William & Mary Law Review

Volume *15 (1973-1974)*
Issue 3 *Symposium: The Nuclear Power Plant Licensing Process*
Article 4

March 1974

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NUCLEAR POWER PLANT STANDARDIZATION: PROMISES AND PITFALLS

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Current national energy policy indicates the need to reduce by nearly one-half[1] the nine to ten years presently required to design, license, and construct a nuclear power plant.[2] A significant means of achieving greater efficiency in the licensing process without sacrificing careful evaluation of proposed plants involves the identification and separate treatment, ideally in a single proceeding, of issues common to most plants. With generic issues isolated, the licensing of an individual plant can focus on questions unique to that facility. In implementing a standardization policy,[3] the Atomic Energy Commission (AEC) has recognized the desirability of a generic approach to the licensing of nuclear power plants, an area in which issues tend to be complex, the number of qualified experts relatively small, and separate technical review proceedings frequently repetitive.

Development of a nuclear power plant from conception to operation currently includes the following successive stages: site evaluation and selection, plant selection and design, environmental impact analysis by

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1. President Nixon has directed that efforts be taken to reduce the licensing and construction cycle to five or six years without compromising safety and environmental standards. 120 CONG. REC. S 369 (daily ed. Jan. 23, 1974).

2. This lead time is divided approximately into the following periods: two years for design selection, preapplication site reviews, and preparation of the application; two years for construction permit reviews, including public hearings; and five to six years for construction and possible operating license hearings after the construction permit is granted. Muntzing, *Standardization in Nuclear Power*, 15 ATOM. EN. L.J. 21, 27 (1973).

3. The policy itself is enunciated generally in two AEC policy statements: Commission Policy Statement on Standardization of Nuclear Power Plants (Apr. 28, 1972), and Statement on Methods for Achieving Standardization of Nuclear Power Plants (Mar. 5, 1973). The AEC also has employed a generic approach to resolving safety and environmental questions in recent rulemaking proceedings. *See* Acceptance Criteria for Emergency Core Cooling Systems for Light-Water-Cooled Nuclear Power Reactors, Docket No. RM 50-1; Effluents from Light-Water-Cooled Nuclear Power Reactors, Docket No. RM 50-2; Environmental Effects of the Uranium Fuel Cycle, Docket No. RM 50-3; Environmental Effects of Transportation of Fuel and Waste to and from Nuclear Power Reactors, RM 50-4. Presumably, this approach will be merged eventually with the "standardization" mechanisms now being considered.

the AEC staff, preliminary design safety evaluation by the AEC staff and the Advisory Committee on Reactor Safeguards (ACRS), construction permit hearings, plant construction, final evaluation of design safety and environmental impact, and, where required, an operating license hearing.[4] It is generally accepted that considerable savings in administrative review for a particular facility could be achieved[5] if a major portion of the total plant[6] utilized a previously approved design.[7] Further savings could be realized if sites, as well as plant designs, received prior generic approval.[8]

While the benefits of standardization are evident and acknowledged, potential problems exist. There are, of course, technological-economic problems, such as developing system designs which can satisfy various siting criteria;[9] deciding the extent to which components rather than criteria should be standardized; and defining interface requirements to provide compatibility between a standardized system and the remainder of an individual plant, as well as among the components of the standardized portion itself.[10] More fundamental, however, are concerns that

4. Portions of this process may overlap. For example, staff review of the final design and the operating license hearing can be completed during the plant construction phase. The process, nevertheless, is largely sequential.

5. It has been estimated that standardization alone should reduce the development cycle by approximately two years, primarily by reducing the time required for design selection and construction permit approval, and ultimately for actual construction. Muntzing, *supra* note 2, at 27.

6. One of the fundamental questions involved in the AEC's standardization policy is the portion of the nuclear power plant which should be the subject of the special "standardized" licensing regime. A special staff Task Force has recommended that the Commission's ultimate objective should be to require that applications for approval of standardized designs encompass at least the safety complex of the plant, which includes the containment design, auxiliary building, control building, diesel generator building, and radioactive waste building. Atomic Energy Commission, Report to the Director of Regulation by the Task Force for the Study of the Reactor Licensing Process 22 (Dec. 1973) [hereinafter cited as Task Force Report].

7. Use of standardization mechanisms also could result in better utilization of the nation's limited number of nuclear experts, as well as the experience of the nuclear power industry in design, manufacture, construction, and operation of plants.

8. This possibility is also under serious consideration by the AEC. Remarks by William O. Doub, Atomic Industrial Forum Annual Conference, San Francisco, Calif., Nov. 12, 1973.

9. *Hearings Under 42 U.S.C. § 2252 Before the Joint Committee on Atomic Energy*, 93d Cong., 2d Sess. (1974) (statement of Harry O. Reinsch, Bechtel Power Corporation).

10. Task Force Report, *supra* note 6, at 3-14. Perusal of invitations to bid currently being let by utilities reveals the complexity of some of these problems.

standardization may lead to fewer advances in the areas of safety and reliability, a decrease in the competitive nature of the industry, and a lessening of effective public participation in licensing proceedings. This Article will focus on these issues and suggest methods by which the AEC can minimize adverse effects of standardization while continuing to pursue its benefits.[11]

Licensing Options Under the Standardization Policy

After receiving nuclear power industry suggestions concerning methods for ordering regulatory priorities in the review of generic plant features,[12] the AEC announced in March 1973 that it was prepared to consider applications for review and licensing of standardized designs for nuclear power plants and major plant systems.[13] It described three procedural options and promised that "priority in scheduling and additional experienced staff manpower" would be accorded applications conforming to any one of the options.[14]

11. At this writing, the concepts underlying the approaches by the AEC and the nuclear industry to standardizing nuclear power plants continue to evolve rapidly. There is considerable discussion concerning the impact of standardization in terms of designs, components, systems, and techniques; and no definition of a "duplicate" unit, system, or component has gained general acceptance. Time and experience with new licensing applications will be required before these matters can be resolved. Standardization is one of the elements in proposed reforms of the AEC's licensing program contained in bills introduced by Congressmen Price, H.R. 11957, 93d Cong., 1st Sess. (1973), and McCormack, H.R. 12823, 93d Cong., 2d Sess. (1974). In addition, proposed licensing amendments by the AEC (H.R. 13484, 93d Cong., 2d Sess. (1974), introduced by Congressman Price, by request) address the standardization question directly. *See* Shapar & Malsch, *Proposed Changes in the Nuclear Power Plant Licensing Process: The Choice of Putting a Finger in the Dike or Building a New Dike*, 15 Wm. & Mary L. Rev. 539 (1974).

12. On April 28, 1972, the AEC issued a formal statement encouraging efforts of the nuclear industry toward increased standardization. The statement indicated generally that "priority consideration" would be given to activities leading to greater standardization of nuclear power plants and encouraged utility companies, as the owners of the plants and thus those who could be expected to receive the most direct benefits, to assume "the leadership role" in suggesting methods for ordering regulatory priorities in the review of standardized plants and plant components. This statement, it should be noted, was an outgrowth of earlier Commission pronouncements over a number of years encouraging development of codes and standards.

13. AEC News Release No. R-85 (Mar. 5, 1973).

14. Atomic Energy Commission, Statement on Methods for Achieving Standardization of Nuclear Power Plants 3 (Mar. 5, 1973) [hereinafter cited as AEC Statement]. On March 21, 1974, AEC Director of Regulation Muntzing suggested a fourth option called "replication" in testimony before the Joint Committee on Atomic Energy. *Hearings on Nuclear Power Plant Siting and Licensing Before the Joint Comm. on Atomic Energy*, 93d Cong., 2d Sess. pt. 1 (1974) (statement of L. Manning Muntzing).

Under the first option, the reference system concept, an applicant is permitted to seek approval of a design for either an entire facility or a major portion thereof.[15] Once a standardized design receives AEC approval, a subsequent application for licensing of an individual plant need only reference the design. Further radiological safety review would be limited to examination of the selected site in terms of its compatibility with the site parameters utilized in the standardized plant design, review of any non-standard design features, and an environmental impact analysis in accordance with the National Environmental Policy Act of 1969.[16] It has been recommended that the reference system option, in conjunction with a system of preselected sites, become the principal vehicle for reducing licensing and construction time.[17]

The second option, the duplicate plant concept, envisions a single review of license applications from one or more applicants for the construction and operation of duplicate plants at more than one site. As with the reference system option, individual site-related characteristics would be addressed separately, but the facility design would undergo a single review. Thus, to a certain extent, the duplicate plant concept is an effort to take full advantage of what would occur otherwise on an ad hoc basis, namely, accelerated review of a design used on a previously licensed plant.[18]

15. When the AEC first announced that it was prepared to accept applications under its standardization policy, it attempted to restrict applications to "the entire facility, the nuclear steam supply system alone or in conjunction with containment, or the containment alone." *Id.* at 5. Acceptance of applications covering other parts of the facility were to depend upon "the availability of specialized manpower and the relative importance of the system to the safety of the plant." *Id.* at 5-6. Although a Task Force report envisions reference designs as ultimately encompassing the "safety complex" of nuclear plants, the scope of the systems which can or should be the subject of standardized design applications remains an open policy question at this time. *See* note 6 *supra.*

16. 42 U.S.C. §§ 4321-4347 (1970). If a previously designated site is used, a site suitability evaluation, including a NEPA analysis, will already have been completed. Task Force Report, *supra* note 6, at 17-21.

17. Task Force Report, *supra* note 6, at 13-16. All four light-water-cooled reactor vendors have either filed applications under the reference system option or have indicated their intention to do so. Remarks by A. Giambusso, Atomic Industrial Forum Workshop on Reactor Licensing and Safety, Tables 1 and 2, Dec. 13, 1973. A number of architect-engineering firms have also indicated their intention to file standardized designs under this option. *Id.*

18. Commonwealth Edison has already submitted an application under the duplicate plant option covering four identical plants to be built in pairs at locations some fifty miles apart. Commonwealth Edison Company (Braidwood 1 and 2, Byron 1 and 2), Docket Nos. 50-454, -455, -456, & -457. In addition, five participating utilities forming the Standardized Nuclear Power Plant System (SNUPPS) presently plan to file an

The third option, the license to manufacture, is thus far the only standardization mechanism for which new regulations have been proposed and adopted.[19] It is similar in concept to the reference system option, except that construction of the plant takes place at a location other than the eventual plant site. Present application of this option would appear to be limited to barge-mounted power plants.[20]

Safety Implications of Standardization

One of the more important benefits of increased standardization anticipated by the AEC is the enhancement of reactor safety.[21] Standardization should result in better utilization of existing AEC manpower by permitting concentrated staff effort on in-depth evaluation of standardized systems and resolution of generic safety-related issues.[22] In addition, experience gained in construction, start-up, and operation of a particular design will be applicable to all plants utilizing that design.

Despite the more efficient initial review procedures possible under standardization, questions can be raised about the tendency of increased standardization to create less, not greater, assurance of the most advanced safety design. Arguably, such a result could occur if equipment vendors and architect-engineering firms are deterred from incorporating newly developed safety features into previously approved plant models. Besides incurring additional review costs, these firms might jeopardize their ability to attract potential purchasers by proposing alteration of standardized models to incorporate changes with unknown ramifications. It should be noted, on the other hand, that the present licensing process itself offers significant disincentives for design changes. The potential

application covering six plants. Remarks by R. Koprowski, Atomic Industrial Forum Workshop on Reactor Licensing and Safety, Dec. 13, 1973.

19. 38 Fed. Reg. 30251 (Nov. 2, 1973). The AEC has recently released for comment proposed regulations for the reference system and duplicate plant options. 38 Fed. Reg. 13668 (Apr. 16, 1974).

20. Task Force Report, *supra* note 6, at 3-9. Offshore Power Systems, Inc., a joint venture of Westinghouse and Tenneco, presently is seeking a license to manufacture eight standardized barge-mounted plants at a shipyard-like facility near Jacksonville, Florida. 38 Fed. Reg. 34008 (Dec. 10, 1973).

21. AEC Statement, *supra* note 14, at 2-3.

22. While present intense efforts have enabled the regulatory staff to conduct thorough safety reviews for each reactor application, improved efficiency in the utilization of AEC review resources is becoming increasingly necessary as the number of operating plants and license applications mounts. As of December 31, 1973, there were 42 plants licensed to operate, 56 being built, and 101 on order. AEC News Release No. T-38 (Jan. 29, 1974).

for substantial delays in the various licensing stages presents a considerable deterrent to vendors and architect-engineers to propose even the most beneficial changes, since no utility wishes to have its facility delayed while a test case is made of its application. The situation, indeed, would probably be improved by separating design approval from the licensing of individual plants. In any event, there are indications that the AEC will limit its approval of standardized designs to a specified period in an effort to accommodate technological and economic changes.[23]

Apart from the interrelationship of the AEC regulatory staff with the utilities, vendors, and architect-engineers, the position of intervenor groups under the standardization policy must be considered. Under the present "custom" licensing process in which each application is subject to a de novo safety evaluation, intervenors are afforded an opportunity to insist at every such review upon incorporation of design changes that may offer only marginally greater assurance of protection. The applicant's desire to expedite the review process may induce it to accept or at least negotiate the intervenors' proposals. Once a standardization design has been approved, however, the AEC has stated that it will require only those modifications which provide substantial additional protection.[24] Furthermore, if a standardized design receives prior generic approval, the issues which intervenors raise at subsequent individual licensing proceedings could be severely restricted.[25]

Intervenors may object to the loss of their leverage which a change in the present system would entail. On the premise that pressure from intervenors in specific hearings has actually resulted in significant safety improvements, it is at least arguable that changing the system could lessen the assurance of plant safety. Nevertheless, standardization would permit intervenors to concentrate their limited technical and financial resources in a single consolidated proceeding affecting generic features of a number of power plants. By thus focusing their efforts, inter-

23. The AEC Director of Regulation has stated that "four or five years would seem to be a reasonable length of time over which to freeze a final design." Remarks by L. Manning Muntzing, Atomic Industrial Forum Workshop on Reactor Licensing and Safety 6, Dec. 13, 1973.

24. Remarks by A. Giambusso, *supra* note 17, at 5.

25. *See* notes 45-49 *infra* & accompanying text. It is debatable whether intervenor participation has, in fact, resulted in significant safety improvements in the design of specific plants. *Compare Hearings on Nuclear Power Plant Siting and Licensing Before the Joint Comm. on Atomic Energy*, 93d Cong., 2d Sess., pt. 1 (1974) (statement of Harold P. Green, George Washington Univ. Nat'l Law Center) *with* Gulf States Util. Co. (River Bend Station, Units 1 & 2), ALAB-183, at 11-13 (Mar. 12, 1974).

venors could contribute to nuclear safety in the most timely and effective manner.[26]

Increased standardization clearly is necessary if the present level of safety review is to be maintained in the face of the growing number of nuclear power plant applications. It remains open to question, however, whether a licensing process entailing a generic approach to plant design can actually enhance the level of review of safety considerations afforded by current procedures.

Effect on Competition

Section 1 of the Atomic Energy Act, as amended, states the policy of the United States that "the development, use, and control of atomic energy shall be directed so as to . . . strengthen free competition in private enterprise."[27] Legislative intent is further evidenced in section 3, which expresses the congressional desire for a program "to encourage widespread participation in the development and utilization of atomic energy for peaceful purposes,"[28] and in section 105, which states directly that nothing contained in the Atomic Energy Act can relieve a person from the operation of the antitrust laws[29] and requires the AEC to report promptly to the Attorney General any information which might indicate a restriction of competition in the atomic energy industry.[30] In view of this clear congressional mandate, the Commission, in implementing a standardization policy, must be particularly mindful of potential anticompetitive effects.

Competition in the nuclear power industry is rather restricted, and a significant increase seems unlikely. There presently are only five manufacturers of nuclear steam supply systems[31] and only 13 active architect-

26. Intervenors may insist that the standardized designs be the "safest" among various alternatives. Contrary to the desires of some intervenors, however, it is not the responsibility of the AEC to ensure that a design is necessarily the safest, but only to certify that the design adequately protects public health and safety. 42 U.S.C. § 2133(d) (1970); Wisconsin Electric Power Co. (Point Beach Nuclear Plant, Unit 2), WASH-1218 (Supp. 1) 517, 528 (Nov. 10, 1972). Once that decision is made, and the right is reserved to require incorporation of newly developed safety features which provide substantial additional protection, there should be no need for the constant "fine-tuning" which the present review process tends to encourage.

27. 42 U.S.C. § 2011(b) (1970).

28. *Id.* § 2013(d).

29. *Id.* § 2135(a).

30. *Id.* § 2135(b).

31. Of these, four offer light-water reactors, while only one markets the high-temperature gas-cooled reactor.

engineering firms. Component manufacturers and vendors are similarly limited.[32] In such a highly concentrated market, the possibility that standardization might accentuate anticompetitive forces takes on increasing importance.

Recognizing its responsibility to foster competition, the AEC has sought to counter some of the potentially anticompetitive aspects of its new policy. Because a vendor with an approved design will enjoy a marketing advantage over one whose model is still being reviewed, the Commission has pledged priority and expeditious review to initial submittals to achieve some parity among the vendors' design offerings.[33] Furthermore, to maintain the competitive opportunities of equipment suppliers and vendors, staff requirements for plant materials and components will be in the form of design criteria, rather than specified products, wherever possible.[34]

Although these actions of the Commission are commendable, potential obstacles to increased competition as a result of standardization remain. Of particular concern is the AEC's apparent intention to restrict the number of standardized applications it accepts for review. In the staff study which accompanied the Commission's statement implementing standardization, it was suggested that "reasonable assurance should be provided that the design will be applied to several units" before it is accepted for review.[35] Similarly, a recent AEC Task Force report recommended that standardization applications be limited to those which have "reasonable commercial utilization or demonstrate improvements in safety."[36] The anticompetitive consequences which would follow upon adoption of these suggestions are obvious, inasmuch as smaller industry members and potential entrants would find it diffi-

32. A survey of vendors in the power reactor field revealed the following: Of 67 plants surveyed, 80 percent of the pressure vessels were supplied by three companies; of 37 plants surveyed, 70 percent of the reactor internals were supplied by two vendors; of 105 orders placed for piping for 55 plants surveyed, 60 percent of the orders were filled by five vendors; of 132 orders placed for safety-related pumps for 50 plants surveyed, 90 percent of the orders were filled by five companies; of 202 orders for safety-related valves for 50 plants surveyed, 60 percent of the orders were filled by seven companies; and of all plants surveyed, the pressurizers and steam generators were provided by only three companies. Task Force Report, *supra* note 6, at 4-12 to 4-13.

33. It has been indicated that at least initially the AEC will not accept a second standardized submittal from a firm without giving priority to firms with initial submittals. Remarks by A. Giambusso, *supra* note 17, at 6.

34. *Id.* Restrictive specifications can, of course, amount to the designation of a particular vendor without explicitly naming that vendor.

35. AEC Statement, *supra* note 14, at 6.

36. Task Force Report, *supra* note 6, at 22.

cult to provide the desired assurances. Not so obvious, however, are the purported benefits to the licensing process of placing limitations on standardization applications. While such restrictions should tend to conserve regulatory manpower by limiting the number of applications, it is not clear that the substantial investment entailed in preparation of a formal standardization application will not accomplish the same objective without necessarily favoring established industry members. Enforcement of such restrictions also raises significant questions. Will letters of intent or actual contracts from utilities be required for an application? Or will the AEC itself determine the commercial marketability of a particular design, as the Task Force report appears to suggest?[37] The proposed restrictions have drawn considerable criticism throughout the industry[38] and should be seriously reconsidered by the Commission.

Other anticompetitive effects could result depending upon the ultimate course of the Commission's standardization policy. One study has recommended that utility applicants eventually should be required to reference a standardized design "except for good cause shown"[39] and that the standardized design itself ultimately should encompass at least the entire plant safety complex.[40] Because the safety component of a nuclear plant generally has been the product of two entities, the nuclear steam system suppliers and the architect-engineers, such a requirement might well lead to vertical integration in the nuclear power industry.[41] Similarly, competition might be disrupted if various industry members combined to make applications under any of the three standardization licensing options.[42] Indeed, it is conceivable that the duplicate plant option will prove so popular that the market for smaller suppliers will shrink seriously, increasing entry barriers. This possibility is substantially diminished by the difficulties inherent in arranging for a number of utilities to build duplicate plants at different sites.

The potential anticompetitive effects of standardization strongly suggest that the AEC should seek the assistance of the Justice Department in formulating its new policy. Such assistance is particularly

37. *Id.*

38. *See, e.g.*, Letter from Atomic Industrial Forum, Inc., to AEC Director of Regulation, Dec. 10, 1973.

39. Task Force Report, *supra* note 6, at 11.

40. *Id.*

41. The Task Force report readily admits this possibility. *Id.* at 4-13.

42. The Justice Department's Antitrust Division, however, has provided a favorable business review letter for the SNUPPS arrangement (*see* note 18 *supra*).

critical in light of the probability that industry members associated with plant design and supply will be unable to rely upon the AEC's standardization policy, as implemented, as a defense to charges of refusal to compete or agreement to limit competition.[43] Antitrust policy, of course, is not always dominant;[44] it must, in many cases, be balanced against competing social goals, such as the need for improving the process of licensing nuclear plants. Although Justice Department participation in developing and implementing standardization policy would not eliminate every potential pitfall, it would help ensure that anticompetitive aspects receive thorough consideration and that AEC policy represents the proper compromise between effective regulation and active competition.

Standardization and Public Participation

Section 189(a) of the Atomic Energy Act, as amended, requires that the AEC grant a hearing to any person "whose interest may be affected" by the "granting, suspending, revoking, or amending of any license or construction permit...."[45] Standardization in power plant licensing raises public participation issues with respect to foreclosure of generic issues, public notice, and intervenor standing.

Under current procedures, the AEC, before issuing a construction permit or operating license, publishes a notice of receipt of the application and affords interested parties the opportunity to participate in a public hearing. Implementation of standardization, however, is likely to result in significant changes in the licensing process. The AEC has several options, even under existing law, which it could utilize in approving a standardized design. It could, for example, hold a public rulemaking or adjudicatory hearing leading to a "generic" approval of a design. Alternatively, it could approve the standardized design on the basis of staff review and ACRS comments, reserving public hearings until applications for individual construction permits are filed.[46] The presence of transitional problems suggests that the Commission should

43. *See* note 29 *supra* & accompanying text. It is also possible that a dissatisfied vendor, architect-engineer, or component manufacturer might attempt to raise such concerns in a facility licensing proceeding, thereby leading to further delays for affected nuclear power plants. *See* 42 U.S.C. § 2135(c) (1970). *But see* H.R. Rep. No. 91-1470, 91st Cong., 2d Sess. 31 (1970).

44. *See* Silver v. New York Stock Exchange, 373 U.S. 341 (1963).

45. 42 U.S.C. § 2239(a) (1970).

46. The Task Force has recommended that both options be available to an applicant. Task Force Report, *supra* note 6, at 29.

permit a variety of procedures for approval of both standardized and custom designs.

If the Commission gave prior approval to a standardized design application, the details of the plant design should not be at issue in the individual construction permit hearings except to consider whether the plant actually conformed to the standard design or whether there were special circumstances which made the standard design inappropriate. Unless significant new information or other good cause existed to justify reconsideration of the previously resolved design issues, the construction permit hearing should be limited to a determination of site suitability relative to the standard design, as well as consideration of any nonstandard design questions.

Considering that the present practice of relitigating issues in successive cases is intolerable for all concerned, the policy behind foreclosure of previously resolved matters is clearly salutary. Indeed, to the extent consistent with due process, the AEC should apply such a policy to all licensing proceedings, not just to those involving standardized applications. If, however, eventual installation sites are unknown or unspecified when a standardized design is being approved, it will be difficult to determine who has standing to insist upon a hearing and, more significantly, what constitutes adequate notice to justify a refusal to reconsider plant design issues in subsequent proceedings.

The standing issue is perhaps the easier of the two to resolve: the Commission can and should err on the side of permitting intervention without waiving its right to require consolidation of parties with substantially the same interest.[47] To justify foreclosure of previously resolved issues, however, the Commission must be able to establish that it provided fair notice to all interested parties.[48] Although actual notice is not required, a substantial effort should be undertaken to reach as many likely intervenors as possible. In addition to utilizing the Federal Register, the AEC should notify directly citizen groups known to be interested in nuclear power plant development and should circulate public notices in areas which have a reasonable likelihood of becoming eventual installation sites. Unless such notice procedures are instituted,

47. *See* 10 C.F.R. § 2.715a (1973).

48. In this connection, see Brooks v. AEC, 476 F.2d 924, 927 (D.C. Cir. 1973), in which it was held that "elementary fairness as well as the clear language of section 189(a), demands that the Commission afford notice and an opportunity for hearing" before extending the completion date of a construction permit.

delays resulting from litigation of the foreclosure issue may detract substantially from the full potential of standardization.

Litigation about the rights of intervenors to contest the AEC's approval of standardized designs in the context of specific facility licensing hearings could, of course, be reduced if these rights were delineated more sharply by legislation.[49] In the absence of legislative reform, however, an overly ambitious attempt to narrow the scope of specific facility hearings might involve hapless applicants in a welter of controversy over the ambiguities of new regulations. Moreover, the pace of technological change itself militates against extreme foreclosure of standardized design issues. Until there is legislative change, the AEC should utilize the standardization concept primarily to increase efficiency of staff and ACRS evaluation of standardized designs by eliminating repetitive review in this component of the overall licensing process. Reducing the time and uncertainty involved in staff and ACRS review alone would constitute a significant improvement in licensing procedures.

Conclusion

Although greater standardization inevitably will be required in the nuclear industry, its impact will not be significant for several years. To the fullest extent consistent with conservation of regulatory manpower, the AEC should, for the present, implement a wide range of licensing options for nuclear power plant development. Discretionary alternatives are essential not only because of the inherent uncertainties in devising standardization procedures but also because of the great variety of circumstances which will confront applicants for facility licenses.

Standardization mechanisms clearly offer substantial potential for expediting and improving the licensing process. Immediate gains in efficiency may be achieved in the administrative process of staff and ACRS review. Despite the desirability of according generic treatment now to the concerns of intervenors, the possibility of serious delays resulting from efforts in this direction indicates the necessity for additional thorough consideration in the course of pending congressional hearings on licensing reforms.

49. In order to be most effective, such legislation would have to remove from the scope of judicial review the AEC's determination that there is no unresolved issue presented with respect to the standardized design.