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Conclusion

Given prior Oklahoma decisions, it is questionable that the Oklahoma Supreme Court would rely on only two Oklahoma cases, while dismissing all others, to arrive at the conclusion that there is no covenant for further exploration. The virtue of the separate covenant appears to greatly outweigh its faults. The lessee will not suffer any out-of-pocket loss by cancellation of his lease. The only duty involved is to drill or to surrender the nonproducing portion of the lease. There is also a strong policy against holding a lease solely for speculation purposes and in favor of developing all natural resources. Opponents of the covenant say that it may become a lease-breaking device and that it will force the lessee to become a wildcatter. These arguments are not persuasive because courts will not allow lease cancellation unless there is an unreasonable delay that is unjustified.

It is obvious that in circumstances where the lease covers a large area compared to the area that is being developed and there is either an unreasonable delay in exploring further, or a refusal to drill at all, the courts have allowed cancellation as to these unexplored portions of the lease without compelling the lessor to prove probable profitability of the additional wells. This is, in effect, judicial recognition of the implied covenant for further exploration without the standard of the prudent operator rule being applied. It appears that *Mitchell* was decided incorrectly in light of previous case law.

Vicki J. Vaniman

Public Utilities: Reducing the Burden of Nuclear Power Plant Abandonment

In the traditional scheme of utilities regulation, a state public utilities commission (PUC) is empowered to limit the rates charged by electrical utilities to their customers. The rate prescribed must be fair and reasonable to both the ratepayers and the utility.¹ Such limitations are a necessary adjunct to the protection of ratepayers because public utilities are normally franchised by the state and maintain a monopoly on the utilities market within the franchise area. The lack of extrinsically imposed restraints on the utility rate-making process could be disastrous for the ratepayers.

On the other hand, a public utility is entitled to a fair return on the value of its property used or useful in the public service. Rates that are insufficient to yield a fair return are unjust to the utility company and unreasonable. Enforcement of unreasonable rates by a PUC amounts to confiscation of private property in violation of the fifth and fourteenth amendments to the Constitution.²

1. AM. JUR. 2d *Public Utilities* § 135 (1972).

2. *American Toll Bridge Co. v. Railroad Comm'n*, 307 U.S. 486 (1939). The Court in this

The proper regulation of utility rates becomes increasingly difficult when utilities attempt to incorporate sophisticated nuclear technology into their generating facilities. The past decade has revealed an increasing number of environmental and economic problems attendant to the use of nuclear power as a domestic energy source. In addition, the economic and regulatory obstacles to the use of nuclear power have increased dramatically in the wake of the 1979 loss-of-coolant accident at Three Mile Island. Oklahoma's Black Fox generating plant was one of the casualties of the subsequent industry-wide reevaluation of the value of nuclear power.

This note will focus on the major economic factors that have escalated the costs of nuclear generating plants and how these costs are absorbed when such plants are abandoned. Because such costs are ultimately borne by ratepayers, the note will also survey statutory schemes that limit expenditures for generating plants that are likely to be poor investments. These schemes are especially important in the regulation of nuclear power generation because even the costs of preconstruction licensing and feasibility studies can impose a staggering burden on ratepayers.

The Ratepayer's Burden

Construction Work in Progress

Rate-setting by a PUC requires the establishment of a rate base that fixes the value of property devoted by the utility to the public service. An appropriate rate of return is allowed to the utility for items included in the rate base. Normally, a utility is not entitled to incorporate in its rate base any property not currently used or useful, no matter how useful it may have been in the past or how useful it might be in the future.³

In some states, however, the cost of nonuseful property may be incorporated in the utility's rate base if the state PUC finds that the investment is prudent.⁴ One way of passing these costs to the ratepayers is the inclusion of construction work in progress (CWIP) in the rate base. Including CWIP in the rate base allows utilities to charge customers for the current construction costs of power plants. Customers pay more, over a longer period of time, for electricity that will be produced when the plant is completed much later. While this allows the utility to reduce its current borrowing and may save a great deal of money

case said the utility must prove the permitted rates are too low to yield a reasonable return. *Id.* at 494-95.

3. *Denver Union Stock Yard Co. v. United States*, 304 U.S. 470, 475 (1938). See also *Pennsylvania Pub. Util. Comm'n v. Metropolitan Edison Co.*, *UTIL. L. REP. (State) (CCH)* ¶ 23,117 (May 23, 1980), in which the Pennsylvania Public Utilities Commission found that Unit 1 of the Three Mile Island power station was not used or useful and could not be included in the utility's rate base. Although Unit 1 was functional, the Commission found that substantial uncertainty existed with respect to the resumption of electrical generation at Unit 1 because of ongoing investigations into the utility's competence. The Commission said Unit 1 would be reincorporated into the rate base when it resumed generation.

4. *Missouri ex rel. Southwestern Bell Tel. Co. v. Public Service Comm'n*, 262 U.S. 276, 288 (1923).

over the life of a nuclear power plant, it requires customers to pay increases of up to 15% for services they do not currently receive;⁵ this violates the basic premise that ratepayers should pay only for facilities used and useful.

If current construction costs are not included in the rate base, the utility must issue new bonds or debentures to cover the short-term borrowing needed for construction costs. Ratepayers are then forced to pay higher rates in order to guarantee a reasonable rate of return to the utility shareholders.

Abandoned and Canceled Plants

Ratepayers are further burdened when a nuclear project is canceled or abandoned. If a state PUC allows a utility to amortize the losses attributable to an abandoned project, the costs are passed directly to ratepayers over a specified term of years. The unamortized balance may be included in the rate base or absorbed by the utility shareholders. Ratepayers are again forced to pay higher rates to cover the amortization or to ensure a reasonable rate of return to the shareholders.

Oklahomans served by Public Service Company are intimately acquainted with economic repercussions of the abandonment of nuclear power plants. When the construction of its Black Fox nuclear plant was delayed by the revision of safety standards by the Nuclear Regulatory Commission, PSO applied to the Oklahoma Corporation Commission for a rate increase. In this application, PSO sought to include in its rate base \$132.3 million of CWIP attributable to Black Fox. Ten different parties intervened in the rate-making proceedings, saying Black Fox was an imprudent investment that should not be completed and protesting the inclusion of CWIP in PSO's rate base. In response, the Corporation Commission agreed to expand the scope of the proceedings to investigate the incorporation of Black Fox construction costs.⁶

After months of study by the Corporation Commission staff and detailed economic analysis of Black Fox by Touche Ross & Co., the Commission concluded that Black Fox was no longer feasible, and that CWIP would not be included in the rate base should PSO pursue the construction of Black Fox as a nuclear facility. The Commission said it would include CWIP to the extent that the existing construction at Black Fox could be converted for the use of coal-fired generation. The Commission then recognized that PSO would be forced into bankruptcy if its shareholders were forced to absorb the loss and permitted a straight-line amortization of such loss over a ten-year period.⁷

Many other states are facing the question of whether to include the costs of abandoned or canceled nuclear projects in utility rate structures. Since the loss-of-coolant accident at Three Mile Island in March 1979, nuclear power projects have been subjected to extraordinary scrutiny and delays, with attendant cost increases. Many utility companies have reconsidered proposed nuclear

5. HOUSE COMM. ON GOV'T OPERATIONS, NUCLEAR POWER COSTS, H.R. REP. NO. 1090, 95th Cong., 2d Sess. 3 (1978) [hereinafter cited as NUCLEAR POWER COSTS].

6. Order No. 197837 of the Oklahoma Corporation Commission, Sept. 4, 1981.

7. Order No. 206560 of the Oklahoma Corporation Commission, Jan. 15, 1982.

projects and found that the costs of minimizing nuclear safety hazards far outweigh any anticipated benefits; these utilities have canceled proposed nuclear projects and abandoned those already under construction. Other utilities have canceled nuclear power projects when state PUCs refused to approve the projects, or when the plant's generating capacity would exceed demand.⁸

8. The following twelve examples reflect the conservative attitude assumed by many utilities in the wake of Three Mile Island:

(1) Northeast Utilities abandoned its proposed nuclear generating station at Montague Plains, Mass., after determining the plant would not be required to meet demands for electricity during the time frame for which it was planned. Northeast Utilities plans to apply to the Massachusetts PUC for recovery of \$29 million in costs directly associated with the nuclear project. *Montague Nuclear Project Is Canceled*, PUB. UTIL. FOR., Jan. 29, 1981, at 43.

(2) Louisiana Power & Light Company canceled its St. Rosalie nuclear generator project after investing \$13.6 million. An administrative judge for the Federal Energy Regulatory Commission (FERC) allowed the utility to amortize these costs over a five-year period, but excluded the unamortized balance from the rate base, saying the burden of the carrying charges would be lessened by quick recovery and the costs of electrical service would be credited with the benefit of tax deductions taken on the loss. Massela, *Recouping Abandoned Construction Losses*, PUB. UTIL. FOR., Feb. 26, 1981, at 60 [hereinafter cited as Massela].

(3) Virginia Electric & Power Company abandoned its Surry Nuclear Project, and a FERC administrative judge permitted amortization of the loss over a ten-year period. The unamortized balance was not included in the rate base. This treatment was approved by PUCs in Virginia and North Carolina. Massela, *supra*, at 62.

(4) Southern California Edison abandoned its Huntington Beach and Vidal nuclear plants. The California PUC allowed the utility to amortize the losses associated with the Huntington Beach plant, but refused to incorporate the Vidal losses because the utility had not proven the prudence of the write-off. Massela, *supra*, at 61.

(5) Northern States Power Company sustained a \$103.3 million loss when it canceled its Tyrone Energy Park nuclear project after the Wisconsin PUC refused to issue a certificate of need for the plant. A FERC administrative judge determined that \$75 million in costs were to be borne by the co-owner utilities and allowed amortization over a variable period, targeted at ten years. Massela, *supra*, at 62. North Dakota's PUC decided that ratepayers should not be directly charged with any of the cancellation costs attributable to the North Dakota utility's participation in the Tyrone project. *Annual Report*, 1981 A.B.A. SEC. PUB. UTILITY L. REP. 107.

(6) Arizona Public Service Company canceled its Palo Verde nuclear plant and sought to incorporate the loss in its rate structure. The Arizona Corporation Commission excluded all of the costs for four reasons: first, Public Service failed to prove the prudence of its investment in Palo Verde; second, the expense was unusual and nonrecurring; third, shareholders should bear the loss since construction planning is a management function; and fourth, it was inappropriate to burden Arizona ratepayers with expenses triggered by conditions in California, which made the continuing participation of California utilities in the project uncertain. Massela, *supra*, at 62.

(7) San Diego Gas & Electric Company sustained a \$90 million loss when it suspended work on its Sundesert nuclear plant. The California PUC divided this loss into site-related and nonsite-related costs. The site-related costs were included in the rate base because the utility reserved the site for future use. The nonsite-related costs were given a five-year amortization period without rate base treatment. San Diego Gas & Elec. Co., PUB. UTIL. REP. (PUR) 4th 435 (1979).

(8) The Carolina Power & Light Company incurred a loss of \$7 million when it canceled its South River nuclear plant because of diminished demand forecasts. North Carolina's PUC allowed both a five-year amortization and rate base treatment of the unamortized balance. This decision passed the entire cost directly to ratepayers. Massela, *supra*, at 63.

(9) Wisconsin Electric & Power Company canceled its Haver nuclear plant and requested

Allocation of costs between shareholders and ratepayers affects only the time at which ratepayers are burdened. The most effective ways to protect ratepayers from unnecessary rate increases are to reduce the costs of constructing nuclear plants and to prevent utilities from investing in nuclear projects that will never produce any electricity.

Construction Costs

Capital Outlays

Capital costs for nuclear power plants have risen three times as fast as the rate of inflation and one and one-half times as fast as the costs of coal-fired generators.⁹ These costs rose 142% between 1971 and 1978,¹⁰ and cost escalations will probably intensify as a result of the Three Mile Island accident.¹¹ Much of the increased cost of nuclear plant construction is attributable to design changes needed to comply with stricter statutory and regulatory requirements.¹² As each new requirement is imposed, the utility must stop construction and revise its designs to conform to the new standards. If the delays are imposed after design engineering commences, the additional costs for the nuclear unit may exceed \$100 million per year of delay.¹³

Although inflation accounts for part of the cost increases resulting from construction delays, serious errors in cost estimates account for a great deal

rate base treatment of the plant costs. The Wisconsin PUC established alternative treatment of the costs, based on future use of the plant site. If the utility renews its plans to build a generating plant, the costs will be amortized over a three-year period without rate base treatment of the balance. If the construction site is completely abandoned, however, the costs will be amortized over a three-year period with rate base treatment of the balance. Massela, *supra*, at 63.

(10) Public Service Electric & Gas Company incurred a \$319 million loss when it abandoned its Atlantic Generating Station project, which was aimed at locating floating nuclear power plants off the coast of New Jersey. The New Jersey Board of Public Utilities allowed a twenty-year amortization without rate base treatment of only \$174.5 million. *Annual Report*, 1981 A.B.A. SEC. PUB. UTIL. L. REP. 133.

(11) Wisconsin Public Service Corporation lost \$1.2 million in precertification expenses when the Koskonong Nuclear Plant was abandoned. The Wisconsin Public Service Commission required the utility to write off the sum as an extraordinary property loss, although it found the expenditures prudent. The Circuit Court of Brown County, Wis., reversed the ruling as inconsistent with the Commission's finding and remanded for further consideration. *Annual Report*, 1981 A.B.A. SEC. PUB. UTIL. L. REP. 132.

(12) Cleveland Electric Illuminating Company sustained a \$56.4 million loss when it terminated four nuclear power plants. The Ohio PUC allowed the utility to amortize the entire loss over a ten-year period. The Supreme Court of Ohio reversed the ruling because the investment never provided any service to the ratepayers. *Office of Consumers' Counsel v. Public Util. Comm'n*, 67 Ohio St. 2d 153, 423 N.E.2d 820 (1981).

9. *Nuclear Economics Part VII: Oversight Hearings Before the Subcomm. on Energy and the Environment of the House Comm. on Interior & Insular Affairs*, 96th Cong., 1st Sess. 246, 247 (1979) (statement of Charles Komanoff) [hereinafter cited as *Nuclear Economics Hearings*].

10. *Id.* at 265.

11. *Id.* at 246.

12. *Id.* at 657-58 (statement of Leonard F.C. Reichle).

13. *Id.* at 63 (statement of William W. Brandfon).

of the apparent cost increase. Cost overruns of 100% and more are common in the construction of nuclear plants. The House Committee on Government Operations has reported overruns ranging from 175% to 265%.¹⁴

Errors are inherent in the methods typically used by utilities to project costs. The usual method is to specify plant design characteristics, estimate the amount and cost of labor and materials needed to meet these specifications, then tally the costs. This method is doomed to fail because of the impossibility of predicting the safety standards that will be imposed that affect plant design requirements.¹⁵

Even periodic revision of cost estimates has failed to predict construction costs accurately. During the licensing and construction of its Seabrook Station nuclear plant, Public Service Company of New Hampshire (PSCO) made the following cost estimates: \$1.2 billion original estimate in 1972; \$1.6 billion in 1974; \$2.2 billion in 1976; and \$2.6 billion in 1977.¹⁶

Dual Regulation

Some of the delays that contribute to increased construction costs are a result of the lengthy procedure for acquiring a construction permit for a nuclear facility. The licensing process is controlled by the federal government and is designed to test every one of the proposed plant's safety features and environmental safeguards.

The federal government originally retained exclusive authority over the development and use of nuclear energy in order to control its use for weapons. Later, however, Congress passed the Atomic Energy Act of 1954, which recognized the role of private business in the development of peaceful uses for nuclear power.¹⁷ In its 1959 amendments to the Atomic Energy Act, Congress sought to define the respective roles of the states and the federal government regarding nuclear power. These amendments included procedures whereby the Atomic Energy Commission, the federal agency responsible for regulating nuclear power, could share with the states its authority to regulate use of fissionable materials.¹⁸

Section 271 of the Atomic Energy Act expressly preserves the right of states to regulate the rates charged for electricity produced at a nuclear facility.¹⁹ Another section preserves the states' right to participate in site selection for purposes other than protection against radiation hazards.²⁰ States' powers under

14. NUCLEAR POWER COSTS, *supra* note 5, at 31. The report showed cost overruns of 267% for the Boston Edison Company plant, 178% for the Omaha Power District Plant, and 175% for the Vermont Yankee plant. Other statistics show overruns of 210% for the Florida Power Company plant, *id.* at 41, and 194% for the Connecticut Yankee nuclear plant, *id.* at 99 (dissent).

15. *Nuclear Economics Hearings*, *supra* note 9, at 249 (statement of Charles Komanoff).

16. D. STEVER, JR., SEABROOK AND THE NUCLEAR REGULATORY COMMISSION 113-14 (1980) [hereinafter cited as STEVER].

17. 42 U.S.C. §§ 2011-2284 (1980).

18. *Id.* § 2021.

19. *Id.* § 2018.

20. *Id.* § 2021(k), which reads: "Nothing in this section shall be construed to affect the authority of any state or local agency to regulate activities for purposes other than protection against radiation hazards."

this section to determine locations for nuclear reactors extend to matters such as zoning and local interests. States may also exert control over some matters that involve safety considerations in addition to radiation hazards, such as location of active geological fault zones.²¹

This presumably leaves to the state the threshold decision of whether to permit the development and construction of nuclear power plants within the state. This premise is questionable, however, in light of the holding in *Pacific Legal Foundation v. State Energy Resources Conservation & Development Comm'n*,²² where plaintiffs challenged three sections of the California Public Resources Code²³ that imposed restrictions upon the certification of nuclear power plants. These statutes forbade the licensing of such plants until such time as the State Energy Commission found that the authorized federal agency had approved a technology for disposal of high-level nuclear wastes. Since the Energy Commission found that the requisite findings on nuclear waste disposal could not be made, these statutes effectively prevented the licensing of any nuclear power plant in California.²⁴

The statutes challenged were purportedly enacted for the economic purpose of ensuring that Californians would not have to bear the financial risk of funding a nuclear power plant that may later be shut down because of inadequate permanent waste disposal facilities.²⁵ The court, however, found that protection from radiation hazard was the true basis for the statutes, which were impliedly preempted in favor of section 2021(c) of the Atomic Energy Act.²⁶

Even more disturbing than the finding of preemption under the particular facts is the court's implication that *any* restrictions upon the licensing of nuclear power plants would be void because they "stand as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress."²⁷

Congress' policy to encourage the development and utilization of nuclear energy would decidedly be frustrated if all fifty states had statutes similar to California Public Resources Code § 25524.2.

21. Northern Cal. Ass'n to Preserve Bodega Head & Harbor, Inc. v. Public Util. Comm'n, 61 Cal. 2d 126, 300 P.2d 200, 204, 37 Cal. Rptr. 432 (1964).

22. Pacific Legal Found. v. State Energy Resources Conservation & Dev. Comm'n, 472 F. Supp. 191 (S.D. Cal. 1974).

23. CAL. PUB. RES. CODE §§ 25524.1-25524.3 (West 1977).

24. 472 F. Supp. 191, 196 (S.D. Cal. 1974).

25. *Id.* at 198.

26. *Id.* at 199. 42 U.S.C. § 2021(c) (1976) reserves to the federal government the exclusive authority to regulate "the disposal of such other byproduct, source, or special nuclear material as the [Nuclear Regulatory] Commission determines by regulation or order should, because of the hazards or potential hazards thereof, not be so disposed without a license from the Commission."

27. 472 F. Supp. 191, 100 (S.D. Cal. 1974), quoting *Hines v. Davidowitz*, 312 U.S. 42 (1941). *Accord*, *Northeastern States Power Co. v. State*, 320 F. Supp. 172 (D. Minn. 1970), *aff'd* 447 F.2d 1143 (8th Cir. 1971), *aff'd per curiam*, 405 U.S. 1035 (1972). *Cf.* *New York Tel. Co. v. New York Dep't of Labor*, 440 U.S. 519 (1979); *Marinello v. Shell Oil Co.*, 511 F.2d 853 (3d Cir. 1975).

Although the Atomic Energy Act certainly leaves room for the state to regulate on the subject of nuclear energy within the confines of §§ 2021(k) and 2021(b), *the power to regulate is not necessarily the power to prohibit*. There seems little point in enacting an Atomic Energy Act and establishing a federal agency to promulgate extensive and pervasive regulations on the subject of construction and operation of nuclear reactors and the disposal of nuclear waste if it is within the prerogative of the states to outlaw the use of atomic energy within their borders.²⁸

If the court is correct in assuming that states have no authority to prevent the development and construction of nuclear plants, PUCs must inevitably cope with the costs of such construction.

The federal Nuclear Regulatory Commission (NRC) exercises almost absolute control over all phases of nuclear power plant operation, from site selection to final decommissioning. Utilities must obtain a construction permit from the NRC prior to building a nuclear power plant and an operating license before the plant can be used. The Atomic Energy Act specifically provides that the NRC shall retain control over the construction and operation of nuclear power production facilities.²⁹ The NRC may also revoke any license it has granted if the holder of such license has digressed from the standards established in construction and operating permits, or has violated any other regulation of the NRC.³⁰ The NRC may even permit a nuclear facility to continue operating after its license has been revoked.³¹

Although utilities and state regulatory agencies may participate in the selection of sites for nuclear power plants, their influence is limited. The ultimate decision as to reactor siting is controlled by the NRC under its reactor site criteria.³² These criteria are based on factors relevant to the safe operation of nuclear reactors, and include such factors as engineering characteristics of the proposed plant in relation to its site, and meteorological conditions at the site.³³

Thus, state regulation is confined to the generation, sale, or transmission of electric power produced by nuclear plants while the NRC controls the cost of construction, which is a major factor in rate-setting.

Dual control of nuclear facilities is an important influence on the ultimate cost to consumers. The problem arises from the conflicting goals of each regulatory authority. The NRC emphasizes safe operation, while state PUCs emphasize the benefit/cost of power production. While the NRC's task is

28. 472 F. Supp. 191, 200 (S.D. Cal. 1974) (emphasis added).

29. 42 U.S.C. § 2021(c) (1973).

30. *Id.* § 2236(a).

31. *Id.* § 2238. This statute allows the NRC to take possession of and operate any facility whose license has been revoked, but only for such period of time as the public convenience and necessity or the production program of the NRC requires it, or until a new license becomes effective.

32. 10 C.F.R. § 100 (1981).

33. *Id.* § 100.10.

technically complex, it has the single goal of safe operation. State PUCs must resolve the conflicting goals of minimizing costs to ratepayers, ensuring an adequate supply of electrical power, and allowing utilities to make a fair profit.

Construction Licensing Process

The NRC, with its safety orientation, requires a lengthy licensing process designed to test every one of the proposed plant's safety features and environmental safeguards. The NRC requires that a utility obtain a construction permit before building a nuclear reactor, and an operating license before obtaining fissionable fuels after the plant is completed. The procedure for obtaining a permit to construct requires much more time and money because it involves issues such as environmental impact, siting, and reactor design features. From 1971 to 1975 a typical uncontested permit proceeding took four months, and a contested proceeding took nine months.³⁴ The evaluations required for construction permits are becoming increasingly complex, especially since Three Mile Island.

Prior to formal application for a construction permit, a utility normally incurs great expense in studying, locating, and purchasing a site, acquiring state and local permits, preparing cost estimates, and organizing a funding program for the project. The utility then begins a series of informal discussions with the NRC to determine if the application is complete.³⁵ The completed application includes a preliminary safety analysis report,³⁶ an environmental report,³⁷ and information regarding antitrust matters.³⁸ If the application is deemed complete, a formal tender is made to the NRC. The tendered application now requires six to eight *years* for processing the final approval.

The application is thoroughly reviewed by the NRC staff, whose evaluations become a part of it. The staff evaluation alone may take months because of inadequate staffing, schedule conflicts, and overbroad, outdated rules.³⁹ After incorporating the staff evaluation, the NRC publishes notices of the application and makes it available for review by any interested parties.⁴⁰ The NRC staff then prepares a draft environmental impact statement and circulates it for comment.⁴¹ After the comments are received, the impact statement is revised to incorporate them and a final impact statement is filed.⁴²

The adjudicatory process starts at this point. Intervention by third parties is common, and hearings may continue for months. Afterward, the NRC's

34. NUCLEAR POWER COSTS, *supra* note 5, at 43.

35. 10 C.F.R. § 2.101 (1981).

36. *Id.* § 50.34(a).

37. *Id.* § 50.30(f).

38. *Id.* § 50.33(a).

39. *NRC Seeks Streamlined Licensing Process*, PUB. UTIL. FORT., Mar. 26, 1981, at 37.

40. 10 C.F.R. § 51.50(a) (1981).

41. *Id.* §§ 51.22-51.25. The draft is sent to the Environmental Protection Agency, federal agencies having special jurisdiction regarding environmental standards, state agencies having jurisdiction over environmental matters, and national and local environmental organization. The NRC must also publish notice of hearings in the *Federal Register* and in local newspapers.

42. 10 C.F.R. § 51.26 (1981).

three-member Atomic Safety and Licensing Board issues its findings and approves or disapproves the application.⁴³ The decision may be appealed within the NRC to the Atomic Safety and Licensing Appeal Board,⁴⁴ and then to the Commission en banc.⁴⁵

While this procedure may appear simple, the large number of intervenors and the highly emotional issues involved usually assure an extended period of hearings and appeals. The Seabrook Station plant in New Hampshire provides a recent example of the time period involved.⁴⁶ In February 1972, PSCO applied for a site certificate from the New Hampshire PUC. In March 1973, PSCO applied to the NRC for a construction permit. The NRC filed its final environmental impact statement in December 1974, and formal hearings began in April 1975; the hearings lasted into November 1975. Additional hearings on safety-related issues were held in February and March 1976. In June 1976, the Atomic Safety and Licensing Board issued a construction permit.

Construction, however, was retarded by a series of 27 appeals, lasting from May 1975 to September 1979. The permit was repeatedly stayed and reinstated during this time, with the final reinstatement effective in July 1978—twenty-five months after the original construction permit was issued.

Imprudent Investments

Congress apparently perceived a link between the financial capability of a utility and the safe operation of a nuclear power plant when it passed the Atomic Energy Act. The Act suggests that the Atomic Energy Commission (now NRC) develop standards of financial ability for applicants. The Act, however, imposes only the vague requirement that the applicant be equipped to observe safety standards.⁴⁷ The requirements imposed by the Code of Federal Regulations address the need for liability insurance and indemnification.⁴⁸

The Atomic Energy Act and the Code of Federal Regulations leave to the state the problem of abandonment of nuclear facilities by utilities that suffer financial crises. While this problem is properly delegated to state PUCs, Congress has failed to recognize that the same financial crises may erode the utility's ability to operate the plant safely.

The only financial data the NRC requires in an application is "information sufficient to demonstrate to the Commission the financial qualification of the applicant to carry out . . . the activities for which the permit or license is sought."⁴⁹ The applicant for a construction permit must show that it possesses funds necessary to cover estimated construction costs and related fuel cycle costs or that it has a "reasonable assurance" of obtaining such funds, or a combination of the two.⁵⁰ The extraordinarily high capital cost of building

43. *Id.* § 2.721.

44. *Id.* § 2.785.

45. *Id.* § 2.786.

46. STEVER, *supra* note 16, apps. II, IV.

47. 42 U.S.C. § 2133(b)(2) (1973).

48. 10 C.F.R. § 140 (1981).

49. *Id.* § 50.33(f).

50. *Id.*

a nuclear power plant prevents most utilities from constructing on a cash basis, so the term "reasonable assurance" is critical in assessing the financial capability of the applicant. The NRC has refused to further define "reasonable assurance"; however, the Atomic Safety and Licensing Appeal Board has said that "certainty need not be shown, and all contingencies need not be foreseen."⁵¹ The NRC also refused to particularize financial requirements, saying the complexities involved in estimating the costs of nuclear projects prevent the applicant from providing more than a reasonable assurance that it can provide funding.⁵²

A utility frequently finds that it is unable to fund a nuclear project according to its original plan when participants withdraw or reduce their level of investment. The utility then has several choices:

- (1) it can apply for rate increases and the inclusion of CWIP in its current rate base;
- (2) it can issue new bonds or debentures to cover short-term borrowing needed for current expenditures;
- (3) it can suspend work until funding is assured; or
- (4) it can abandon the project. Each of these will ultimately increase the ratepayers' burden.

Inclusion of CWIP in the rate base forces consumers to pay now for services to be rendered in the future. If new bonds are issued, ratepayers are forced to pay higher rates in order to guarantee a reasonable rate of return to the utility shareholders. If construction is delayed, the ratepayers will ultimately pay the escalated costs of completion by one of the two preceding methods. Finally, if the project is abandoned, ratepayers will pay, either through amortization of the loss or increased rates, to guarantee a reasonable return when the utility is forced to issue new stock or sell new bonds to finance the loss.

Solutions

Reducing Construction Costs

One obvious way to protect ratepayers from excessive burdens is to stabilize and reduce the costs of construction. Materials and labor are subject to the market pressures that affect the costs of any type of construction and are not susceptible to reduction by regulation. Costs can be reduced by the use of generic reactors that have already been tested and approved by the NRC. The use of generic plant designs would reduce costs even further.

The use of generic designs would also facilitate the development of realistic cost estimates, which will allow utilities to devise adequate funding programs

51. Public Serv. Co. of New Hampshire (Seabrook Station Units 1 and 2), 7 N.R.C. 33, 79 (1977). The Appeals Board appeared to base its assessment of the applicant's financial capability on the fact that the project had already been approved by the state PUC, which would presumably allow rate increases sufficient to maintain the applicant's financial stability.

52. Public Serv. Co. of New Hampshire (Seabrook Station Units 1 and 2), 7 N.R.C. 1, 19 (1978).

and prevent unexpected cost increases. The NRC, which has ready access to almost all available information about nuclear reactor costs, should participate in the development of firm criteria for estimating construction costs.

Reducing Licensing Costs

Another way to reduce costs is to shorten the time required for processing construction permit applications. Delays in issuing permits cost ratepayers an estimated \$2.7 billion to \$3.6 billion through 1982.⁵³ The NRC has recognized the high cost of delay, and is currently organizing a "recovery plan" to speed up staff review of applications. A number of alternatives could help streamline the licensing process. One is to delegate some of the functions now vested in the NRC to state conservation and regulatory agencies. This suggestion recognizes that local groups are ordinarily well-equipped to evaluate such items as local ecology, aesthetic standards, energy needs, and the financial capability of applicants. Its weakness lies in the fact that narrow geographical interests may fail to consider regional and national needs for energy facilities.⁵⁴

Some delays are caused by conflicts between the federal regulatory agencies that participate, either as advisers or as intervenors, in the licensing process. Some of these conflicts could be eliminated by using a licensing coordination office. This office could establish time-tables, coordinate the efforts of regulatory agencies, and generally ensure that applications are not caught in an agency bottleneck.⁵⁵ A coordinating office would be useful in acquiring and evaluating data from state regulatory agencies, should states ever be authorized to participate in the licensing process.

Reforms suggested by the NRC would alter its rules of procedure rather than make fundamental changes in its function or structure. The proposed changes could limit the decision-making time for most applications to eight months. These changes include eliminating the right to discovery against the NRC staff, allowing the licensing board to rule upon motions orally, and allowing the applicant to file a reply to another party's submissions. The proposed rules would also place a time limit on discovery. Because all of these changes would reduce participation by third parties, the NRC would allow intervenors to file motions at any time.⁵⁶

The House Appropriations Committee supplied additional impetus for the NRC reforms in its Supplemental Appropriations and Rescission Bill for fiscal 1981.⁵⁷ The Committee approved three policy amendments designed to speed up licensing. Under these directives, the NRC may not spend any of its funds on license hearings that consider the need for power, site conflicts, the applicant's financial qualifications, or alternative energy sources. Second, intervention would be permitted only when the intervenor has "legally defensible"

53. *NRC Seeks Streamlined Licensing Process*, PUB. UTIL. FORT., Mar. 26, 1981, at 37.

54. Doub, *Federal Energy Regulation—Toward a Better Way*, 60 A.B.A.J. 920, 922 (1974).

55. *Id.* at 921.

56. *NRC Backs Expedited Procedures for Nuclear Plants*, PUB. UTIL. FORT., Apr. 9, 1981, at 42.

57. H.R. 3400, 97th Cong., 1st Sess. (1981).

proof of his claims. Finally, only parties directly affected by the construction or operation of a specific nuclear power plant may intervene.⁵⁸

Preventing Imprudent Investments

All of these proposed measures may operate to reduce the costs of nuclear plant construction. They do nothing, however, to reduce the precertification costs of construction. In capital-intensive projects like nuclear plants, huge amounts of money can be spent in site preparation before the state PUC acquires jurisdiction. Precertification costs can be so high as to nullify the state's power to prevent wasteful investments at ratepayers' expense. The most effective safeguard against wasteful investments is the certificate of need required in many states to construct a generating plant. While this device has the advantage of preventing expenditures for construction, it has an important fault: a regulatory agency does not acquire jurisdiction over the proposed construction project until an application for project certification is submitted. Even if certification is denied, the ratepayers will ultimately absorb any preconstruction expenditures.

Another device for controlling capital expenditures for construction is that used in Oklahoma—state certification of security issues.⁵⁹ Under Michigan law, which also requires certification of utility security issues,⁶⁰ the PUC may inquire into the prudence of the expenditures to be financed from the proceeds. Certification inquiries address the need for the project, loan forecasts, and comparative economics of alternative types of power plants.⁶¹

This device, like the certificate of need, fails to protect the ratepayer from expenses incurred prior to certification procedures. If it is used in conjunction with the regulatory agency's procedural rules, however, the protection afforded to the consumer is magnified. Before authorizing securities, the regulatory agency should require a thorough analysis of the applicant's financial qualifications, including such questions as: What percentage of the capital for construction will come from the sale of the proposed securities? Does the applicant plan to include CWIP in its rate base? Has the applicant been experiencing any financial difficulties? If so, is it a problem common to the industry as a whole, or is it peculiar to the applicant?⁶² Additional rules should establish a firm policy limiting the amount of CWIP which may be included in the rate base and limiting the rate increases attributable to construction.

Wisconsin has adopted a more drastic solution that appears to be a workable compromise between illusory and total control of utility expenditures.⁶³ Wiscon-

58. *Nuclear Issues Claim Congressional Attention*, PUB. UTIL. FORT., May 21, 1981, at 38.

59. See 17 OKLA. STAT. § 184 (1981), which provides that public utilities may not issue securities for "the acquisition of property, the construction, extension or improvement of its facilities, or the improvement of its service . . ." unless authorized to do so by the Corporation Commission.

60. MICH. COMP. LAWS § 406.301 (1980 Supp.).

61. Allison, *Judging the Prudence of Constructing Nuclear Power Plants: A Report to the Oklahoma Corporation Commission*, 15 TULSA L.J. 262, 286 (1979).

62. STEVER, *supra* note 16, at 130.

63. Allison, *Judging the Prudence of Constructing Nuclear Power Plants: A Report to the Oklahoma Corporation Commission*, 15 TULSA L.J. 262, 286 (1979).

sin's statutes require that utilities submit an advanced planning program every other year. The program must include a description of all facilities the utility owns or plans to construct within the next ten years; it must also include descriptions of alternatives and justify their rejection.⁶⁴ The advance programs are then supplied to local governments and to all of the state agencies that will regulate the proposed construction.⁶⁵ Each agency must then indicate what procedures will be necessary to obtain that agency's approval.⁶⁶ The Wisconsin PUC will approve the plan only when it will provide an adequate supply of electricity; it is in the public interest; it provides incentives to conserve electricity; and it is coordinated with long-range plans to policies of other agencies.⁶⁷ A certificate of public convenience and necessity permitting plant construction may be approved only when the proposed facility is in substantial compliance with the utility's most recent advance plan.⁶⁸

While the Wisconsin plan adds a substantial burden to the state's PUC, it prevents large expenditures for preconstruction costs and prevents the development of construction plants that are inappropriate to the service or inconsistent with the policies and goals of the regulatory agency.

Conclusion

The extraordinary capital investments and losses involved in the construction of nuclear power plants ultimately burden the utility's ratepayers. Such costs may be passed directly by the inclusion of current construction costs or amortization of losses in current rates. They may also be passed indirectly to supply the fair rate of return guaranteed to state-franchised utility shareholders.

The ratepayers' burden is increased by cost overruns attributable to inaccurate cost estimates, frequent design changes to meet statutory requirements, and lengthy licensing procedures. The burden is additionally increased when a utility terminates a nuclear project because the ratepayers receive no benefit from such expenditures.

State regulatory agencies have no authority to control the construction and the attendant costs of nuclear generating plants; such power is vested exclusively in the Nuclear Regulatory Commission. The NRC, however, has no authority to set rates for electricity generated from nuclear plants; such power is vested exclusively in the states. This dual control contributes greatly to the ratepayers' burden in states that use traditional methods to control utilities' expansion because such methods are available only after the state acquires jurisdiction via rate-setting and project certification. The huge capital outlays made before the actual construction begins and before application for rate increases or certification are made can nullify the state's power to protect ratepayers from

64. WIS. STAT. § 196.491(2)(a) (1981).

65. *Id.* § 196.491(2)(b).

66. *Id.* § 196.491(2)(c).

67. *Id.* § 196.491(2)(i).

68. *Id.* § 196.491(3)(d)(i).