Pre-emption: Approaching Federal-State Conflict Over Licensing Nuclear Power Plants

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Two seemingly unnoteworthy conditions in a certificate of the Public Service Commission of Wisconsin authorizing the construction of a nuclear power reactor bring into being the basis for a federal-state controversy of major proportion.¹

The conditions² require: (1) the addition of a stored energy system into the safety injection system of the nuclear reactor to assure system operability in event of total loss of electric power; and (2) that consideration be given to introducing neutron absorbing material in the space below the core in the reactor vessel. Both conditions relate to the adequacy of the design of the reactor from a safety standpoint. The first condition seeks to assure operability of an existing engineered safeguard. It posits a reasonable safety objective and permits a practical engineering design for compliance. The second condition appears directed at the prevention of reforming of a critical mass of fuel in the unlikely event of the melting of some portion of the core. While the safety objective will not here be questioned, the method proposed for its accomplishment is neither thought to be effective nor related to good engineering design.

The wisdom of these conditions is not relevant to the potential conflict to be discussed; rather, the conditions are conveniently illustrative. The Wisconsin-Michigan Power Company has filed with the United States Atomic Energy Commission an application for a permit to construct the Point Beach Nuclear Power Plant.³ The Public Service Commission of Wisconsin has not indicated an interest in participating in the AEC proceeding.

The potential conflict between the State of Wisconsin and the federal government arises from the exercise by each of regulatory authority over the safety of nuclear power plants through separate licensing actions. This author doubts the conflict will come to fruition because attendant inconveniences will most likely be resolved amicably among the parties. However, the context in which the potential controversy arises, the increasing potentiality of a major conflict in this area, and

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²Id. at 15, conditions 2 and 3.
³A.E.C. Docket No. 50-266.
the sudden burgeoning of the nuclear power industry make it now appropriate to set the relevant considerations in perspective.

There have been a few preludes to federal-state conflict over regulation of the atom:

1. The Ravenswood Reactor

In December, 1962 Consolidated Edison Company of New York announced the intention to construct a nuclear power plant at Ravenswood, New York, within metropolitan New York City. These included double containment, a boron-water injection system and dump cooling. The plant was to incorporate more extensive safeguards than previously proposed for any reactor. There was enormous public opposition to the project. A bill was introduced in the City Council prohibiting the construction of a nuclear reactor within the city limits. Before the bill was voted upon, the matter was resolved by withdrawal of the application by Consolidated Edison, ostensibly as the result of the purchase of low cost Canadian hydroelectric power.

The Chairman of the Atomic Energy Commission commented upon this proposed bill in a letter to the President of the City Council. In the letter he stated:

... the Atomic Energy Act establishes a comprehensive system for regulation and control of uses of atomic energy. The Atomic Energy Act and its legislative history express the congressional intent that the control of the radiation hazards from certain facilities, including nuclear reactors, be the exclusive responsibility of the Federal Government.

2. The Jersey Central Reactor

The State of New Jersey, Department of Public Utilities, Board of Utility Commissioners issued an interim order in the application of Jersey Central Power and Light Company for authorization to construct a nuclear power reactor at Oyster Creek, New Jersey which contained the following finding:

5 These included double containment, a boron-water injection system and dump cooling.
6 NEW YORK, N.Y., LAW 310 (1963).
7 See NUCLEONICS, February 1964, at 19.

"It should be noted that Article VII of the Agreement between AEC and the State of New York for transfer of certain regulatory jurisdiction pursuant to Section 274 of the Atomic Energy Act provided that the State and AEC would study the pre-emption question. This resulted in a Memorandum of Understanding executed May 7, 1965 whereby AEC is to furnish certain information to the State, and periodic meetings between AEC and the State are to be held. The State agreed to use its best efforts to exempt activities regulated by AEC. The Memorandum specifically disclaims any effect upon the rights of the State and of AEC under the Constitution.

The State of Louisiana also entered into such a Memorandum of Understanding on April 17, 1967 in connection with its Section 274 Agreement, because of concerns regarding the Tidelands Oil dispute.
The federal Congress has pre-empted an area of nuclear reactor regulation. However, it has also made clear that non-radiation hazards connected with a reactor facility are proper subjects for State regulation. The majority of the hazards which are the subject of inquiry in this proceeding are of the non-radioactive type. As to the few radiation hazards which are involved here, no resolution of the possibility of a federal pre-emption need be made. The parties are in substantial accord as to the safeguards necessary to secure adequate protection against radiation hazards. Therefore, the Board will not undertake to define the limits of federal pre-emption, nor to dispose of unresolved constitutional problems which this raises.9

The Board then ordered an oral argument regarding the exact nature and scope of recommended and contemplated procedures with respect to the monitoring of radioactive discharges from the plant to the atmosphere.10

3. Massachusetts Legislative Action

A bill has been introduced in 1966, and again in 1967 in the Massachusetts House of Representatives requiring approval by the Department of Public Health of "such portions [of any nuclear facility] as may affect the environment or the public health, comfort and convenience."11

The bill followed the report of a special commission appointed to study the prospect of adopting regulatory and protective measures relating to ionizing radiation.12 The report made the following comment regarding entering into an agreement with the AEC for transfer of certain licensing authority from AEC to the state pursuant to section 274 of the Atomic Energy Act of 1954, as amended (henceforth the Act).13

The main objection we have is that by such an agreement we would possibly give the impression that we need some mandate from the Atomic Energy Commission to protect people within the borders of Massachusetts from the harmful effects of radiation. The special Commission is firmly convinced that if any dangerous situation is found within the boundaries of this state, its Department of Health, with or without the approval of the AEC, will take such measures as may be necessary to eliminate the danger. (Emphasis supplied.)14

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10 Id. at 16.
11 Commonwealth of Massachusetts, H.R. 70 (1966); H. R. 1721 (1967); An Act Providing for the Protection of the Public Health as Related to Certain Nuclear Facilities.
4. The Bodega Bay Case

In January 1963, the Pacific Gas and Electric Company filed with AEC an application for a construction permit for a nuclear power reactor to be located at Bodega Head, California. There was considerable public opposition to the project. Of particular concern from a safety standpoint were matters relating to seismic activity.

While the AEC proceeding was pending, a certificate was issued by the California Public Utilities Commission, which would have permitted construction to proceed upon issuance by AEC of the permit. The Sierra Club petitioned for a reopening of the California proceeding for the taking of additional evidence, including evidence relating to radiological health and safety.

On March 17, 1964, the Supreme Court of the State of California affirmed en banc the order of the California Public Utilities Commission denying the petition of the Sierra Club to reopen the proceedings.

In answer to the question: "Has the federal government pre-empted the question of the safety of the location of atomic reactors?" the court stated:

*No... in view of subdivision (k) of section 2021 [274], the California Utilities Commission] unquestionably has authority to inquire into safety questions apart from radiation hazards. Accordingly, since the location of an atomic reactor at or near an active earthquake fault zone involves safety considerations in addition to radiation hazards, it is clear that the federal government has not pre-empted the field, at least with respect to the phase of protecting the public from hazards other than radiation hazards, and that the States' powers in determining the location of atomic reactors are not limited to matters of zoning or similar local interests other than safety.*

The decision says only that the states may regulate safety matters related to non-radiological hazards associated with nuclear power plants. Although the decision perhaps connotes that AEC has pre-empted the regulation of safety in regard to radiological hazards associated with nuclear power plants, it has been carefully worded so as not to state this conclusion.

31, 1962): “A 'turn over agreement' is necessary so that the State of Michigan may have control over radiation hazards arising out of the use of sources of atomic energy defined under the Federal Atomic Energy Act.”

See also, New York State Bar Ass’n Committee on Atomic Energy, *State Jurisdiction to Regulate Atomic Activities: Some Key Questions*, at 3-5, (July 12, 1963).


The application was withdrawn on November 12, 1964, when the AEC Regulatory Staff refused to support the application because of lack of demonstration of the design concept for withstanding differential ground motion. See *Summary Analysis by the Regulatory Staff, October 27, 1964.*

The foregoing cases evidence considerable disagreement regarding what, if anything, has been pre-empted with respect to regulation of radiological hazards associated with the use of ionizing radiation. The disagreement may in part be explained because: (1) judicial guidelines with respect to pre-emption cannot yet be described as firmly established; and (2) the recent evolution of activities utilizing ionizing radiation has not afforded time for comprehension of the patterns that are beginning to emerge. More detailed discussion of these two factors is warranted.

I. Federal Pre-emption and Restrictions

Upon State Action

The doctrine of pre-emption emerges from article VI of the United States Constitution, the "Supremacy" clause, which elevates federal law above that of the states. But the Tenth Amendment to the Constitution limits the scope of federal enactments.

As life and law have become more complex during the past one-hundred-eighty years, considerable overlapping of authority between the federal government and the states has developed. Conflicts have arisen particularly in the areas of seditious conspiracy, labor-management relations, and regulation of goods or services affecting interstate commerce. In simplest form, the states and the federal government may assert jurisdiction over the same subject matter based upon distinct, separate, and perhaps unrelated acts of sovereignty. A common example is that of the state seeking, under the police power, to regulate quality, packaging, or method of handling of goods within the state and the federal government seeking to regulate them as they affect interstate commerce.

The fact of actual or potential conflict between state and federal acts of sovereignty does not foretell the mode of resolution. There is a spectrum of possibilities and the guidelines for selection are expressed in "terms of art" rather than those of technical precision. As stated by the Supreme Court:

18 "This Constitution and the Laws of the United States which shall be made in Pursuance thereof; and all Treaties made, or which shall be made, under the Authority of the United States, shall be the supreme Law of the Land, and the Judges in every State shall be bound thereby, any thing in the Constitution or Laws of any State to the Contrary notwithstanding."

19 "The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people."


This Court, in considering the validity of state laws in the light of treaties or federal laws touching the same subject, has made use of the following expressions: conflicting; contrary to; occupying the field; repugnance; difference; irreconcilibility; inconsistency; violation; curtailment; and interference. But none of these expressions provides an infallible constitutional test or an exclusive constitutional yardstick. In the final analysis, there can be no one crystal clear distinctly marked formula. Our primary function is to determine whether, under the circumstances of this particular case, Pennsylvania's law stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress.

At one end of the spectrum, the state is precluded from legislating in the area of actual or potential conflict. The subject matter is considered to be exclusively the object of federal activity, or alternatively, federal activity has so pervasively encompassed the subject matter as to preclude state action. This result would pertain even though the federal government had not acted in the particular area, had not indicated an intention to act, and the state enactment had not been intended to be offensive to the pattern of federal action.

At the other end of the spectrum, the states would be free to act until such time as it could be shown that there was actual conflict between state and federal authority, and that the state enactment was inconsistent with realization of the federal objective.

In between, varying degrees of state action would be tolerated, perhaps depending upon such factors as federal inaction; compatibility of objectives of state and federal programs; need for the exercise of authority and the unwillingness or inability of the federal government to make provision therefore; or the predominantly local nature of the subject matter of action.

It is not here intended to present a comprehensive analysis of pre-emption, distinguishing and explaining the myriad instants of conflict that have arisen. Rather, the object is to provide a broad framework within which the implications of federal-state conflict in regulation of nuclear safety may be detailed.

Thus, in Cloverleaf Butter Company v. Patterson, wherein the Supreme Court proscribed seizure by state officials of material intended for incorporation into a product prepared for interstate commerce, the Court reasoned:

Where this power to legislate exists it often happens that there is only a partial exercise of that power by the federal government. In such cases the state may legislate freely upon those phases of the commerce which are left unregulated by the nation. But where the United States exercises its power of legislation so as to conflict with a regulation of the state, either explicitly or by implication, the state legislation becomes inoperative and the federal legislation exclusive in its application.

When the prohibition of state action is not specific but inferable from the scope and purpose of the federal legislation, it must be clear that the federal provisions are inconsistent with those of the state to justify thwarting of state regulation.

And, in *Campbell v. Hussey*, the Court concludes:

Congress, in legislating concerning the type of tobacco sold at auction, pre-empted the field and left no room for any supplementary state regulation concerning those same types . . . .

We have then a case where the federal law excludes local regulation, even though the latter does no more than supplement the former. Under the definition of types or grades of tobacco and the labeling which the Federal Government has adopted, complementary state regulation is as fatal as state regulations which conflict with the federal scheme.

However, in *Florida Avocado Growers v. Paul*, the Supreme Court upheld a California statute which prohibited transportation or sale within the state of avocados not meeting specified standards. The avocados had been certified "mature" pursuant to federal regulations issued under the Federal Agricultural Marketing Agreement Act and had been imported for sale. The Court reasoned:

The test of whether both federal and state regulations may operate, or the state regulation must give way, is whether both regulations can be enforced without impairing the federal superintendence of the field, not whether they are aimed at similar or different objectives.

In the field of labor-management relations, the cases have been particularly numerous. The Supreme Court decision in *NLRB v. Jones and Laughlin Steel Corp.*, upheld the authority of Congress to enact broad legislation. In *Hill v. Florida*, a state statute requiring licensing of union representatives was struck down because, to the extent that it limited the union's choice of representatives, it interfered with "the 'full freedom' of employees in collective bargaining." This opened the door to broad interpretation of the scope of federal preemption. But, where the conduct involved is marked by violence or imminent threats to the public order, the Supreme Court has consistently

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35 301 U.S. 1 (1937).
36 325 U.S. 538 (1945).
upheld state court awards of civil damages and the issuance of injunctions. Hill v. Florida was followed by a series of cases trying to work out a balance between state interests and federal prerogatives. These were culminated by the Supreme Court decision in San Diego Building & Trades Council v. Garmon, wherein the court espoused as a jurisdictional standard, that subject matter arguably protected by section 7 or prohibited by section 8 may not be subject of state court action. In recent decisions, the Court has had some difficulty adhering to this standard.

In three cases the Court has departed from finding pre-emption, notwithstanding that the activity met the Garmon standard. These were: (1) a suit to enforce a labor-management agreement pursuant to Section 301 of the Labor-Management Relations Act; (2) a suit to enjoin enforcement of an agency shop provision in a state having a right to work law authorized by Section 14(b) of the Taft-Hartley Act; and (3) a suit by an employer to recover damages for defamatory statements published by a union during an organizing campaign.

1. Suit to enforce a provision of a labor-management agreement

Section 301 of the Labor Management Relations Act creates a right of action in federal court to enforce the provisions of a labor-management agreement in an industry affecting commerce. The Court merely states that this right may be exercised when the violation of the agreement constitutes an unfair labor practice. The state court action is upheld because Congress has established the same right of action in federal court.


39 There have been fourteen decisions of the Supreme Court in this area since Garmon:

40 In a fourth case, Hanna Mining Co. v. District 2, Marine Eng'rs. Beneficial Ass'n, 382 U.S. 181 (1965), the Court permitted the state to enjoin picketing, because a Board determination that the employees were in supervisory capacities removed them from the protection of the N.L.R.A.


2. Suit to prevent violation of right to work law

The state injunction against the creation of an agency shop in violation of the state right to work law presented to the Supreme Court the question whether a state remedy existed for violation of a state law, where the state law was specifically excepted from the scope of pre-emption by Section 14(b) of the Taft-Hartley Act; or whether a violation of that law be subject exclusively to redress by the National Labor Relations Board, because the operation of Section 14(b) in conjunction with state law made the conduct arguably an unfair labor practice. Whether the labor-management agreement created an agency shop was not thought to be in issue. The Court held that the state should interpret its substantive law. Whether or not the state court could afford a remedy was retained for reargument.\textsuperscript{45} Had there been issue over whether an agency shop was created, the Court might well have felt that the federal interest in that question outweighed the value of state interpretation of its substantive law.\textsuperscript{46}

3. Damages for libel of an employer

The award of damages by a state court for libel of an employer during a union organizing campaign merely expands the exclusions from the Garmon doctrine of matters peripheral to the concerns of the L.M.R.A., where an important state interest is involved. However, this seems a particularly damaging extension, because of the potentiality of this form of action as a weapon against legitimate labor practices.\textsuperscript{47}

The labor-management cases from Garmon to date are of particular interest to the analysis of pre-emption and the atom. Garmon represents both the evolution and the birth of a broad standard for defining the scope of federal pre-emption. The cases which followed depict the judicial struggle to adhere to this standard, and provide insight into the wrenching by competing interests that is necessary for erosion at its edges. If not read too literally, this area affords useful precedent for conflicts over regulation of the atom.

II. Framework for Developing Peaceful Uses of Atomic Energy

Precedents in the area of pre-emption resolve conflicts through ascertainment of the congressional intent in formulating the program of federal action. But the creation of the technology which initiated the need for federal regulation of peaceful uses of atomic energy was undertaken by the federal government without the knowledge of Con-

\textsuperscript{45} On reargument, the Supreme Court held that the state could enforce its right to work law, 375 U.S. 96 (1963).
\textsuperscript{46} Retail Clerks v. Schermerhorn, 373 U.S. 746 (1963).
\textsuperscript{47} Note that in New York Times v. Sullivan, 376 U.S. 254 (1964), the Supreme Court recognizes the potentiality of this form of civil action to retard legitimate criticism of public officials.
gress. The birth of the "thing" to be controlled was a result of the secret activities of the Manhattan Engineering District of the Army Corps of Engineers during the Second World War.\textsuperscript{48} When the war ended, Congress was given an on-going program and the task of providing for its future. The prime concern of Congress was the protection of common defense and security. Nevertheless, it was decided to establish civilian control of the program through the Atomic Energy Commission,\textsuperscript{49} and a new feature was added: the Commission was directed to encourage research and development efforts for the peaceful use of the atom. Section 1a of the 1946 Act contains the following declaration:

Accordingly, it is hereby declared to be the policy of the people of the United States that, subject at all times to the paramount objective of assuring the common defense and security, the development and utilization of atomic energy shall, so far as practicable, be directed toward improving the public welfare, increasing the standard of living, strengthening free competition in private enterprise, and promoting world peace.

The Commission was to own\textsuperscript{50} all facilities which produced fissionable materials.\textsuperscript{51} These production facilities were to be operated by the Commission or through contract with the Commission.\textsuperscript{52} Fissionable material was to be owned and controlled by the commission in like manner, except that small quantities could be leased to private persons for the conduct of research and development activities that did not have potential for weapons development.\textsuperscript{53} Radioactive materials coming out of facilities producing or using fissionable material (by-product material)\textsuperscript{54} were owned by the Commission, but could be distributed under license, for research or development activity, medical therapy or industrial uses, with the proviso that:

The Commission shall not distribute any byproduct materials to any applicant and shall recall any distributed materials from any applicant, who is not equipped to observe or who fails to observe such safety standards to protect health as may be established by the Commission or who uses such materials in violation of law or regulation of the Commission or in a manner other than as disclosed in the application therefor. (Emphasis supplied.)\textsuperscript{55}

\textsuperscript{48}That is not to say that the existence of ionizing radiation was unknown. Rather, it is the new applications of ionizing radiation and their potential for enlarging the hazards associated with permitting use of ionizing radiation that created the need for federal control.
\textsuperscript{50}Id. at §4(c) (1).
\textsuperscript{51}Id. at §5(a) (1).
\textsuperscript{52}Id. at §4(c) (2).
\textsuperscript{53}Id. at §5(a) (2); Id. at §5(a) (4).
\textsuperscript{54}Id. at §5(c) (1).
\textsuperscript{55}Id. at §5(c) (2). Similar provisos are contained in §7(c) pertaining to the issuance of licenses for commercial or industrial facilities; and in §3(a) pertaining to the distribution of fissionable material. See also §4(c) (2).
Even some source material could not be mined and transferred without a license from the Commission.

Thus, one sees that under the 1946 Act, common defense and security was the principal concern, and direct control, through contract, the principal mode of operation. But where direct control was not consistent with the Commission's new charter to encourage private research and development, as was the case for materials disseminated to private users and for non-production facilities, the Commission was directed to make provision for common defense and security, and for safety, through the licensing process.

Between 1946 and 1954 there was extensive development of peaceful use of atomic energy. Emphasis was placed upon the development of prototype reactors, particularly for the naval nuclear propulsion program. From these projects there emerged a new perspective regarding the role of private industry in the utilization of atomic energy.

The new importance of private industrial development in the atomic energy field was implemented in the Atomic Energy Act of 1954, which introduced three major changes to the scheme of federal control. The Act permitted: (1) private ownership and operation of utilization facilities under license; (2) private ownership of byproduct and source material under license; and (3) leasing of special nuclear material under license, with the added requirement that sufficient special nuclear material be disseminated to encourage private research and development.

These changes were intended to remove the spectre of exclusive government control over development of peaceful use of atomic energy, and to encourage the growth of private industrial capability. The transition from exclusive governmental development to private development (the period since 1954 continues to be one of transition) is accompanied by two major changes in emphasis regarding the need for regulating use of the atom.

First, although AEC conducts a sizeable program of its own at AEC facilities and through national laboratories operated under con-

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56 Id. at §5(b)(1). Natural uranium and thorium defined.
57 Id. at §§5(b)(2), §5(b)(5) and §5(b)(6) authorized the Commission to guarantee purchase prices for source material and to conduct or permit exploration for new reserves.
59 "Utilization facility" is defined in Atomic Energy Act of 1954, §2014aa, 42 U.S.C. §2011 (1958). See also §§2131, 2133 and 2134. Note that "own" is omitted from the list of functions for which a license is required.
63 Atomic Energy Act, 42 U.S.C. §2073 (1964); this section was amended in 1964, P.L. 88-489, to permit private ownership of special nuclear material.
tract for AEC, the center for decision-making in regard to specific projects has shifted from AEC to a multitude of individual users with varying interests and requirements. These users key their decisions to factors of the marketplace, and are influenced in their planning by AEC (except for matters relating to safety and security) principally through development assistance or through AEC funded contracts for research and development.

Second, the pace of technological development and the breadth of development interest have markedly been enlarged. Particular effort has been directed toward promising fields; for example, nuclear power reactors and radioisotopes for application in medicine and space.

The 1954 Act shifted the role of the Commission from exclusive developer to promoter and co-participant-sponsor of private development of peaceful uses of atomic energy; and shifted the posture of the Commission in matters relating to health and safety from contract administrator to regulator.

The Act spells out more clearly than the 1946 Act, the charter and procedures of the Commission for facility and materials licensing, and rests the charter squarely upon the interests of "common defense and security" and "public health and safety," jointly.

The legislative history of the Act is silent on the question of pre-emption. The silence, in the face of transference to private industry of operating control of peaceful uses of atomic energy, has been the focal point of comments on the scope of federal pre-emption. These comments have not asked the question whether transference from one form of regulation to another was inconsistent with the maintenance of a comprehensive federal scheme. Rather, they have looked at the transfer of development responsibility from government, to government and industry jointly, as a surrender of a federal interest; and the establishment of extensive licensing procedures as the initiation of a new federal interest which needed to be weighed as a separate concern against the states' interest in regulating public health and safety.

Turning from the activities of the Atomic Energy Commission, the states have traditionally exercised licensing authority with regard to three major classes of use of ionizing radiation: (1) naturally occurring radioactive materials, principally radium and polonium; (2) x-ray apparatus; and (3) research facilities such as accelerators, and the radioactive material produced therein.

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64 These include isotope users, fuel processors, utilities, reactor manufacturers, mining and milling companies, etc.


66 All of these came to be known before the beginning of the federal atomic energy program. The commercial use of radium and the use of x-rays in medicine had become extensive at the time the federal program was undertaken,
Certain facts have emerged from the existing patterns of regulation. There is extensive state interest in participating in the regulation of atomic energy and in remaining aware of use of radioactive material within the state. There has been a tremendous increase in the number of users, types of users, and variety of material used, particularly by-product material. And there is in evidence the need for trained manpower at the local level and for a division of the responsibilities between the states and the federal government in the interest of effective regulation.

The importance of state co-operation and participation has been accelerated by the tremendous rate of growth of use of radioactive materials. At the same time, the need for uniform and readily implemented safety standards and regulations, for education and training programs, and for adequately trained people has become pressing.

Recognizing the importance of effective co-operation between AEC and the states, Congress amended the Act in 1959\textsuperscript{67} to permit AEC "to enter into agreements providing for discontinuance of [certain] regulatory authority of the Commission," thereby permitting exercise by the states of exclusive regulatory authority in these areas.

The House and Senate Reports on the amendment make quite clear that concurrent regulatory authority is not to be exercised.\textsuperscript{68}

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. The intent is to have the material regulated and licensed either by the Commission, or by the State and local governments, but not by both.

AEC may permit a state prepared to assume the responsibility\textsuperscript{69} to exercise exclusive licensing authority over by-product, source, and special nuclear material in quantities insufficient to form a critical mass, with specific exceptions,\textsuperscript{70} and with the proviso that AEC find the state program to be compatible with its program for regulation of such materials.\textsuperscript{71} AEC may re-assert jurisdiction if it finds such action is required to protect the public health and safety.\textsuperscript{72}

At present, seventeen states have entered into agreements with

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and the new federal program relied heavily upon the scientific discoveries that were then being developed at research facilities. The failure to provide for federal regulation of accelerator produced radioactive materials is particularly difficult to explain, because the material is identical with reactor produced byproduct material.

\textsuperscript{67} Public Law 86-373; Section 274 of the Act, 42 U.S.C. §2021 (1964).


\textsuperscript{71} §274d(2), 42 U.S.C. §2021d(2) (1964).

A few states have refused to consider negotiations, because they view an agreement as a surrender of authority they now have.\textsuperscript{74}

While neither the Act nor its legislative history discusses pre-emption, the Act, on its face, demonstrates the intention that the federal government, through AEC, be responsible for protecting public health and safety from radiological hazards associated with the development and use of atomic energy. The legislative history of the 1959 Amendments establishing the state agreement program, by its extensive discussion of pre-emption,\textsuperscript{75} re-affirms the responsibility of AEC and charges the Commission to undertake cooperative activities with the states leading to the transference of certain regulatory authority. The mechanism of transference forecloses the exercise of dual regulatory authority. This suggests that dual regulation would hamper the development of an ordered program for effective regulation of atomic energy activities of particularly local impact. The states through cooperation with AEC may better develop their informational resources, education and personnel training opportunities, and standards and regulations, and may better co-ordinate their program with AEC and with other agreement states.

III. The Basis for Federal Pre-emption

Reference has been made to the considerable comment in other writings regarding the question, "has the federal government pre-empted the field of regulating peaceful uses of atomic energy?"; and to the fact that these analyses have searched the legislative history of the Act in vain for specific indicia of such intent. It is suggested that there are two questions that need be answered separately: (1) does a constitutional basis exist that would support federal pre-emption? and (2) does the pattern of the federal authority established indicate the exercise of federal pre-emption?

Common defense and security were the underpinnings of the early federal atomic energy programs. That Congress was not unaware of the need for protection of public health and safety at the time of enactment of the 1946 Act is incisively stated in the following excerpt from the testimony of Dr. Vannever Bush, Director, Office of Scientific Research and Development, before the House Committee on Military Affairs:\textsuperscript{76}

\begin{footnotes}
\item[74] See, Report on Regulatory and Protective Measures Pertaining to Ionizing Radiation within the Commonwealth, \textit{supra} note 12.
\item[75] See, \textit{Hearings Before the Joint Committee on Atomic Energy on Federal-State Relationships in the Atomic Energy Field}, 86th Cong., 1st Sess. (1959); See Staff Committee Point, \textit{supra} note 65.
\item[76] \textit{Hearings Before the House Committee on Military Affairs on Atomic Energy}, 79th Cong., 1st Sess., at 34 (1945).
\end{footnotes}
The application of the science of atomic energy is in its infancy. No man can tell what may emerge from this vast new field during the next generation. At the time that Faraday performed his notable experiments on electricity no one could have envisaged the great power systems and communication systems of the present day. No one can tell what lies ahead in this present field, but we can be sure that the opening up of this area gives new possibilities for the human mind and that the ultimate results may indeed be very great.

On the other hand, there are no immediate great commercial applications just around the corner. It is evident that there can ultimately be applications to the production of power within the reasonably near future, but the matter has not as yet been studied sufficiently to indicate just how economical these may be in comparison with other sources of power. Study by many minds and a great deal of experimentation will be required before the possibilities of industrial application ever become clear. The situation in which we are placed at the present time, therefore, is one of great potential importance, but one in which practical results will certainly not come immediately.

Nevertheless it is essential that legislation be enacted at once or with reasonable promptness for the Federal control of all phases of atomic energy. This is an art which it is very dangerous indeed to practice. Merely for the safety of the people it is essential that it be carried on only under such strict regulation as will insure that proper safeguards are always taken. This can be done effectively only if the Federal Government establishes new means for the purpose.

The 1954 Act charges the Commission to effectuate "a program to encourage widespread participation in the development and utilization of atomic energy for peaceful purposes to the maximum extent consistent with the common defense and security and with the health and safety of the public."\(^7\)

Long and tortuous arguments have been offered relating public health and safety to common defense and security, and stressing the impact of the atomic energy program upon interstate commerce, in order to justify federal control over licensing uses of atomic energy in the interest of public health and safety.\(^8\) These will not be repeated here. This author cannot but conclude that there is constitutional basis for a scheme of federal regulation of a program which is of major importance to the nation and which potentially has a nationwide impact on public health and safety.

The more difficult question is whether the scheme of federal action indicates a necessity for excluding state action. It should be stated at the outset that the power of the federal government to act includes the


\(^8\) See, STASON, ESTEP & PIERCE, ATOMS AND THE LAW 1002 et. seq. (1959); See also articles referenced at footnote 65.
power to preclude the states from acting.\(^7\) The question, then, is not one
of power, but of its exercise.

The power exercised by the federal government in the field of atomic
energy is broader than the charter granted AEC.\(^8\) Since we are here
concerned only with conflict over the exercise of licensing authority,
comment will be restricted to the scheme of licensing established in
the Act.

The scope of regulatory authority is co-extensive with that of the
1946 Act and therefore. That is, it encompasses all use of atomic
energy to which private participation was invited by the 1954 Act or
in which such participation was permitted under the 1946 Act. AEC
has not sought to exercise authority in those areas which developed
apart from the federal atomic energy program.\(^3\)

Thus, there have been separate and distinct areas, albeit not logically
drawn, over which the states and the federal government have each
exercised exclusive regulatory authority. That is, the states have not
yet sought to challenge the areas wherein AEC has exercised authority,
and AEC has not attempted to broaden its authority into areas histori-
cally regulated by the states. The approaching conflict may take three
forms: (1) AEC chooses not to require a license for certain activity,
which the state then seeks to regulate; (2) AEC establishes a license
requirement or standard, which the state then seeks to implement or
elevate; and (3) the state chooses to exercise licensing authority inde-
dendent of AEC's licensing action.

For each conflict, competing interests will carry different weight
and will appear of more or less formidable posture, depending upon the
facts of the conflict. In the final analysis, it is the balance of these com-
peting interests and the evaluation of the impact of dual regulation of
the subject matter upon the federal program that should determine
whether the state action is inconsistent with the scheme of federal regu-
lation. It is to this judgment that the cases applying the Garmon
doctrine offer valuable precedent.

The case for broad scope of pre-emption

Since we have no power to thrust back in its bottle the jinni so


\(^8\) Extensive activities are also conducted by the U.S. Public Health Service
through support to state programs and compilation and dissemination of
information; the Office of Civil Defense through maintenance of equipment
and installation and training of personnel to meet national emergency; the
Department of Labor in regard to employee radiation exposure and work-
men's compensation; the Department of Commerce regarding transportation
of radioactive materials; the Federal Radiation Council in regard to permis-
sible radiation exposure levels, and others. See Staff of the Joint Committee,
supra note 65, at 35-150.

\(^3\) i.e., radium and polonium, x-ray apparatus, and accelerators and accelerator
produced radioactive materials.
Two factors are of particular importance to a statement of the case for broad federal pre-emption in the atomic energy field: (1) the very substantial responsibility to protect the public health and safety from the hazards associated with the use of ionizing radiation is the result of a complex technology, initially developed and controlled by the federal government; and (2) the federal program directed at regulating the utilization of the peaceful atom is the broadest and most comprehensive program for protecting public health and safety against the hazards associated with specific activities that has been attempted in the United States.

The first of these factors distinguishes the atom from the other subject areas of pre-emption, because in those areas the competing interests developed simultaneously. In growing, twentieth century America, local regulation of commerce came to have an increasingly substantial impact on interstate commerce; and labor-management relations evolved into multi-state proportions, while some aspects of these relations remained peculiarly local in character.

The second factor indicates another difference between federal-state relationship in the atomic energy area, and in those areas in which state action has been tolerated in the interest of public health and safety. That is, in precedent controversies, federal inaction in the subject area was the basis for permitting state action. In regulating the use of atomic energy, the fact of conflict would presuppose the exercise of dual regulatory authority.

Therefore, the case for defining broadly the scope of pre-emption in the atomic energy field is at least as compelling as that which exists in other areas of federal-state conflict related to public health and safety.

The case against broad scope of pre-emption

The case against broad federal pre-emption is based upon four arguments: (1) the interest of the state in public health and safety is so important that the state is not to be precluded from exercising regul-
latory authority; (2) there has been extensive state regulation in particular areas; (3) uses to be regulated, other than those originating under the federal program, present hazards which are substantial; and (4) some areas of regulation are of local effect.

The issue is not so much one of precluding the state from regulating as it is one of balancing the interests of an over-all program against interests local in nature. The states are encouraged to participate in AEC licensing proceedings. Procedure exists for petitioning the Commission to amend its regulations. And the Act affords a basis for AEC withdrawal from certain areas of regulation and for state assumption of exclusive regulatory authority in these areas.

The tradition of state licensing of radium, of x-ray equipment and of accelerators and accelerator produced radioactive materials is a fact of history. One cannot readily deny the tacit recognition of state action in these areas. But this fact does not negate the existence of a defined and extensive federal regulatory program.

That there are substantial hazards to be regulated other than those developed under the federal program is forcefully expressed in the following excerpt from testimony before the Joint Committee on Atomic Energy on the federal-state cooperation amendment to the Act.

Representative DURHAM. It was brought out here yesterday that 95 percent of the irradiation is coming from X-ray machines and all kinds of tools throughout the country, and only 5 percent of it is emanating from the atomic energy industrial operation at the present time. So the States do have a great responsibility. We have never thought of controlling it at the Federal level, such as telling a man how to use an X-ray machine.

Mr. HYDEMAN. There is no question that a considerable part of the total radiation problem presently is a State responsibility and with respect to X-rays my impression has been that the medical and dental associations themselves have done a good deal to educate their professions on the proper use and handling of these devices. I suspect with such machines as X-rays that the problem is much more a problem of education than it is of regulation, and I think this is an area where the States have been particularly good.

It is suggested that the cumulative magnitude of actual exposure is not the basis for quantifying the need for regulation in the interest

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85 10 C.F.R. §2.101(b) (1967), requires that the governor of the state in which a facility is to be constructed be served by the applicant with a copy of the application; and 10 C.F.R. §2.104(b) (1967), requires that AEC timely notify the governor of the public hearing.
86 10 C.F.R. §2.802 (1967).
of public health and safety; rather, it is the degree of care that need be exercised to minimize hazard from the proposed use. Some of the federally-licensed activities involve complex hazard considerations calling for design safeguards and safety research and development programs. Among the state licensed activities, training and education and the implementation of procedures for the handling of materials are the principal mechanisms for hazards minimization.  

The need to develop safety technology implemented through uniform regulatory practices requires a coordinated effort which might even justify expanding the scope of federal regulation.  

Finally, the predominantly local effect of some licensed uses is recognized by all parties to make desirable certain regulation at the state level. The question to be answered is whether over-all programmatic considerations justify federal supervision of basic policies and guidelines in this area.  

The final section of this analysis will be devoted to applying these considerations to an existing conflict.  

IV. BALANCING COMPETING INTERESTS IN THE FACE OF CONFLICT  

The conflict posited in this discussion arises from the action of the Public Service Commission of Wisconsin regarding the application of Wisconsin-Michigan Power Company to build a nuclear power plant. The certificate (construction permit) placed two conditions upon design of the plant which were intended to improve the system's capability to withstand the consequences of hypothetical accident situations. The action may be viewed either as independent review by the state of the adequacy of the design to protect public health and safety or as the imposition of additional safety conditions to those of the federal proceeding. Even by assuming that the conditions of the certificate are  

90 Of particular importance are the establishment of programs for training and education of personnel throughout the country, the dissemination of up-to-date information and statistics; and co-ordination of modification and amendment to rules and regulations.  
91 The action of the Wisconsin Public Service Commission was discussed before the Joint Committee on Atomic Energy in hearings on the Licensing and Regulation of Nuclear Reactors, April 4, 1967. The following excerpts from the testimony should be noted:  
Mr. Conway (Staff Director of the Committee): The point has been made, at least the Commission's position has been, that the Federal Government has pre-empted this area and hence the States do not have the authority to pass laws or impose restrictions.  
Mr. Price (AEC Director of Regulation): So far as radiation safety is concerned, that is right.  
Mr. Conway: I think it does raise the question if various states start imposing what they thought to be safety requirements and if they are not in compliance with AEC and what we believe to be the more learned area, it could have an adverse effect on safety.  
Mr. Price: That is correct.  
92 An application for a construction permit is presently pending before AEC,
compatible with the findings of the AEC licensing proceeding, the state action cannot be upheld if the Atomic Energy Act envisions a comprehensive program of federal regulation of radiation hazards associated with nuclear power plants.\(^\text{93}\)

The legislative history of the Act does not tell us what posture the AEC licensing program should have. The Act does tell us what AEC's programmatic licensing responsibilities are.\(^\text{94}\) The needed insight may be discerned by analysis of the effect of this dual exercise of regulatory authority upon AEC's capability to comply with its charter.

Such approach requires familiarity with the AEC licensing procedures for nuclear power plants. There is an informal site evaluation wherein the applicant discusses with AEC's regulatory staff the suitability of the site or sites he is considering.\(^\text{95}\) This may occur before the filing of an application for construction permit. He then submits to the Commission a detailed description of the site selected and of the proposed design for the facility.\(^\text{96}\) These are accompanied by an analysis of the technical features of the project and evaluation of the adequacy of the design.\(^\text{97}\)

The analysis is reviewed by the regulatory staff and by the independent Advisory Committee on Reactor Safeguards (ACRS);\(^\text{98}\) the regulatory staff then prepares its own safety analysis.\(^\text{99}\)

A public hearing is conducted in the vicinity of the proposed project by an atomic safety and licensing board.\(^\text{100}\) The public is invited to attend and interested persons may participate as parties to the proceeding.\(^\text{101}\) After the hearing the board renders an initial decision\(^\text{102}\)

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\(^\text{93}\) Docket No. 50-266. No action has yet been taken regarding the issuance of a construction permit.


\(^\text{96}\) This step is not required by AEC regulations, but has been undertaken in most cases because it is of mutual interest to both the applicant and the regulatory staff.

\(^\text{97}\) The description and accompanying analysis must encompass all subject areas bearing upon protection of public health and safety; some of the more prominent are reactor engineering, core physics, fluid dynamics, materials analysis, thermodynamics, geology, seismicity, hydrology, structural analysis and health physics; See 10 C.F.R. §50.34 (1967).

\(^\text{98}\) This evaluation includes analysis of the effectiveness of engineered safeguards to prevent accident and to limit the consequence of possible accident and of the ability of the proposed design to withstand hypothetical accident conditions.

\(^\text{99}\) The ACRS is an independent body of 15 persons from outside AEC, each expert in a technical discipline relating to reactor safety. The Act requires ACRS review of the design of all power reactors. Atomic Energy Act §29, 182b, 42 U.S.C. §2039 (1964) and §1826, 42 U.S.C. §2223b (1964). The ACRS comments by letter upon the adequacy of the design. This letter is introduced in evidence at the public hearing.

\(^\text{100}\) The board consists of 3 persons; two have technical expertise and the chairman is trained in law or administration. Atomic Energy Act §189a, 42 U.S.C. §§223a, 2241 (1964).

\(^\text{101}\) See 10 C.F.R. §§2.104(b), 2.714 (1967).

\(^\text{102}\) See 10 C.F.R. §2.760 (1967).
which is reviewed by the Commission on appeal or on its own initiative.\textsuperscript{103} Favorable disposition results in the issuance of a construction permit.\textsuperscript{104}

AEC inspectors visit the facility during construction;\textsuperscript{105} and upon its completion, essentially the same review process is repeated except that a public hearing is not mandatory for the issuance of an operating license.\textsuperscript{106}

Perhaps the most striking fact that emerges from this description is that the AEC licensing procedures are multifaceted and costly. Individual state departments of health are not in a position to undertake this thoroughness of review. As the instant case exemplifies, the state action focuses upon specific "problem areas" rather than stressing over-all design.

Such an approach may imply a substantial cost penalty to the applicant, with, perhaps, little return in terms of over-all plant safety. While cost is not a determinant in any formula for measuring adequacy of design from a safety standpoint, to preclude cost evaluation in consideration of safety alternatives is to purchase, at a high price, resistance to design modification in the interest of safety. One cannot stress too strongly, the importance of the manufacturer's co-operation in assuring the proper regard for safety. However thorough the regulatory process, it cannot surmount the necessity for reliance upon the manufacturer to keep updated the evaluation of his design and to incorporate the design specifications and quality control into the facility.

Having paid brief homage to what is perhaps the most important aspect of a safety regulatory program, it is important to specify what such a program should provide. Major objectives are to: (1) provide technical competence; (2) maintain consistency of approach; (3) promote improvement of over-all design; (4) keep the public informed; (5) inspect and enforce; and (6) afford appropriate safeguards.

1. Technical competence

The first necessity is for adequate staffing of persons trained in a variety of disciplines and for the supply of support equipment. Not only is this a costly process, but there is an acute shortage of highly skilled personnel. Extensive use need be made of consultant experts; and there must be in-house competence to prepare the subjects for study by consultants and to evaluate their subjective and expert opinions.

If future staffing requirements are to be met, a far-reaching program of training and education should be promoted and supported through scholarships and grants.

\textsuperscript{103} See 10 C.F.R. §2.764 (1967).
\textsuperscript{104} \textit{Ibid}.
\textsuperscript{105} 10 C.F.R. §50.70 (1967).
\textsuperscript{106} 42 U.S.C. §2239a (1964).
There need be accumulated extensive informational sources, including research papers, technical studies, material properties analyses and test data, and reactor analyses and operating data.

Finally, these resources must be coordinated so that this competence may effectively be utilized.

2. Consistency of approach

If each reactor was an entirely novel design, and was reviewed without regard to the experience developed within the industry, it would be difficult to justify design improvements. A language is needed for comparing those concepts and designs which have been proof-tested with the modifications proposed. The language is the expression of technical support data through criteria, standards and codes. It needs continuously to be up-dated, so that full advantage may be taken of safety developments.

With a common language, reactor design, or aspects thereof, may be standardized. This not only facilitates review of design adequacy, but makes feasible more broadly based and substantial safety research and development efforts.

To promote industrial interest in updated safety design, it is necessary to provide an approach to reactor safety on which the industry may place reliance in programming its development efforts. A consistent approach is also needed with regard to support services, such as storage and transportation of radioactive materials.

3. Improvement of over-all design

As design improvements are developed, it is important that they be included in new reactors. This has resulted in some difficulty and expense to utility applicants presently before AEC, who complain that construction permits have been issued for other reactors of like design without these additional features. There is not inherent in AEC's position, the judgment that the reactors would be inadequately safe without these features. Rather, the policy judgment has been made that adequacy of design for safety requires the fullest feasible implementation of safety technology currently available. For this approach to be workable, the implementor must have confidence in the integrity of the proposer and must be satisfied that acceptance of the proposal will not result in harrassment.107

107 That is, the implementor will not be subjected to unexpected and unreasonable additional requirements, either at the federal or state level, if he acquiesces in incorporating the suggested design modifications. The instant case illustrates this point. The state reads of an idea for certain design improvements, perhaps from letters of the ACRS, whose opinion is highly regarded both within and without AEC. Reference is made to improved core spray systems in the ACRS letters in Indian Point 2, Docket No. 50-247, Dresden 3, Docket No. 50-249, Quad-Cities 1 and 2, Docket No. 50-254 and 50-265, and Palisades, Docket No. 50-255; and to the "core-catcher" concept in Indian Point 2. The state without having been privy to the philosophy behind the design modifications, establishes as conditions to the certificate, design modifications in these
The difference between the above approach and the _ad hoc_ addition of "gadgets" should be emphasized. Increased redundancy is not always synonymous with increased safety,\textsuperscript{108} and increased complexity may be inconsistent with good design.\textsuperscript{109}

Coordination between the regulators and the design engineers permits direction of safety development efforts toward maximum improvement in over-all design. Toward this objective, there may now be emerging cooperative efforts between AEC's regulatory staff and the divisions of its management staff involved in research and development efforts related to reactor safety,\textsuperscript{110} perhaps with industry participation; and use might possibly be made of facilities and personnel at the national laboratories.

4. _Public information_

The public has a vital interest in the development of the nuclear industry, both from the standpoint of insuring for its health and safety and learning what benefits the atom may offer the community. Bringing to the public the opportunity to see the magnitude of precautions taken in licensing a nuclear power plant is possibly the most important function of the AEC mandatory hearing requirement. Education of the public, and stimulation of public interest in projects using the atom is an important part, not only of promoting the development of atomic energy, but of introducing responsible concern, other than that of AEC and the equipment manufacturers and purchasers, into the licensing formula. In this regard, it is particularly appropriate to encourage state participation in the AEC licensing proceeding.

5. _Inspection and enforcement_

Adequately trained personnel and procedures for frequent and thorough inspection of licensed facilities, coupled with enforcement capability are essential support mechanisms for regulator-licensee cooperation.\textsuperscript{111}

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\textsuperscript{108} THOMPSON AND BECKERLY, I THE TECHNOLOGY OF NUCLEAR REACTOR SAFETY, at 290-299 (1964).

\textsuperscript{109} See remarks by Milton Shaw, Director, Division of Reactor Development and Technology, USAEC, at the 1966 winter meeting of the American Nuclear Society, Pittsburgh, Pa., November 2, 1966 entitled "AEC Views on Quality Assurance in the Civilian Reactor Program."


\textsuperscript{111} This cannot be accomplished without (1) programs for training and education which teach the most up-to-date information and are available to the broadest possible scope of inspector personnel; (2) effective enforcement resources including investigations, support equipment and the means for getting to the people and places in various parts of the nation that may be affected by a license violation; and (3) the adoption of a strong, uniform approach as a deterrent to license violation.
6. **Appropriate safeguards**

Assurance against diversion of materials and data of importance to national security, appropriate procedures regarding accountability for radioactive materials, and prevention of disclosure of proprietary information, among others, are also important concerns of a regulatory program.

To realize these objectives, a regulatory program needs also to scrutinize itself and to be capable of adjustment. Procedures should be studied and modified so as to be responsible to the needs of an advancing technology, while promoting concern for public health and safety. Rules and regulations continuously need revision or amendment.

**Observations and Conclusions**

It is not intended to suggest that AEC has fulfilled all the objectives stated in the Act. However, the AEC licensing program is a thorough and energetic attempt to cope with an extremely complex, and increasingly burdensome task.

Considerable effort and concern have been spent in attracting competent technical personnel to the AEC program. This has not been an easy task, since demand far exceeds supply. The Commission, through support of university and special training programs, is attempting to assure adequately trained staff support to meet increasing staffing requirements.

A concentrated effort toward the development of criteria, standards and codes is being undertaken. The regulatory staff was reorganized in February, 1967 and a new division of reactor standards was established. The information now being derived from review of the markedly increased number of light water nuclear power reactors of similar design will provide the needed experience for effective standards development.

The desire for standardization and the mutual interest of AEC, the manufacturers and the utilities in improved design have made possible the exploration of new avenues for co-operative endeavors in research and development relating to improved safety. Areas of particular interest are earthquake resistant design, improved siting, and development of engineered safeguards against loss of core coolant.

Finally, there has never been a radiation injury to a member of the public resulting from the operation of a nuclear reactor licensed under the AEC regulatory program.112 This impressive safety record, coupled with the level of interest shown by the Commission and the industry toward initiating design improvements in the interest of safety, and in

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112 Testimony of James T. Ramey, Commissioner, USAEC, before the House Committee on Interior and Insular Affairs, Subcommittee on Irrigation and Reclamation on H.R. 207 and S. 270, February 28, 1967, transcript at 112.
streamlining the AEC licensing procedures are the best indicia to date of the effectiveness of the AEC regulatory program.

The foregoing is thought to demonstrate that independent state licensing would retard the effectiveness of AEC in meeting its responsibilities under the Atomic Energy Act. Where the AEC finds itself limited by lack of resources or manpower, independent state licensing authorities would be less well equipped. AEC-manufacturer–utility cooperative efforts at design improvements and at standardization would be hampered by the existence of dual regulation. The public would likely see and understand less of the complexities of a reactor safety program as a result of variegated proceedings. Proprietary information might be compromised, and the cost of the licensing process might reach such proportions as to retard the development of this major new resource.

It is concluded that the scheme of federal licensing established by the 1954 Act necessitates preclusion of state regulation of radiation hazards associated with nuclear power plants, if the objectives of the Act are to be realized, and that the state does itself and the public a disservice if it fails to provide a valuable contribution to the licensing process through participation in the AEC proceeding.

The broader question as to the scope of exclusion of the states from licensing action in the atomic energy field will not be answered here. Suffice it to note that the primacy of federal licensing authority may depend to a considerable extent upon the level of federal interest in the licensed activity. This author believes that the program of AEC-state agreements for transfer of jurisdiction is an effective and congressionally sanctioned expression of that interest.