were not only in the same field, but overlapping. The court also found it persuasive that the Commission had interpreted section 2021 to be preemptive,⁶⁵ as had some state courts⁶⁶ and writers on the topic,⁶⁷ and that the nature of the subject matter was particularly amenable to exclusive federal legislation.

On appeal, the circuit court, in a carefully reasoned opinion, affirmed the declaratory judgment of the district court. Arguing before the circuit court, Minnesota conceded that radioactive discharges from nuclear power facilities did not fall into any of the three categories enumerated as subjects for turnover agreements in section 2021(b).⁶⁸ Minnesota contended, however, that the Atomic Energy Act did not expressly or impliedly preempt state regulation in this area. Alternatively, Minnesota argued that section 2021(c), prohibiting the AEC from discontinuing its authority over the construction and operation of any production or utilization facility, only referred to total relinquishment, and would therefore allow concurrent jurisdiction over radioactive wastes without any turnover agreement. The court noted that there was no physical impossibility of compliance with both state and federal radioactive emission regulations,⁶⁹ and in the absence of such a conflict, ruled that any ground for preemption would have to be based on congressional intent.

Minnesota argued, as it had in the district court, that the subject matter of the regulation was related to public health and safety and therefore within the state police power, citing *Huron Portland Cement Co. v. Detroit*.⁷⁰ Judge Van Oosterhout, in his dissenting opinion, began with the premise that preemption is less readily inferred where the state exercises its police power in the field of health and safety, than in cases not involving these considerations.⁷¹ The majority, however, reasoned that radioactive effluent control is not an appropriate area for the exercise of the state

⁶¹ The defendants relied on *Huron Portland Cement Co. v. Detroit*, 362 U.S. 440 (1960) to support this contention. See note 44 supra for a discussion of the *Huron* case.

⁶² 320 F. Supp. at 175. The court cited 42 U.S.C. § 2021(a)-(c) (1970).

⁶³ 320 F. Supp. at 175-76. The legislative history cited was S. Rep. No. 870., 86th Cong., 1st Sess. (1959). See text accompanying note 53 supra.

⁶⁴ 320 F. Supp. at 178. Several writers prior to this decision had argued that although concurrent regulation appeared to be ruled out by the committee report, S. Rep. No. 870, supplementary or complementary regulations might be upheld, on the ground that the federal regulations were not so pervasive as to exclude state regulations. E.g., Lemov, supra note 51, at 1022-23; Note, Federal Preemption and State Regulation of Radioactive Air Pollution: Who is the Master of the Atomic Genie, supra note 51, at 1311-12.

⁶⁵ 10 C.F.R. § 8.4 (1971).

⁶⁶ *Lewis v. Alexander*, 4 CCH Atom. En. L. Rep. ¶ 16,579 (N.Y. Sup. Ct. 1967); *Boswell v. City of Long Beach*, 1 CCH Atom. En. L. Rep. ¶ 4045 (Calif. Super. Ct. 1960).

⁶⁷ The court cited *Estep & Adelman*, supra note 50; *Cavers*, supra note 50.

⁶⁸ 447 F.2d 1143, 1148 (8th Cir. 1971). In the district court, Minnesota had argued that the Act was not intended to reach the regulation of wastes, and therefore, that Minnesota could regulate these radioactive discharges. The author of a case comment on that decision criticized this contention and argued that from the definitional section of the act, waste fell under the definition of byproduct material, and thus subject to § 2021. Comment, 55 Minn. L. Rev. 1223, 1229 (1971). The circuit court appears to suggest that if radioactive discharges could not be regulated under turnover agreements, they cannot be regulated at all by the states, since, in this view, § 2021 carves out the only allowable exceptions to the AEC's authority.

⁶⁹ 447 F.2d at 1147. Unlike the example described in *Florida Lime & Avocado Growers v. Paul*, 373 U.S. 132 (1963), supra note 44, the Minnesota regulations covered the same area but were more stringent. It should be noted that the necessity of extensive structural alterations to comply with state law did not persuade the Supreme Court to find preemption in *Huron Portland Cement Co. v. City of Detroit*, 362 U.S. 440 (1960).

⁷⁰ 362 U.S. 440 (1960).

⁷¹ 447 F.2d at 1155.

police power. The court relied on an interstate commerce argument, noting the need for uniform standards developed by a national agency.⁷²

As the court investigated the language of the Atomic Energy Act, including the 1959 Amendment, it noted that there was no express language in the 1959 Amendment granting the AEC sole authority to regulate radioactive effluents. It was the court's opinion, however, that the whole tone of the 1959 Amendment demonstrated this congressional intent. The court reasoned that if the states at the time of the 1959 Amendment had possessed concurrent jurisdiction, it would have been unnecessary for Congress to recognize affirmatively their authority in limited circumstances through the use of federal-state compacts.⁷³ The exclusivity of federal authority with respect to the regulation of radiation hazards reflected in the 1959 Amendment, was seen by the court as being consistent with the Atomic Energy Acts of 1946 and 1954.⁷⁴ The very enactment of elaborate and detailed legislation authorizing turnover agreements was held by the majority to evince an inescapable implication of continued federal preemption.⁷⁵

The court felt that any remaining doubt was resolved through reference to the hearings on section 2021 before the Joint Committee on Atomic Energy,⁷⁶ and Senate Report No. 870,⁷⁷ adopted as the unanimous committee report accompanying the bill, both favoring a conclusion of preemption. The court carefully noted the value of a Joint Committee report as an explicit manifestation of the intent of Congress and the report's precedence over conflicting expressions of opinion in hearings or debates,⁷⁸ particularly when this expression of preemption was consistent with the intention of the AEC, the sponsor of the legislation.⁷⁹ The dissenting opinion disagreed on this point, stating that there was no clear intent in the language of section 2021 to preempt the field, and that the language of a statute controls over legislative history, since the latter is often ambiguous.⁸⁰ The majority also deemed it appropriate to accord respectful consideration to the Commission's interpretation of the statute.⁸¹ Implied intent to preempt was again found, as in the district court, in the pervasiveness of the federal regulatory scheme, the nature of the subject matter, and the need for uniform controls.⁸² Accordingly, the court concluded that the federal government has exclusive authority to regulate the construction and operation of nuclear power plants, which in the court's view necessarily includes exclusive regulation of the discharge of radioactive wastes.

⁷² Id. at 1154. This is another example of the strong link between preemption and the commerce clause. Here the court noted that the power company was part of an interstate power transmission system and that 42 U.S.C. § 2021(f) (1970) places nuclear power plants in interstate commerce for the purposes of the Atomic Energy Act. Such a broad application of the commerce power could make serious inroads in the states' ability to regulate any aspect of nuclear power plants.

⁷³ Id. at 1149. The court referred to subsections b and k of § 2021.

⁷⁴ Id. at 1150. Atomic Energy Act of 1954, 42 U.S.C. § 2011 et seq. (1970); Atomic Energy Act of 1946, ch. 724, 60 Stat. 755.

⁷⁵ Id. at 1150, citing *Guss v. Utah Labor Relations Bd.*, 353 U.S. 1 (1957).

⁷⁶ The hearing record includes the statement of Robert Lowenstein, Office of the General Counsel of the Atomic Energy Commission, 1959 Hearings, *supra* note 56, at 308, which implies that there are some areas where a court could find room for state regulation. Judge van Oosterhout also mentioned this statement in his dissenting opinion, noting that Congress knew how to write a clear statement of federal preemption if it wished to do so. 447 F.2d at 1156.

⁷⁷ S. Rep. No. 870., 86th Cong., 1st Sess. (1959). See text accompanying note 53 *supra*.

⁷⁸ 447 F.2d at 1152. The court cited *Zuber v. Allen*, 396 U.S. 168 (1969), *United States v. O'Brien*, 391 U.S. 367 (1968), and *Hudson Distributors Inc. v. Eli Lilly & Co.*, 377 U.S. 386 (1964).

⁷⁹ 447 F.2d at 1152, citing *Nat'l Woodwork Mfr's Ass'n v. NLRB*, 386 U.S. 612 (1967), and *NLRB v. Fruit & Vegetable Packers, Local 760*, 377 U.S. 58 (1964).

⁸⁰ Id. at 1157.

⁸¹ Id. at 1153. The court cited *Zuber v. Allen*, 396 U.S. 168 (1969), and *Power Reactor Dev. Co. v. Int'l Union of Elec. Workers*, 367 U.S. 396 (1961). The Court in *Zuber* had noted that such a departmental interpretation is just one of a number of factors to be considered in interpreting a statute. 396 U.S. at 192.

⁸² 447 F.2d at 1153-54.

The dissenting opinion argued that although there was a possibility that overprotective state regulations would inhibit industrial development, the court of appeals should remand the question of preemption to a trial court rather than uphold the district court's decision of absolute preemption as a matter of law. Judge Van Oosterhout noted that the Lowenstein statement in the Joint Committee Hearings⁸³ suggests room for court interpretation. Accordingly, the dissenting opinion argued, there should be admission of testimony either on the reasonableness of the state regulations or on striking a balance between environmental protection and atomic energy development.⁸⁴

It is questionable whether a court is the appropriate forum for the determinations suggested by the dissent. Going to trial on either of the above bases would inevitably bring into question the adequacy of federal radiation standards, which was stipulated as not at issue in the *Northern States* proceeding. Although it is not always wise to give a great deal of deference to agency determinations of environmental standards, in the case of radiological emissions safety determinations are probably more properly made by the AEC, since courts are not as well equipped as administrative agencies to conduct the necessary extensive proceedings. Until recently, any public voice in the determination of radiological standards was considered unthinkable by the AEC. However, the AEC has now provided for public rule-making hearings⁸⁵ to discuss proposed federal regulations for keeping radioactive releases from light-water-cooled⁸⁶ nuclear power plants "as low as practicable."⁸⁷ Strong participation is expected from both the nuclear power industry and environmentalists.⁸⁸ However, if the Commission were to refuse to consider valid criticism of radiation standards, court action might be the only alternative.

The arguments presented in the *Northern States* circuit court opinion are highly persuasive grounds for the conclusion that there is federal preemption of the regulation of radioactive effluents. The decision is a culmination of previous state cases and numerous articles written since the enactment of the 1959 Amendment, nearly all favoring a finding of preemption.⁸⁹ The recent Supreme Court affirmation of this decision is the final authoritative adjudication of the preemption issue. Although it cannot be denied that the states have an interest in regulating radioactive effluents, the question of preemption is settled. The federal government has the exclusive authority to regulate radioactive emissions from nuclear power facilities.

C. Nonradiological Factors

With respect to nonradiological factors, the other segment of the nuclear power plant pollution problem, both Congress and the AEC have been willing to give the states full control. Section 2021(k) of the 1959 Amendment to the Atomic Energy Act provides that state power to regulate in the nonradiological area is not affected by the other provisions of section 2021. Though the California Supreme Court in *Northern California Association v. Public Utilities Commission*⁹⁰ concluded that the federal government had not preempted the field of nonradiological environmental hazards, the federal courts have never directly dealt with the question.

⁸³ See text accompanying note 56 supra.

⁸⁴ 447 F.2d at 1158.

⁸⁵ 36 Fed. Reg. 22,775 (1971).

⁸⁶ All nuclear power plants currently in operation or under construction in the United States are fueled by light-water-cooled reactors. Enquirer Supplement, supra note 1, at 12, col. 1.

⁸⁷ 36 Fed. Reg. 11,113 (1971).

⁸⁸ See Nuclear Power Plant Safety at Issue, Chemical & Engineering News, Jan. 24, 1972, at 16.

⁸⁹ See text accompanying notes 46-51 supra.

⁹⁰ 61 Cal.2d 126, 390 P.2d 200, 32 Cal. Rptr. 432 (1964).

The states have a variety of powers in this area. Under the Federal Water Pollution Control Act,⁹¹ the states are responsible for setting water quality standards for interstate waters, including standards for thermal pollution, a problem of crucial importance in the environmental regulation of nuclear power plants.⁹² Aspects of plant construction such as plumbing and electricity may be regulated by local building codes.⁹³ State power over land use control allows the states to enact statutes providing for site selection for power facilities.⁹⁴ Site selection procedures may provide for a comprehensive environmental review of plant construction at a particular location.⁹⁵ It has been suggested that municipalities could use their zoning power to exclude nuclear power facilities,⁹⁶ although the power siting provisions of at least one state allow the state to override local zoning laws in some instances.⁹⁷ Although the states may not regulate radioactive effluents, they do have a role in the federal licensing process. Section 2021 of the Atomic Energy Act⁹⁸ provides that a state must be notified of a license application for a nuclear power facility within its borders, and be given the opportunity to produce evidence, interrogate witnesses, and advise the Commission as to the application. Finally, to a certain extent, state and local governments may regulate power consumption.⁹⁹

At first glance, it would appear that the states have extensive power to regulate nonradiological environmental hazards. This, until recently, has not been the case with regard to thermal pollution. While the states have the authority to set water quality standards, state regulation of thermal pollution may be weakened if these regulations are not considered at an early stage in the federal licensing process. It is much easier to plan for cooling towers and other devices at the beginning, than to add them as an afterthought.

A textbook illustration of this problem arose in *New Hampshire v. Atomic Energy Commission*,¹⁰⁰ where New Hampshire, Vermont, and Massachusetts could not agree with the Vermont Yankee Nuclear Power Corporation on the necessary steps to curb thermal pollution from a planned nuclear power plant at Vernon, Vermont. While the AEC agreed that the licensee was not relieved from complying with state authorities, the Commission maintained that it could only forward recommendations to applicants and urge them to cooperate. Nonradiological environmental factors had never been considered by the AEC in granting a construction permit, and the Commission again refused to do so. A provisional construction permit was granted and

⁹¹ 33 U.S.C. § 1160(c) (1970). The state water quality standards are to be approved by the Administrator of the Environmental Protection Agency. The Administrator promulgates standards if the state fails to do so. Since this section of the Federal Water Pollution Control Act applies only to solely interstate waters, the states may set any standards they wish for intrastate waters; these standards are not subject to federal approval.

⁹² The effects of thermal pollution are well known, since such pollution has been recognized for years as a byproduct of a variety of industrial operations. See *Wall Street Journal*, Dec. 1, 1967, at 1, col. 6.

⁹³ Comment, 55 Minn. L. Rev. 1223, 1232 (1971).

⁹⁴ See Stone, *Power Siting: A Challenge to the Legal Process*, 36 Albany L. Rev. 1 (1971), for a discussion of power siting problems.

⁹⁵ See e.g., Md. Ann. Code art. 78, § 54A (Supp. 1971).

⁹⁶ Cavers, *supra* note 50. See also Estep & Adelman, *supra* note 50. The authors point out that federal preemption would prohibit the use of zoning power solely for radiation health and safety purposes. However, exclusion due to zoning prohibiting commercial and industrial establishments would be permissible. *Id.* at 61.

⁹⁷ Md. Ann. Code art. 66c, § 769(b) (Supp. 1971).

⁹⁸ 42 U.S.C. § 2021(1) (1970).

⁹⁹ Proposals for regulation have included a luxury tax on fancy electric gadgets, building codes that require windows that can open in all new buildings and barring the use of air conditioners in buildings with windows that open unless the temperature rises above seventy-five degrees. Recommendations of the New York State Society of Professional Engineers, as reported in *N.Y. Times*, Oct. 3, 1971, §1, at 48, col. 1. To be effective, any proposal should also include methods of decreasing industrial consumption of electricity.

¹⁰⁰ 406 F.2d 170 (1st Cir.), cert. denied, 395 U.S. 962 (1969); cf. *Thermal Ecology Must Be Preserved v. AEC*, 433 F.2d 524 (1970).

work was begun. The First Circuit upheld the Commission's position, stating that a federal statute would be necessary to expand the agency's jurisdiction.¹⁰¹ The end result was that the state would not be able to act until the facility was in operation and dangerous effects had occurred or were imminent. By that time, the heavy financial investment of the power company would create pressures militating against a satisfactory environmental solution.¹⁰²

The refusal of the AEC to consider nonradiological environmental factors in the federal licensing process was a great detriment to the efficacy of state regulation of thermal pollution. When coupled with federal preemption of radioactive effluents, it made a unified approach to environmental planning for nuclear power facilities impossible.

III. THE NATIONAL ENVIRONMENTAL POLICY ACT AND THE CALVERT CLIFFS DECISION

A. Requirements of NEPA

The obstacle to effective environmental planning presented by the total federal-state bifurcation of regulatory authority should have been alleviated with the passage of the National Environmental Policy Act of 1969.¹⁰³ The primary purpose of NEPA was to ensure that environmental factors were included in the federal agency decision-making process. While NEPA stops short of creating a personal right to a clean environment, section 101(c) states that "[t]he Congress recognizes that each person should enjoy a healthful environment and that each person has a responsibility to contribute to the preservation and enhancement of the environment."¹⁰⁴ Accordingly, Congress declared in the NEPA that it was to be the continuing policy of the federal government, in cooperation with state and local governments and concerned public and private organizations, to use all practical means and measures to create and maintain conditions under which man and the environment can exist in harmony.¹⁰⁵ NEPA provides that all agencies of the federal government must, to the fullest extent possible,¹⁰⁶ utilize a systematic interdisciplinary approach integrating the natural and social sciences and the environmental arts in any planning or decision-making which

¹⁰¹ 406 F.2d at 176.

¹⁰² Justice Douglas, dissenting in *Power Reactor Dev. Co. v. Int'l Union of Elec. Workers*, 367 U.S. 396, 417 (1961) (where the majority upheld the grant of a provisional construction permit where all the safety precautions necessary for an operating license had not yet been worked out), noted that after construction was finished and millions of dollars had been invested, "the momentum is on the side of the applicant, not on the side of the public."

¹⁰³ 42 U.S.C. § 4321 et seq. (1970) [hereinafter NEPA].

¹⁰⁴ Id. § 4331(c). The Senate version of the bill had provided for such an inalienable right, but this assertion was eliminated in conference. H.R. Rep. No. 91-765, 91st Cong., 1st Sess. 8 (1969). For general discussions of the scope and expected impact of NEPA, see e.g., Hanks & Hanks, *An Environmental Bill of Rights: The Citizen Suit and the National Environmental Policy Act of 1969*, 24 Rutgers L. Rev. 231 (1970); Sive, *Some Thoughts of an Environmental Lawyer in the Wilderness of Administrative Law*, 70 Colum. L. Rev. 612 (1970); Note, *The National Environmental Policy Act: A Sheep in Wolf's Clothing?*, 37 Brooklyn L. Rev. 139 (1970). See Note, *The Regulation of Nuclear Power After the National Environmental Policy Act of 1969*, 24 Rutgers L. Rev. 753 (1970), for a discussion of NEPA's expected impact on nuclear power plants.

¹⁰⁵ 42 U.S.C. § 4331(a) (1970).

¹⁰⁶ The House conferees deleted the House provision that "nothing in this act shall increase, decrease or change any responsibility or authority of any federal official or agency created by other provision of law." By receding to the language "to the fullest extent possible," it was intended that all federal agencies comply to the fullest unless the existing law applicable to such agency expressly prohibits or makes full compliance impossible. The conferees intended that "to the fullest extent possible" should not be used as a means of avoiding compliance. H.R. Rep. No. 91-765, 91st Cong., 1st Sess. 9-10 (1969). 42 U.S.C. § 4333 (1970) requires each federal agency to review its statutory authority to determine if any deficiencies exist which prohibit full compliance with NEPA.

will have an environmental impact.¹⁰⁷ Procedures must be developed which will include presently unquantified environmental considerations in the decision-making process so that environmental costs may be balanced against economic and technical benefits.¹⁰⁸ In every recommendation or report on legislation or other major federal activity which may significantly affect the environment, section 102(c) requires that a detailed statement be made on

- (i) the environmental impact of the proposed action.
- (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,
- (iii) alternatives to the proposed action,
- (iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and
- (v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.¹⁰⁹

The environmental statement and the comments of other federal, state and local agencies are to be made available to the President, the Council on Environmental Quality¹¹⁰ and the public.¹¹¹

NEPA contains numerous references to the role of the states in environmental control. The federal government, in cooperation with state and local governments, is to use all practical means to create and maintain harmony between man and the environment.¹¹² Prior to making a detailed environmental statement, federal agencies are directed to obtain the views and comments of appropriate federal, state and local agencies, which must accompany the statement.¹¹³ Federal agencies are to make information which is useful for environmental control available to state and local governments.¹¹⁴ Section 104 provides for the continued existence of prior specific statutory obligations governing federal agency relations with the states.¹¹⁵ Programs and activities of state and local governments are to be included in the President's Environmental Quality Report.¹¹⁶ The Council on Environmental Quality is to consult with representatives of state and local governments.¹¹⁷

After the enactment of NEPA, and the decision in *New Hampshire v. Atomic Energy Commission*,¹¹⁸ Congress passed another statute significant to the environmental control of nuclear power plants, the Water Quality Improvement Act of 1970.¹¹⁹ WQIA provides, in part, that before a federal agency can grant a license or permit to a facility which will discharge emissions into navigable waters, a certificate is

¹⁰⁷ 42 U.S.C. § 4332(a) (1970).

¹⁰⁸ Id. § 4332(b).

¹⁰⁹ Id. § 4332(c).

¹¹⁰ Created by 42 U.S.C. § 4342 (1970) as an advisory body to the President. The council has no line responsibility in any area of environmental development or regulation and has no authority to supervise or inject itself into the regulatory activities of any agency or to coordinate other agencies. Grad, *Intergovernmental Aspects of Environmental Controls*, in F. Grad, G. Rathjens & A. Rosenthal, *Environmental Control: Priorities, Policies and the Law* 161-72 (1971).

¹¹¹ 42 U.S.C. § 4332(c) (1970).

¹¹² Id. § 4331(a).

¹¹³ Id. § 4332(c).

¹¹⁴ Id. § 4334(f).

¹¹⁵ Id. § 4334. Section 104 states that nothing in sections 102 and 103 shall affect in any way the

specific statutory obligations of any Federal agency (1) to comply with criteria or standards of environmental quality, (2) to coordinate or consult with any other Federal or State agency, or (3) to act, or refrain from acting contingent upon the recommendations or certification of any other Federal or State agency.

¹¹⁶ Id. § 4341.

¹¹⁷ Id. § 4345(1).

¹¹⁸ 406 F.2d 170 (1st Cir.), cert. denied, 395 U.S. 962 (1969).

¹¹⁹ 33 U.S.C. § 1171 (1970) [hereinafter WQIA].

required from the appropriate agency showing compliance with applicable water quality standards.¹²⁰

B. The Initial AEC Response to NEPA and the Calvert Cliffs Decision

In response to NEPA, after an eleven month rule-making proceeding, the AEC promulgated new procedural regulations,¹²¹ which the Commission viewed as a commitment to consider environmental impact in its licensing process. These rules were challenged as being violative of NEPA by the Calvert Cliffs Coordinating Committee, a citizens group concerned about the environmental effects of the Calvert Cliffs nuclear power station under construction on the Maryland shore of Chesapeake Bay.

The Commission's rules issued to comply with NEPA were described by the court as a "crabbed interpretation" which makes a "mockery of the Act" in *Calvert Cliffs Coordinating Committee v. Atomic Energy Commission*.¹²² The court stated that NEPA makes environmental protection part of the mandate of every federal agency.¹²³ The court noted that the general substantive policy of NEPA, to "use all practicable means"¹²⁴ to protect against environmental degradation and promote the widest range of beneficial uses of the environment is flexible, but also recognized that certain procedural sections of NEPA are inflexible.¹²⁵ The procedural portion of NEPA requires the extensive gathering of information which is to be included in a detailed statement covering the environmental impact of agency actions, environmental costs which cannot be avoided and alternative measures which might change the balance between environmental costs and economic and technical benefits.¹²⁶ This procedural duty must be fulfilled to the fullest extent possible.¹²⁷ The information provided in the statement, in the Court's view, is necessary if the substantive balancing process is to be properly carried out.¹²⁸ The result of the substantive process, which involves balancing environmental costs against economic and technical benefits, is, in the case of the AEC, the grant or denial of a construction permit or operating license. Judge Skelly Wright, speaking for the majority, emphasized that the court was not reviewing such a substantive decision by the AEC, but was, rather, addressing itself to the validity of the procedural rules promulgated by the Commission which govern consideration of environmental values in individual decisions.¹²⁹ The court held the AEC regulations to be violative of NEPA.

Under the AEC regulations, nonradiological environmental factors had to be considered by the regulatory staff of the Commission. Such factors need not, however, have been reviewed by the Commission's Atomic Safety and Licensing Board when conducting an independent review of AEC staff recommendations unless issues concerning environmental factors were affirmatively raised by staff members or outside parties.¹³⁰ The court stated that the NEPA requirement that a detailed environmental statement accompany proposals for agency action¹³¹ requires more than passing

¹²⁰ These standards are set by the states under the Federal Water Pollution Control Act, 33 U.S.C. § 1160(c) (1970), for interstate waters. The states set standards for intrastate waters without any federal supervision.

¹²¹ 10 C.F.R. § 50 app. D (1971).

¹²² 449 F.2d 1109, 1117 (D.C. Cir. 1971).

¹²³ Prior to this adjudication, there had been some discussion as to whether NEPA was a statement of policy or a mandate. Note, *The Regulation of Nuclear Power After the National Environmental Policy Act of 1969*, supra note 104.

¹²⁴ 42 U.S.C. § 4331(a) (1970).

¹²⁵ 449 F.2d at 1115.

¹²⁶ The 102(c) statement. 42 U.S.C. § 4332(c) (1970).

¹²⁷ 449 F.2d at 1115, referring to the language in 42 U.S.C. § 4332 (1970).

¹²⁸ Id. at 1114.

¹²⁹ Id. at 1115-16.

¹³⁰ 10 C.F.R. § 50 app. D(13) (1971).

¹³¹ 42 U.S.C. § 4332(c) (1970). See text accompanying note 109 supra.

unopened folders to reviewing officials along with other folders and papers,¹³² which was the result under the AEC rules. The court considered the review process to be an appropriate stage at which to balance conflicting factors,¹³³ and therefore held that the AEC must take the initiative and not wait for an intervening party to raise issues concerning nonradiological factors.¹³⁴

Another section of the Commission's rules prohibited any party from raising nonradiological environmental issues at any hearing if notice for the hearing appeared in the Federal Register prior to March 4, 1971.¹³⁵ The court declared that the time lag for introducing nonradiological factors into the licensing process, fourteen months after the effective date of NEPA, was shocking.¹³⁶ The Commission was held not to be relieved of all responsibility under NEPA to hold public hearings on the environmental impact of its actions between the effective date of NEPA, January 1, 1970, and the effective AEC rule date, much less until March 4, 1971.¹³⁷ In addition, the eleven months it took to formulate the challenged AEC rules was regarded by the court as violative of the NEPA requirement that agencies respond to the fullest extent possible, a direction which requires promptness.¹³⁸

The challenged regulations also included provisions under which the hearing board was prohibited from conducting an independent review and balancing certain environmental effects, if other responsible state, regional or federal agencies had certified that their own environmental standards had been satisfied by the proposed action.¹³⁹ In particular, with respect to thermal pollution, the AEC indicated that it would defer totally to water quality standards formulated and administered by state agencies and approved by the federal government under the Federal Water Pollution Control Act.¹⁴⁰ The court reasoned that certification by these agencies, a requirement of the Water Quality Improvement Act of 1970,¹⁴¹ does not indicate the absence of environmental damage, but only that there is not enough to violate applicable state standards;¹⁴² the balancing process remains to be done, since certifying agencies do not do a cost-benefit analysis.¹⁴³ The court also rejected the AEC contention that the NEPA provision exempting federal agencies from NEPA compliance if already bound by existing statutory obligations,¹⁴⁴ in conjunction with WQIA, removed the necessity for the Commission to carry out the cost-benefit balance.¹⁴⁵ The court decided that while water quality standards essentially establish a minimum condition for the granting of a license, after the cost-benefit analysis the Commission may demand water pollution controls which are more strict than state requirements.¹⁴⁶

Finally, the plaintiffs challenged the AEC regulations which prohibited alteration of plans, back-fitting, or construction halts for nuclear plants which had been granted construction permits prior to the effective date of NEPA, but which had not yet been

¹³² 449 F.2d at 1117.

¹³³ *Id.* at 1118.

¹³⁴ *Id.* at 1119.

¹³⁵ 10 C.F.R. § 50 app. D(11)(a) (1971).

¹³⁶ 449 F.2d at 1119.

¹³⁷ *Id.* at 1120.

¹³⁸ *Id.* at 1120-21.

¹³⁹ 10 C.F.R. § 50 app. D(9) (1971).

¹⁴⁰ 33 U.S.C. § 1160(c) (1970). See note 91 *supra*.

¹⁴¹ 33 U.S.C. § 1171 (1970). See text accompanying note 120 *supra*.

¹⁴² 449 F.2d at 1123.

¹⁴³ *Id.*

¹⁴⁴ 42 U.S.C. § 4334 (1970). See note 115 *supra*.

¹⁴⁵ 449 F.2d at 1124-26. The court noted that the AEC had relied on statements made by Senators Jackson and Muskie, the sponsors of NEPA and WQIA, respectively, indicating that perhaps the Senators were willing to permit agencies such as the AEC to forego at least some NEPA procedures in consideration of water quality. The court added that such relatively meager and vague legislative history could not radically affect the statutory interpretation if the language of the statute was clear. *Id.* at 1125-26.

¹⁴⁶ *Id.* at 1125.

granted operating licenses.¹⁴⁷ The court stated that if environmental considerations were left to the licensing stage, the large financial investment would probably result in toleration of environmental harm.¹⁴⁸ By refusing to consider the necessity of alterations until construction is completed, the Commission could effectively foreclose the environmental protection mandated by the NEPA.¹⁴⁹

Calvert Cliffs has already had a profound effect on the regulation of nuclear power plants, and will continue to do so in the future. In response to the scathing opinion of the District of Columbia Circuit, the AEC decided not to appeal the decision and promptly issued new interim regulations designed to help the Commission assess the total environmental impact of nuclear plants.¹⁵⁰ This action constitutes a complete about face from the AEC's previously recalcitrant attitude towards vigorous environmental protection.

The immediate result, of course, has been consternation within the nuclear industry. The regulations are expected to delay the opening of 112 nuclear facilities.¹⁵¹ From the perspective of this Note, however, the question is: what effect will *Calvert Cliffs* have on federal-state relations in the environmental regulation of nuclear power plants.

C. Regulation After *Calvert Cliffs*

1. Nonradiological Factors

The *Calvert Cliffs* decision, requiring the AEC to make an independent review of nonradiological factors, particularly water quality standards, in the licensing process, will not result in federal preemption of this area of regulation.¹⁵² The typical preemption issue involves a comparison of the standards required by the federal and state statutes or regulations under investigation. The situation with regard to nonradiological pollution problems of nuclear power plants is entirely different. The AEC does a case by case analysis¹⁵³ of each separate nuclear facility, which results in an individual determination of environmental impact.

There is no question of invalidating a state water quality standard, since under WQIA and *Calvert Cliffs*, state water quality laws will always be observed as the ceiling for the maximum amount of pollution allowed.¹⁵⁴ The AEC may only require that actual pollution levels be lower than maximum levels permitted by a state.¹⁵⁵ Utilities

¹⁴⁷ 10 C.F.R. § 50 app. D(3) (1971).

¹⁴⁸ 449 F.2d at 1128.

¹⁴⁹ *Id.* at 1128. The court noted that decisions where NEPA has been held not to be retroactive did not apply to the instant situation, where there are two different stages of federal approval—the construction permit and the operating license—one before and one after that date. *Id.* at 1129, n. 43. See Note, Retroactive Application of the National Environmental Policy Act of 1969, 69 Mich. L. Rev. 732 (1971).

¹⁵⁰ 36 Fed. Reg. 18,071 (1971).

¹⁵¹ N.Y. Times, Oct. 21, 1971, at 1, col. 6.

¹⁵² This conclusion was also reached by commentators writing prior to the *Calvert Cliffs* decision. Hanks & Hanks, *supra* note 104, at 260 n. 21.

¹⁵³ Prior to *Calvert Cliffs*, it had been suggested that the AEC might only be required to consider general environmental standards, and not to do a case by case analysis. Note, The Regulation of Nuclear Power After the National Environmental Policy Act of 1969, *supra* note 104.

¹⁵⁴ See text accompanying notes 140-46 *supra*.

¹⁵⁵ However, it is questionable whether a state could set thermal pollution standards so low that nuclear power plants would be excluded from the state. The installation of cooling towers would greatly decrease any thermal pollution; and the imposition of standards so stringent as to preclude compliance even with the use of cooling towers could conceivably be an unconstitutional burden on interstate commerce. For cases illustrating the conflict between state safety regulations and the commerce clause, see *Bibb v. Navajo Freight Lines, Inc.*, 359 U.S. 520 (1959) (mudguards on trucks); *S. Pac. Co. v. Arizona*, 325 U.S. 761 (1945) (length of railroad trains). The Court in *Huron Portland Cement Co. v. Detroit*, 362 U.S. 440 (1960), rejected a commerce argument and

have already complained that federal and state agencies are now engaged in an unintentional jurisdictional struggle for the power to control thermal pollution,¹⁵⁶ but the lines of responsibility appear to be clearly drawn under WQIA, and any current confusion should be alleviated within a reasonable time period. As to the other powers in the nonradiological area,¹⁵⁷ the status of federal-state relationships is less certain, particularly in the power siting situation, where the state conducts its own environmental review. If the AEC decides to license the plant, while the state insists that environmental damage can only be avoided if the plant is constructed at another location, the only recourse available to the state appears to be a court challenge to the license based on NEPA.¹⁵⁸

2. Radiological Factors

Although *Calvert Cliffs* dealt solely with the question of nonradiological environmental factors, NEPA requires consideration of *all* environmental factors prior to federal agency action. There is no case law discussing the effect of NEPA on federal preemption of radioactive effluent regulation.¹⁵⁹ However, the strong support for environmental protection evidenced in *Calvert Cliffs*, coupled with the apparent acquiescence of the Commission in the court's decision, indicates that the *Calvert Cliffs* spirit may, in the future, extend to the field of radiological hazards. Thus, it has been suggested that for the first time an intervening group may be allowed to challenge the adequacy of federal radiation standards in construction permit and operating license hearings.¹⁶⁰

However, it seems unlikely that federal preemption in the radiological area will end as a result of NEPA. The section 102(c) requirement that federal agencies consult with the states prior to the preparation of the environmental impact statement¹⁶¹ does not affect the final decision-making authority of the AEC in this area unless some further authority is found in the NEPA. Section 104¹⁶² provides that nothing in sections 102 or 103 shall effect the statutory obligations of an agency to coordinate or consult with any other federal or state agency; but the legislative history states that the purpose of this section is to assure that no agency will substitute NEPA for more restrictive and specific procedures already established by law.¹⁶³ Section 104, therefore, does not relate to this preemption discussion at all. Section 102 requires full compliance with the NEPA by the federal agency unless there is an express conflict between the NEPA and existing statutory authorization. Such a conflict appears to be present with the Atomic Energy Act,¹⁶⁴ since both the district and circuit courts in *Northern States* found there an express intent by Congress to preempt the radiological

upheld a city air pollution code. However, that code did not completely bar the ships involved; alterations, although extensive, would have resulted in compliance. Nuclear facilities are stipulated in the Atomic Energy Act to be in interstate commerce for the purposes of the Act. 42 U.S.C. § 2012(f) (1970).

¹⁵⁶ Statement of the Long Island Lighting Company, reported in *N.Y. Times*, Oct. 20, 1971 at 68, col. 4, complaining that uncertain appraisals of public priorities are winning over scientific data. The utilities are worried about more stringent thermal pollution standards.

¹⁵⁷ See text accompanying notes 90-99 *supra*.

¹⁵⁸ One solution to alleviate this problem is the proposed Power Plant Siting Act of 1971. See text accompanying note 195 *infra*.

¹⁵⁹ NEPA became effective during the *Northern States* litigation, and is not mentioned in the majority opinion of the Court of Appeals for the Eighth Circuit, 447 F.2d 1143 (8th Cir. 1971), *aff'd mem.*, No. 71-650 (U.S. Apr. 3, 1972).

¹⁶⁰ Statement of Harold P. Green, Professor of Law and Head of the Law, Science and Technology Program at George Washington University Law School, reported in Gillette, *AEC's New Environmental Rules for Nuclear Power Plants May Open New Debate, Extend Delays, Raise Plant Costs*, 173 Science 1112, 1113 (1971) [hereinafter *Gillette*].

¹⁶¹ See text accompanying note 109 *supra*.

¹⁶² 42 U.S.C. § 4334 (1970). See note 115 *supra*.

¹⁶³ 115 Cong. Rec. 40,420 (1969).

¹⁶⁴ 42 U.S.C. § 2011 *et seq.* (1970).

field.¹⁶⁵ So while the AEC will have to give adequate consideration to the question of radiation standards, and the public may have more opportunity to comment on the matter, it would appear that the states cannot set radiation standards of their own. The AEC has reached this same conclusion in a section of its regulations, published after NEPA and unchallenged in *Calvert Cliffs*.¹⁶⁶

The continuance of federal regulatory authority over radioactive effluents is in accordance with recent trends in environmental regulation. While responsibility for enforcement is still primarily at local levels, standard-setting responsibilities for environmental regulation are gradually being consolidated at higher levels of government, in accordance with the recognition that environmental problems, particularly air and water pollution, are regional rather than local in nature, and are beginning to outgrow the limits of the state police power.¹⁶⁷ The Federal Water Pollution Control Act¹⁶⁸ and the Clean Air Act,¹⁶⁹ for example, require that the states submit environmental quality standards applicable within their boundaries to the federal government for approval. Radioactive effluents in many situations may not be any more local than air or water pollution. For example, *Northern States* involved the discharge of gaseous and liquid effluents into the air and the Mississippi River. The trend toward federal regulation in areas previously subject solely to state regulations provides persuasive evidence for continuing federal regulation in an area which has been traditionally regulated solely by the AEC.

NEPA appears to have no effect on the bifurcation of the location of final decision-making responsibility for nuclear power plant environmental standards. Federal preemption continues in the radiological area, while state water quality standards remain effective, although the AEC may require more stringent water quality standards. However, since the AEC must consider all environmental factors in the licensing process, it is very likely that federal radiation standards will be under more public scrutiny than ever before.

IV. THE NEW ROLE OF THE AEC

A. Effectiveness of the Present System of Environmental Control Under NEPA

Now that the AEC is responsible for determining the total environmental impact of nuclear power plants, a major question arises as to the vigor with which the Commission will protect the public health and safety. Minnesota's concept of the public interest has been the protection of the environment, while the Commission's appears to be construction of more and larger nuclear plants. It has been argued

¹⁶⁵ In both the district and circuit court opinions in *Northern States*, preemption was found as a result of statutory authority and legislative history, although legislative history was heavily relied on. Statutory authority is the only basis upon which an agency may avoid compliance with § 102. Note, *The Regulation of Nuclear Power After the National Environmental Policy Act of 1969*, supra note 104, at 765.

¹⁶⁶ 10 C.F.R. § 50 app. D (1971) provides that conditions of adherence to state standards, or even consultation with the states, does not apply to the field of radiological standards.

¹⁶⁷ For changing patters in intergovernmental relations, see Grad, *Intergovernmental Aspects of Environmental Control*, in F. Grad, G. Rathjens & A. Rosenthal, *Environmental Control: Priorities, Policies and the Law* 47 (1971). However, it has been argued that recent developments in environmental control are persuasive evidence for allowing some state regulation in the field of radiological emissions. The dissenting opinion in the *Northern States* decision cited the recent passage of NEPA, *Calvert Cliffs*, and a variety of recent environmental statutes recognizing a significant state interest in the environment in support of this position. 447 F.2d 1143, 1157 (8th Cir. 1971), citing Environmental Education Act, 20 U.S.C. § 1531 (1970); Air Quality Act of 1967, 42 U.S.C. § 1857 (1970); Environmental Quality Improvement Act of 1970, 42 U.S.C. § 4372 (1970); Water Quality Improvement Act of 1970, 33 U.S.C. § 1171 (1970).

¹⁶⁸ 33 U.S.C. § 1160(c) (1970).

¹⁶⁹ 42 U.S.C. § 1857 (1970).

convincingly that the Commission is a "captured agency," as much a promoter of nuclear energy as a regulator.¹⁷⁰ However, the new chairman of the AEC, Dr. James Schlesinger, in an address to representatives of the nuclear industry, announced that the Commission would no longer "fight the industry's political, social and commercial battles," and that the agency's role has shifted from promoting atomic energy to protecting the public interest.¹⁷¹

There is no question that the AEC has previously suffered from a lack of credibility. While it is true that the public occasionally overreacts by equating the presence of a nuclear power plant in the vicinity with an impending Hiroshima, the residents of Grand Junction, Colorado are currently facing a frighteningly real and serious problem with radioactivity.¹⁷² Although not directly relevant to the operation of nuclear power facilities, this situation illustrates the dangerous consequences of an AEC mistake. Radioactive sand particles called tailings, left over from the AEC's uranium processing mill along the Colorado River during the years 1953 to 1966, were carted away and used in foundations of private homes and schools. The AEC has always maintained that under its own regulations it has no jurisdiction over the substance,¹⁷³ since the radiation levels involved are quite low. The Commission claims that letters were sent to health departments and uranium mills in 1961 warning of the danger, but none of the states involved have copies of these letters.¹⁷⁴ The radioactivity readings in some homes are well above those permitted in uranium mines, and there exists a serious possibility of chromosomal damage to infants.¹⁷⁵ The Commission has always been so preoccupied with a disastrous explosion, a concern which cannot be faulted, that it has tended to overlook less dramatic problems which can also be harmful.

Aside from the Commission's public statements, which indicate a more open minded attitude towards environmental protection than the AEC has ever shown before, there has not yet been much opportunity for Commission action under NEPA. What AEC action there has been since *Calvert Cliffs*, however, has not been encouraging.

The *Calvert Cliffs* decision indicated that there are two steps to the consideration of environmental impact under the NEPA; procedural and substantive. The AEC has recently given its first indication that the new procedures might not delay construction as much as the utilities industry had feared. Ruling on the Trojan nuclear plant being built in Columbia County, Oregon, the Commission has determined that work at the site may continue until the environmental impact report is completed, a process which will take about eight months.¹⁷⁶ The AEC noted that any environmental harm from the work done would be outweighed by the necessity of keeping power construction on schedule. This ruling indicates that perhaps as many as forty-five other units under construction might also obtain similar clearances.¹⁷⁷ Such a ruling flies in the face of the opinion handed down in *Calvert Cliffs*.¹⁷⁸ This AEC decision allows the large

¹⁷⁰ Note, Federal Preemption and State Regulation of Radioactive Air Pollution: Who is the Master of the Atomic Genie, *supra* note 51. See also Green, *supra* note 10.

¹⁷¹ N.Y. Times, Oct. 21, 1971, at 1, col. 6.

¹⁷² N.Y. Times, Oct. 3, 1971, § 4, at 3, col. 1.

¹⁷³ 10 C.F.R. § 40 (1971) defines the Commission's responsibility over source material as ending when uranium and thorium concentrations in ore fall below .05%. The tailings, their uranium removed, fall below that figure.

¹⁷⁴ N.Y. Times, Oct. 3, 1971, § 4, at 3, col. 1.

¹⁷⁵ *Id.*

¹⁷⁶ Wall Street Journal, Nov. 15, 1971, at 10, col. 2.

¹⁷⁷ *Id.*

¹⁷⁸ The AEC has recently been enjoined from issuing a partial operating license for the Quad Cities Nuclear Power Station at Cordova, Illinois, without the preparation of the 102(c) environmental impact statement. 4 CCH Atom. En. L. Rep., Report Letter No. 861, Dec. 17, 1971. The issuance of a 20%, or even higher percentage of capacity operating license without the filing of an impact statement is permitted by the AEC regulations promulgated after *Calvert Cliffs*. 36 Fed.

investment of a power company to provide a momentum that can crush environmental considerations. A precedent is set which may enable power companies to minimize their environmental efforts by asserting the expense and delay involved in incorporating environmental controls into a substantially completed nuclear power facility.

The outlook is not encouraging in the substantive area either. In contrast to the procedural mandate, which must be followed to the fullest extent possible, the substantive process of the NEPA is a flexible one; to use "all practicable means" to protect the environment. This flexibility has been recognized in cases other than *Calvert Cliffs*.¹⁷⁹ The result of this flexibility is that the AEC has a good deal of leeway in deciding whether technical and economic benefits outweigh environmental considerations to such an extent that a license should be granted. Considering the Commission's tendency to stress the necessity of alleviating the national power crisis, the AEC will no doubt consider the economic factor of power production to be a weighty element in the balancing process. This flexibility probably also means, by analogy to the Commission's previous custom of granting a construction permit even when all the safety details necessary for a grant of a license have not yet been worked out,¹⁸⁰ that environmental considerations may be given short shrift at the construction permit stage.

Since there has not yet been any court test of the substantive balancing process as carried out by the AEC, it is useful to analogize to the *Scenic Hudson Preservation Conference v. Federal Power Commission*¹⁸¹ cases to indicate the probable scope of judicial review. There are no enforcement procedures in the NEPA, so that a challenge to either the procedural or substantive requirements must be brought under the Administrative Procedure Act.¹⁸² *Scenic Hudson* indicates that litigants challenging an AEC decision under the substantive portion of the NEPA will face severe difficulties with the substantial evidence rule, which is the prescribed scope of review under the Administrative Procedure Act.¹⁸³ Under the rule, reviewing courts will defer to an agency determination so long as, upon an examination of the whole record, there is substantial evidence upon which the agency could reasonably base its decision.

In the first *Scenic Hudson* case,¹⁸⁴ prior to the passage of NEPA, the court required the Federal Power Commission,¹⁸⁵ on the basis of the Federal Power Act,¹⁸⁶ to consider environmental factors in its power plant licensing process.¹⁸⁷ The FPC considered the factors and granted the license for the pumped storage plant at Storm King Mountain, stating that any alternatives were too inefficient and costly and that the environmental impact was minimal. The Second Circuit upheld this decision in the second *Scenic Hudson* case.¹⁸⁸ Refusing to follow the suggestion that courts should

Reg. 18,071 (1971). The AEC is appealing the court decision. 4 CCH Atom. En. L. Rep., Report Letter No. 864, Jan. 7, 1972.

The Commission has proposed an amendment to the Atomic Energy Act to permit the AEC to issue interim operating licenses to nuclear power plants through June of 1973, without having to submit the final 102(c) impact statement required by the NEPA. N.Y. Times, Mar. 17, 1972, at 22, col. 1.

¹⁷⁹ See *Pennsylvania Environmental Council v. Bartlett*, 315 F. Supp. 238 (1970).

¹⁸⁰ See *Power Reactor Dev. Co. v. Int'l Union of Elec. Workers*, 367 U.S. 396 (1961).

¹⁸¹ *Scenic Hudson Preservation Conf. v. FPC*, Nos. 35,678, 35,676, 35,677, 35,683, 35,688, 35,689 (2d Cir. Oct. 22, 1971); *Scenic Hudson Preservation Conf. v. FPC*, 354 F.2d 608 (2d Cir. 1965), cert. denied, 384 U.S. 941 (1966).

¹⁸² 5 U.S.C. § 702 (1970).

¹⁸³ *Id.* § 706(2)(e).

¹⁸⁴ 354 F.2d 608 (2d Cir. 1965), cert. denied, 384 U.S. 941 (1966).

¹⁸⁵ Hereinafter FPC.

¹⁸⁶ 16 U.S.C. § 803(a) (1970).

¹⁸⁷ The FPC is the sole federal licensing body for nonnuclear power plants. Also, every licensee under the Atomic Energy Act who sells at wholesale or transmits electric energy in interstate commerce is subject to FPC regulation. 42 U.S.C. § 2019 (1970).

¹⁸⁸ *Scenic Hudson Preservation Conf. v. FPC*, Nos. 35,678, 35,676, 35,677, 35,683, 35,688, 35,689 (2d Cir. Oct. 22, 1971).

not defer to agency determinations in the environmental area, since this is not a field of agency expertise,¹⁸⁹ the court held that the substantial evidence test incorporated in the Federal Power Act¹⁹⁰ dictated that the ultimate standard of judicial review be a narrow one. Licensing had been entrusted to the informed judgment of the FPC and not to the preference of reviewing courts.

Prior to the second *Scenic Hudson* case, it had been suggested that NEPA would ease the substantial evidence problem, if only on the basis of the sheer importance of the interests affected.¹⁹¹ Although the licensing process in the second case had closed before NEPA became effective, the FPC did include a series of findings dealing with NEPA. The majority did not mention NEPA at all but the dissenting opinion stated that the FPC neglected to follow the requirements of NEPA. The strict deferential attitude of the court to the FPC indicates that, at least with respect to the Second Circuit, NEPA would probably have little effect on the substantial evidence test. Such deference might even be more pronounced in the field of nuclear power plants. In view of the mystique surrounding the regulation of atomic energy, the AEC could be accorded a wide range of discretion, although at least the *Calvert Cliffs* court indicated that it would not be stampeded by a recitation of the litany of the national power crisis.

B. Suggestions For Further Legislation

The combination of NEPA, the stunning decision in *Calvert Cliffs* and the pronouncements and regulations of the AEC in recent months has resulted in mass confusion in the nuclear power industry. The utilities fear that debate over environmental considerations is going to extend what is already a long and arduous licensing process.¹⁹² There have been several proposals for legislation to streamline the process. The President of the Atomic Industrial Forum has suggested new federal laws that would eliminate layers of overlapping jurisdiction in various agencies, a one-stop review and approval system at state levels, and a reexamination of public hearing procedures.¹⁹³ Several bills are in committee which provide for long-range planning for power plants and set new procedures for power plant construction permits.¹⁹⁴ Among these proposals is the Power Plant Siting Act of 1971,¹⁹⁵ providing for an environmental review by a new federal agency of all power plant facilities, where the state in which a plant is to be located does not have a power siting procedure of its own. The states would still be responsible for certificates of compliance with their regulations. This proposal retains AEC and FPC jurisdiction. The AEC is also advocating new amendments to the Atomic Energy Act which would shift debate and public intervention to a period well before a reactor is set to operate.¹⁹⁶

While none of these proposals alleviates the confusion with respect to plants already in construction, they all attempt to shift environmental planning to the earliest possible stage in the design process. Early consideration of environmental problems is essential so that new plants can be designed and constructed in a manner which is fair to both the utilities and the environment.

Possibilities for more far-reaching legislation are suggested by a suit now pending in the federal district court in the District of Columbia, where several environmental groups are seeking to dissolve the current union of regulatory and promotional

¹⁸⁹ Suggested in Sive, *supra* note 104.

¹⁹⁰ 16 U.S.C. § 825(b) (1970).

¹⁹¹ Sive, *supra* note 104.

¹⁹² Gillette, *supra* note 160, at 1112.

¹⁹³ N.Y. Times, Nov. 7, 1971, § 3, at 26, col. 2.

¹⁹⁴ Gillette, *supra* note 160, at 1112.

¹⁹⁵ H.R. Rep. No. 5389, 92nd Cong., 1st Sess. (1971); S. Rep. No. 1684, 92nd Cong., 1st Sess. (1971).

¹⁹⁶ Gillette, *supra* note 160, at 1112.

functions in the Commission.¹⁹⁷ The complaint asserts that there is no neutral forum in which to protest nuclear energy policies, and that this alleged deficiency violates due process of law.¹⁹⁸ The Chairman of the AEC, Dr. James Schlesinger, has indicated the Commission is considering such a separation by assigning regulatory functions to another agency.¹⁹⁹ Such a split would be highly desirable. Without casting aspersions on the AEC's recent statements about the Commission's new commitment to environmental protection, it must be recognized that it will be very difficult for the AEC to reverse the veritable conflict of interest situation that has existed for the past twenty-five years if the Commission still retains its present structure. This division would enable the AEC to concentrate on promotional and planning activities. Should the suit not be successful, congressional legislation should be undertaken to achieve the same result.

Schlesinger also favors expansion of AEC activities to include research and development in nonnuclear fields of energy.²⁰⁰ It has been suggested that, as a result of *Calvert Cliffs*, the AEC will have to justify the use of nuclear facilities over fossil fuel plants.²⁰¹ In order to effectively accomplish this, the AEC would have to acquire expertise in all fields of power production. New legislation providing for consolidation of planning responsibility for all forms of power production in one agency would be of great benefit, since we have seen that there are certain portions of the country where one form of power production is preferable to others. Arguably, the AEC might not be the appropriate place for such a consolidation, but the only alternatives are a new agency, or an expansion of the authority of the Federal Power Commission, which is now primarily a licensing and rate-making body.²⁰²

In investigating any proposal for legislation it is vitally important that Congress heed the twin goals of environmental protection and orderly planning for power production. There is no reason why these two objectives should be mutually exclusive. Technological capabilities do exist for dealing with nuclear power plant environmental problems of both a radiological and nonradiological nature. It is of primary importance that there be strict regulations to ensure the use of these safeguards.

V. CONCLUSION

Although environmental regulatory authority over nuclear power plants is split to a certain degree between the federal government and the states, NEPA and *Calvert Cliffs* make possible, for the first time, a comprehensive environmental review of these power facilities at the federal level. Since the federal government has the sole authority to license nuclear power facilities and set radioactive effluent standards, and also must approve state water quality standards for interstate waters, the federal level appears to be the most appropriate for a review of environmental impact. At this time, more work is needed to solve the problems of overlapping state and federal jurisdiction. Any new legislation to eliminate overlapping jurisdiction, to streamline the licensing process or provide for long-range planning should be aimed at ensuring that environmental problems be considered at an early stage in the planning and design process.

Although the AEC has repeatedly emphasized its new interest in stricter environmental controls, recent Commission actions indicate a lingering reluctance to vigorously implement NEPA. In order to ensure appropriate environmental protection and to remove an obvious conflict of interest, there should be a divorce of the

¹⁹⁷ Divorce, *Environmental Style?*, 175 Science 149 (1972).

¹⁹⁸ *Id.*

¹⁹⁹ *Id.*

²⁰⁰ Gillette, Schlesinger and the AEC: New Sources of Energy, 175 Science 147 (1972).

²⁰¹ Gillette, *supra* note 160, at 1113.

²⁰² 16 U.S.C. § 791 et seq. (1970).

promotional and regulatory functions currently combined in the AEC. With a combination of congressional legislation and internal reorganization, the Atomic Energy Commission can become an agency which will be able to take a broad view of all the alternatives, not just nuclear power, and devise a sorely needed orderly plan that will strike a balance between the production of electricity and the protection of an already beleaguered environment.

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