THE REGULATORY TREATMENT OF MISTAKES IN RETROSPECT: CANCELED PLANTS AND EXCESS CAPACITY

RICHARD J. PIERCE, JR.†

In the 1970's, firms in the energy industry concluded that they had a duty both to the public and to their stockholders to make investments in large new facilities, such as nuclear generating plants, plants to convert coal into pipeline-quality synthetic gas, terminals to receive and regasify imported liquefied natural gas, and pipelines to transport natural gas from frontier areas. With substantial encouragement from both federal and state governments,¹ they committed billions of dollars to projects with lead times of eight to twelve years.²

Today, a high proportion of the large energy projects initiated in the 1970's have been canceled,³ and many recently completed or nearly completed plants are the subject of intense controversy. Regulatory agencies throughout the country are being confronted with requests for enormous rate increases to recover hundreds of millions of dollars in-

† W.R. Irby Professor of Law, Tulane University. B.S. 1965, Lehigh University; J.D. 1972, University of Virginia.

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¹ The need to invest in a wide range of capital intensive energy supply projects has been repeatedly emphasized in major presidential addresses. See, e.g., SEN. COMM. ON ENERGY & NAT. RESOURCES, 95TH CONG., 2D SESS., EXECUTIVE ENERGY DOCUMENTS (Comm. Print 1978); SEN. COMM. ON INT'L & INSULAR AFFAIRS, 93RD CONG., 1ST SESS., PRESIDENTIAL ENERGY STATEMENTS (Comm. Print 1973). President Reagan has continued the trend initiated by his predecessors. See, e.g., U.S. DEP'T OF ENERGY, REDUCING U.S. OIL VULNERABILITY, ENERGY POLICIES FOR THE 1980's, at 1-2, 6, 14 (1980).

² See 2 ENERGY INFORMATION ADMIN., U.S. DEP'T OF ENERGY, PROJECTED COSTS OF ELECTRICITY FROM NUCLEAR AND COAL-FIRED POWER PLANTS 1, 41 n.9 (1982) [hereinafter cited as COSTS OF ELECTRICITY]; see also U.S. DEP'T OF ENERGY, IMPACTS OF FINANCIAL CONSTRAINTS ON THE ELECTRIC UTILITY INDUSTRY 38 (1982) (construction lead times of 7-9 years for coal plants and 11-13 years for nuclear plants).

In 1980, in fact, allowance for funds used during construction accounted for 55% of the utility industry's average earnings per share. *The Future of the Nation's Energy Utilities: Implications for Federal R.D. & D., Hearings Before the Subcomm. on Energy Development & Applications of the House Comm. on Science & Technology*, 97th Cong., 1st Sess. 2 (Comm. Print 1982) (statement of Charles Benore, vice president of Paine, Webber, Mitchell & Hutchins).

³ See ENERGY INFORMATION ADMIN., U.S. DEP'T OF ENERGY, NUCLEAR PLANT CANCELLATIONS: CAUSES, COSTS, AND CONSEQUENCES xviii table ES2, xxi table ES4 (1983) [hereinafter cited as NUCLEAR PLANT CANCELLATIONS].

vested in projects that have recently been canceled or abandoned⁴ and to reflect multi-billion dollar investments in projects that are either recently completed or are nearing completion.⁵ In the most extreme cases, the resolution of the legal disputes spawned by major new energy projects could result in the bankruptcy of the sponsoring entity or the municipalities it serves.⁶ State and federal regulatory agencies have had little luck in resolving these highly politicized controversies through application of traditional doctrines of public utility regulation.

This Article will explore the major legal and policy issues presented by capital intensive energy projects that appear in retrospect to have been mistakes, projects that would not have been initiated ten years ago if the sponsors had known then what they know today. Such projects will be referred to in this Article as "mistakes in retrospect." Most of the discussion will focus on nuclear generating plants because they dominate this category of projects. Over one hundred nuclear units have been canceled,⁷ and many other such units are only now nearing completion.⁸ Investments of approximately ten billion dollars have already been lost as a result of nuclear plant cancellations,⁹ and future cancellations are expected to involve additional sunk costs of five to

⁴ See generally *id.*

⁵ See, e.g., Application of Louisiana Power & Light Co. for an Increase in its Rates, Louisiana Pub. Serv. Comm'n Docket No. U-15684 (Jan. 25, 1983) (utility requested increases in rates that would produce nearly \$412 million of additional net revenue to help offset the cost of constructing a nuclear power plant where cost was estimated at \$2.1 billion and cost would probably increase before completion); Application of New Orleans Pub. Serv., Inc., for an Increase in its Rates, Louisiana Pub. Serv. Comm'n Docket No. U-15689 (Jan. 28, 1983) (utility requested increases in rates that would generate nearly \$113 million of additional initial cash revenue annually in order to recover, among other items, purchase power expenses associated with the Grand Gulf nuclear power plant). Both applications are on file at the *University of Pennsylvania Law Review*.

⁶ Bankruptcy threatens Washington Public Power Supply System (WPPSS) in the aftermath of its default on a \$2.25 billion bond series issued to construct two nuclear power plants. The default has, moreover, seriously undermined the financial stability of 88 municipalities in Washington, Oregon, and Idaho that have invested heavily in three other partially completed plants being built by WPPSS. See *Asson v. City of Burley*, 105 Idaho 432, 670 P.2d 839 (1983); *Chemical Bank v. Washington Pub. Power Supply Sys.*, 99 Wash. 2d 772, 666 P.2d 329 (1983); *Washington Supply System Defaults, Creating Uncertainties for Northwest*, 11 ENERGY USERS REP. (BNA) 757, 757-58 (July 28, 1983) [hereinafter cited as *WPPSS Default*]; *WPPSS Bond Ruling Threatens Financing in Northwest Region*, Wall St. J., June 17, 1983, at 1, col. 6.

⁷ See NUCLEAR PLANT CANCELLATIONS, *supra* note 3, at 4; U.S.: 77% of Reactors Cost Twice the Estimates, Phila. Inquirer, Jan. 18, 1984, at ID, col. 2 (100 reactors canceled since 1974).

⁸ See NUCLEAR PLANT CANCELLATIONS, *supra* note 3, at 5 table 1. The next wave of cancellations could be of plants much further along in the construction process. See *Powerless Feeling Utilities Face a Crisis Over Nuclear Plants; Costs, Delays Mount*, Wall St. J., Dec. 1, 1983, at 1, col. 6 [hereinafter cited as *Powerless Utilities*].

⁹ NUCLEAR PLANT CANCELLATIONS, *supra* note 3, at 36 table 9.

eight billion dollars.¹⁰ In addition, many of the recently completed or soon-to-be completed plants represent scores of billions of dollars¹¹ wasted on what now appears to be totally superfluous generating capacity. Although nuclear power plants account for the great majority of costly mistakes, other areas of the energy industry have had their share of expensive failures. Witness, for example, the recently abandoned liquefied natural gas terminal in Cove Point, Maryland,¹² the coal gasification plant nearing completion in North Dakota,¹³ and the liquefied natural gas terminal that began operations in 1983 in Lake Charles, Louisiana.¹⁴ The question of how to deal with the financial problems created by ill-advised investments in nuclear plants and other major energy projects is the most troublesome problem facing regulatory agencies today.

Part I of this Article sketches the historical background of the problem by contrasting the expectations of the 1970's with present conditions and predicted future conditions. Part II is a description of the major questions presented to regulatory agencies and the range of solutions attempted to date. Part III compares the economic consequences when major capital investments prove failures in competitive markets with the treatment such investments receive in traditional public utility regulation and considers what light the comparison throws on the proper course for regulation in the future. Part IV is a search for answers to the particular questions confronted by regulatory agencies in connection with investments that appear to be mistakes in retrospect. Finally, part V includes a discussion of the broader inferences to be drawn from the present regulatory morass.

The conclusions of this study are several. First, to an uncertain degree, the regulatory process itself sometimes creates an incentive to overinvest in assets. Second, the correct regulatory treatment of mistakes in retrospect would seem to involve both counteracting this incentive by preventing utilities' recovery of the costs associated with plants built in response to this incentive and creating incentives for correct

¹⁰ *Id.* at 64 table 15; see also *Deepening of Nuclear Woes: 2 Actions Stun Industry*, N.Y. Times, Jan. 17, 1984, at D1, col. 3.

¹¹ Electric utilities had \$47.5 billion invested in partially completed nuclear plants in 1982. This represents nearly 70% of all construction work in progress (CWIP). See 2 COSTS OF ELECTRICITY, *supra* note 2, at 41 n.9.

¹² See *FERC Wants Owners to Show Cause Why Two LNG Facilities Shouldn't Be Abandoned*, INSIDE F.E.R.C., Aug. 1, 1983, at 5.

¹³ See *Lower Oil Prices Cloud Loan Repayment for Great Plains, Consortium Tells DOE*, 11 ENERGY USERS REP. (BNA) 444 (Apr. 7, 1983).

¹⁴ See *FERC Orders Trunkline LNG to Show Cause Why Its Certificate Relating to Algerian LNG Import Project Should Not Be Revoked for Failure to Renegotiate the Contract Price*, FOSTER NATURAL GAS REP., July 21, 1983, at 8.

forecasting and decisionmaking similar to those present in an unregulated market. Third, the difficulty of quantifying the effect of the incentive to overinvest means that regulatory agencies will, at best, be relying on approximation, and the nature of regulation itself precludes the adoption of pure "market incentives" for correct forecasting.¹⁵ Fourth, new plants designed to serve several regulatory jurisdictions offer significant opportunities to improve the operation of the industry in the future. Yet, the present regulatory system discourages this socially desirable option. A new regulatory structure should be created specifically to permit construction of multijurisdiction plants. Fifth, because mistakes in retrospect derive at least in part from flaws in the regulatory system and because the impediments to correcting the problems are also rooted in the system, it may be time to reconsider the arguments against deregulation of electric generation in light of the problems created by mistakes in retrospect.

I. HISTORICAL CONTEXT

A first step in addressing any policy issue is to understand its genesis. The nuclear generating plants that are now causing such problems for the regulatory system were initiated in the early and mid-1970's. The reasoning upon which utilities and public power suppliers based those crucial decisions can be reconstructed by reviewing the forecasts of future conditions that were produced by respected experts in both the public and private sectors and heavily relied upon in planning. There were then, as there are today, differences of opinion among knowledgeable specialists in energy economics, but the majority of forecasts published by industry and the federal government agreed on several critical decisionmaking parameters.

A. *The Forecasts of the 1970's*

In the early 1970's, there were a number of forecasts that played a major part in the decision to build plants that now seem to have been ill-considered. First, demand for electricity was expected to increase by approximately seven percent annually for the foreseeable future.¹⁶ This demand forecast meant that the typical electric utility had to be prepared to supply almost twice as much electricity in the early 1980's as it was supplying in the early 1970's. The forecast of steadily increasing demand played a crucial role in decisions to commit large amounts of

¹⁵ See *infra* text accompanying notes 167-90.

¹⁶ NUCLEAR PLANT CANCELLATIONS, *supra* note 3, at 7, 16 table 5.

capital to new plants.¹⁷

Second, in the mid-1970's, most forecasters predicted that new nuclear plants would cost substantially less to operate than existing oil- and gas-fired plants.¹⁸ The oil price shock of 1973 to 1974 and the increasingly severe shortage of natural gas from domestic sources led to forecasts that oil and gas prices would escalate for the foreseeable future at a rate far above the general inflation rate.¹⁹ Oil and gas, moreover, were characterized as "insecure fuels" whose continued use to generate electricity would be harmful to the national interest. Reliance upon oil could endanger the nation by increasing its dependence upon the members of the Organization of Petroleum Exporting Countries (OPEC) and thereby exposing the United States to the threat of future embargoes and international strife.²⁰ Use of natural gas to generate electricity would harm the nation by aggravating the already severe shortage of natural gas, thus jeopardizing the future availability of gas for residential, commercial, industrial feedstock, and industrial process uses.²¹ Electricity generated in nuclear power plants (and coal-fired plants) was expected to cost substantially less than electricity generated

¹⁷ See *id.* at 7, 11-15 table 4. Table 4 shows that lower forecasted load growth played a part in a significant number of decisions to cancel nuclear plants.

¹⁸ See *id.* at 28.

¹⁹ See SEN. COMM. ON ENERGY & NAT. RESOURCES, 95TH CONG., 2D SESS., ENERGY: AN UNCERTAIN FUTURE 212-329 (Comm. Print 1978) [hereinafter cited as UNCERTAIN FUTURE]; see also U.S. CONG. BUDGET OFF., PROMOTING EFFICIENCY IN THE ELECTRIC UTILITY SECTOR 22 (1982) (oil and natural gas prices assumed to escalate at a rate four percent faster than the rate of overall inflation).

The increasing price of oil and natural gas and the decreasing supply of both made the use of nuclear plants far more attractive. In 1973 and 1974, during the height of the Arab oil embargo, some forecasts indicated that by the year 2000 nuclear power would supply as much as 2,000 gigawatts of electrical generating capacity. These estimates were quickly replaced by far more conservative ones. See SUBCOMM. ON ENERGY & POWER OF THE HOUSE COMM. ON INTERSTATE & FOREIGN COMMERCE, 95TH CONG., 2D SESS., U.S. ENERGY DEMAND AND SUPPLY 1976-1985, LIMITED OPTIONS, UNLIMITED CONSTRAINTS 70-71 (Comm. Print 1978).

²⁰ See, e.g., U.S. DEP'T OF ENERGY, *supra* note 1, at 10-11 (outlining the possible dangers of continued reliance on oil produced in the Persian Gulf area).

²¹ For evidence that periodic, severe natural gas shortages were taken as a given, see, for example, 18 C.F.R. § 2.78 (1983). This regulation provides priority-of-service categories for the utilization and development of natural gas. Residential and small-volume commercial users are given highest priority. *Id.* § 2.78(a)(1)(i). The next highest priority is given to large commercial requirements, firm industrial requirements for plant protection, feedstock and process needs, and pipeline customer storage injection requirements. *Id.* § 2.78(a)(1)(ii). The regulation sets forth a total of nine priority-of-service categories applicable to natural gas deliveries made by pipeline companies during periods of curtailed deliveries. See *id.* § 2.78(a)(1).

This regulation codified Federal Power Commission actions, which had been based upon recognition of "the critical shortage of natural gas supply and its effect on this Nation's progress." FPC Order No. 467, UTIL. L. REP. FPC Orders 1935-1973 (CCH) ¶ 5477 (1973).

in oil- and gas-fired plants and yet involve none of the supply security problems associated with oil and gas.²²

This second forecast—that the nuclear generation would for the foreseeable future be less expensive and more secure—was significant to utility decisionmakers for two reasons. First, this projection suggested that any new power plants needed either to meet expected increases in demand or to replace obsolete plants should be designed to burn a fuel other than oil or gas; this translated, as a practical matter, into a determination that all new plants should be coal or nuclear.²³ Most utilities chose a mix of coal and nuclear plants.²⁴ Second, the predicted cost differential between electricity generated with oil and gas and electricity generated with coal and nuclear fuel was so great that it suggested utilities should retire oil- and gas-fired plants prematurely and replace them with coal and nuclear plants.²⁵

Thus, in the early 1970's, electric utilities had numerous reasons to believe that they were serving the interests of society by initiating the construction of hundreds of new nuclear power plants. Reliance on forecasts of future demand for electricity and of the future availability and cost of alternative fuels allowed utilities reasonably to conclude that these new plants would decrease electricity rates, while simultaneously furthering the national policies of reducing dependence on imported oil and ameliorating the shortage of natural gas.

B. *The Reality of the 1970's and Early 1980's*

History has not confirmed the accuracy of the forecasts of the 1970's. Each of the critical items on which general consensus existed in the 1970's is subject to serious dispute today.

Demand for electricity has not increased at nearly the seven percent annual rate forecast. Between 1973 and 1981, electricity demand increased at an average annual rate of less than three percent,²⁶ and in 1982 it actually decreased by over two percent.²⁷ In short, less than half

²² NUCLEAR PLANT CANCELLATIONS, *supra* note 3, at 28.

²³ Indeed, Congress prohibited the use of "natural gas or petroleum as a primary energy source in any new electric powerplant" constructed or reconstructed after November 1978. Powerplant and Industrial Fuel Use Act of 1978, Pub. L. No. 95-620, 92 Stat. 3298 (codified at 42 U.S.C. § 8311 (1976 & Supp. V 1981)). See generally Symposium: *The Powerplant and Industrial Fuel Act of 1978*, 29 U. KAN. L. REV. 297 (1981).

²⁴ See 1 COSTS OF ELECTRICITY, *supra* note 2, at 18 figure 1, 28-29, 32 figure 4.

²⁵ See U.S. DEPT OF ENERGY, THE NATIONAL ELECTRIC RELIABILITY STUDY: FINAL REPORT (1981).

²⁶ Studness, *Electric Demand and the Nation's Energy Consumption*, 111 PUB. UTIL. FORT., June 9, 1983, at 54.

²⁷ Johnson, *Why Electric Power Growth Will Not Resume*, 111 PUB. UTIL.

the increased demand for electricity expected by this time has materialized. As a result, most utilities today have substantial excess capacity,²⁸ and many of the plants that were initiated to meet expected increases in demand can no longer be justified solely on that basis.²⁹

The oil market also has not behaved in the manner forecast in the 1970's. Oil prices increased dramatically in 1973 and 1974,³⁰ but this rapid increase was followed by a period of five years in which oil prices were relatively constant.³¹ A second dramatic increase occurred in 1979.³² After reaching a peak in 1981, crude oil prices have declined substantially,³³ a worldwide oil glut has developed, and the continuing vitality of the OPEC cartel has been seriously threatened. As a result of these developments, today's oil prices are substantially below the forecasts upon which were predicated many decisions to build nuclear plants to replace oil-fired plants.³⁴

The changes in the world oil market in the past few years also have weakened the "national interest/insecure fuel" rationale for replacing oil- and gas-fired plants with nuclear plants. The United States is now importing far less oil than it did during the late 1970's,³⁵ and the sources of the oil that is imported are more diverse than they were in the 1970's.³⁶ Thus, concern about a possible cessation of oil imports resulting from changes in geopolitical conditions has diminished significantly.³⁷

FORT., Apr. 14, 1983, at 19, 20; see also U.S. DEP'T OF ENERGY, *ELECTRIC POWER ANNUAL* 32 figure 3 (1982) [hereinafter cited as *POWER ANNUAL*].

²⁸ See U.S. DEP'T OF ENERGY, *ELECTRIC POWER MONTHLY*, June 1982, at 87-91 (theoretical operating reserve was 28%) [hereinafter cited as *POWER MONTHLY*]; see also *infra* notes 175-76 and accompanying text.

²⁹ See ENERGY INFORMATION ADMIN., U.S. DEP'T OF ENERGY, *TRENDS IN THE CAPACITY UTILIZATION AND FUEL CONSUMPTION OF ELECTRIC UTILITY POWER-PLANTS, 1970-1978*, at 13 (1980) (between 1970 and 1978 the rate of increase in the amount of generating capacity exceeded the rate of increase in demand for electricity); *NUCLEAR PLANT CANCELLATIONS*, *supra* note 3, at 7.

³⁰ INT'L ENERGY AGENCY, *WORLD ENERGY OUTLOOK 80-82* (1982).

³¹ *Id.* at 82 figure 3.1. ○

³² U.S. DEP'T OF ENERGY, *MONTHLY ENERGY REV.*, Jan. 1983, at 80-81.

³³ *Id.*

³⁴ For instance, Middle South Utilities Company predicated its decision to construct the Grand Gulf nuclear plant on estimates that the price of oil, which was \$14 per barrel in early 1979, would be \$48 per barrel by 1985 and more than \$80 per barrel by 1990. Initial Brief of Middle South Energy, Inc. at 123, F.E.R.C. Docket No. 82-616 (July 13, 1983); see also *id.* at 99-104, 112-113, 119-120. In fact, the price of oil in 1983 was only \$29 per barrel. INT'L MONETARY FUND, *WORLD ECONOMIC OUTLOOK*, May 1983, at 145.

³⁵ U.S. DEP'T OF ENERGY, *supra* note 32, at 8 (imports dropped from 13.328 quadrillion BTU's in 1979 to 8.844 quadrillion BTU's in 1981).

³⁶ See *id.* at 36-37 (total imports from Arab OPEC states have declined from 1979 to 1982 while imports from non-OPEC sources have remained relatively constant).

³⁷ There is genuine doubt, as well, about the amount of oil actually saved by a

The natural gas market has produced similar surprises that have further eroded the basis for many of the decisions to build nuclear plants. Natural gas prices increased at a very high rate from 1973 through 1982.³⁸ In 1983, however, gas prices began to decline.³⁹ Moreover, the gas shortage that appeared in the early 1970's and reached crisis proportions during the winter of 1976-1977⁴⁰ has disappeared.⁴¹ That shortage has been replaced by a surplus so great that it has halted virtually all sales of new gas supplies and now threatens the financial viability of many gas producers.⁴² Thus, the national interest/insecure fuel justification for replacing gas-fired generators with nuclear plants has disappeared.

Finally, nuclear power plants have not become the reliable, inexpensive source of electricity projected by most experts in the early 1970's. Nuclear plants completed in 1983 cost approximately ten times the amount initially projected for such plants; recently completed plants have had an average construction cost of over three billion dollars⁴³ and have taken an average of twelve years to complete.⁴⁴ Moreover, the reliability of nuclear plants has been called into question as a result of the fact that a number of plants have been shut down,⁴⁵ some indefi-

shift towards reliance on nuclear generation. See *Potential Displacement of Oil by Nuclear Energy and Coal in Electric Utilities: Hearings Before the Subcomm. on Oversight and Investigations of the House Comm. on Interstate and Foreign Commerce*, 96th Cong., 2d Sess. 6 (1980) (testimony of George L. Weil, energy consultant) (disputing energy department and nuclear industry estimates of the amount of oil use displaced by nuclear energy).

³⁸ See Pierce, *Reconsidering the Roles of Regulation and Competition in the Natural Gas Market*, 97 HARV. L. REV. 345 (1983); Pierce, *Natural Gas Regulation, Deregulation, and Contracts*, 68 VA. L. REV. 63 (1982).

³⁹ See, e.g., FOSTER NATURAL GAS REP., June 30, 1982, at 12, 12a.

⁴⁰ See SUBCOMM. ON INTERGOVERNMENTAL RELATIONS OF THE SEN. COMM. ON GOVERNMENTAL AFFAIRS, 95TH CONG., 1ST SESS., THE STATUS OF THE NATION'S PREPAREDNESS FOR THE WINTER OF 1977-78, at 3-4 (Comm. Print 1977).

⁴¹ See *End of Gas Surplus Seen Spark for U.S. Drilling*, OIL & GAS J., Sept. 5, 1983, at 48, 48-49.

⁴² See Tussing & Barlow, *A Survival Strategy for Gas Companies in the Post-OPEC Era*, 111 PUB. UTIL. FORT., Feb. 3, 1983, at 13; FOSTER NATURAL GAS REP., July 21, 1983, app. at 1-7.

⁴³ See 2 COSTS OF ELECTRICITY, *supra* note 2, at 34 figure 9. Much of the escalation in the capital costs of such projects is attributable to unanticipated changes in the rate of inflation exacerbated by the long construction time of new nuclear plants. Currently such escalation costs account for a significant portion of the costs of such projects. See *id.* (escalation accounts for approximately \$1.2 billion on average in new plants). This factor may represent as much as 65% of the original estimated plant cost. *Id.* at 35 n.7.

⁴⁴ See U.S. DEP'T OF ENERGY, *supra* note 2, at 38. The lengthy construction period is often fraught with delays connected with licensing, regulatory-compliance, or construction. See ENERGY INFORMATION ADMIN., U.S. DEP'T OF ENERGY, NUCLEAR POWER REGULATION 129-55 (1980) [hereinafter cited as POWER REGULATION].

⁴⁵ See, e.g., *Pennsylvania Pub. Util. Comm'n v. Metropolitan Edison Co.*, 37 Pub.

nately, because of safety risks associated with their design, construction, or operation.⁴⁶

As a result of the significant disparity between prediction and reality, the completion of a new nuclear plant creates a situation far different from that originally expected. Instead of lowering electricity rates, a new plant usually increases rates dramatically,⁴⁷ sometimes by more than fifty percent.⁴⁸ Instead of providing a badly needed increment of new supply, a new plant typically adds to a utility's preexisting margin of excess generating capacity.⁴⁹ As utilities have recognized the growing disparity between the market conditions forecast and reality, they have canceled many partially completed plants. Cancellation decisions invariably are followed by requests for rate increases to recover the full cost of investments in canceled plants.⁵⁰ This is the historical background for the many painful decisions forced upon regulatory agencies today.

If the present regulatory crisis is a product solely of unavoidable errors in forecasting future conditions, the proper regulatory response seems obvious. Utilities should be allowed to recover all costs of canceled plants and of completed plants that represent excess capacity. Those costs should be considered an inevitable social cost and, as such, should be distributed widely across all segments of society through in-

Util. Rep. 4th (PUR) 77 (Pa. P.U.C. 1980) (Commission removes the Three Mile Island unit 1 plant from rate base because, inter alia, although undamaged by the March 1979 accident, unit 1 had been out of service for substantial amounts of time); accord *Jersey Cent. Power & Light Co.*, 85 N.J. 520, 428 A.2d 498 (1981).

⁴⁶ See generally REPORT OF THE GOVERNOR'S COMMISSION ON THREE MILE ISLAND (1980).

⁴⁷ See, e.g., *Alabama Power Co. v. Alabama Pub. Serv. Comm'n*, 422 So. 2d 767 (Ala. 1982) (utility sought 18% rate increase after placing nuclear plant on-line resulted in a \$4 million loss per month to utility).

⁴⁸ See *High Rate Requests Spread Out Costs of Plants*, New Orleans Times-Picayune, Sept. 11, 1983, § 1, at 20, col. 1 (reporting that the area's two utilities have requested rate increases that vary from 48% to 97% depending on the customer class); *The March of Events, New York: Shoreham-Related Rate Increase Filed*, 111 PUB. UTIL. FORT., June 23, 1983, at 49 (56.5% rate increase three-fourths of which is for recovery of costs of Shoreham nuclear plant).

⁴⁹ See, e.g., *Powerless Utilities*, *supra* note 8, at 19, col. 4 (Public Service Co. of Ind., with excess capacity of 47%, has recently announced plans to abandon its share in the Marble Hill Nuclear Plant). Revised forecasts of future "increases" in the demand for electricity indicate growing margins of excess generating capacity. See NUCLEAR PLANT CANCELLATIONS, *supra* note 3, at 70 (decrease in demand for electricity was cited as the sole reason for 17 unit cancellations and has contributed to cancellations of 34 other units); see also 1 COSTS OF ELECTRICITY, *supra* note 2, at 2 (many utilities have delayed completion of plants under construction or in planning due to declining demand growth and the consequent need to "work off large reserve capacity"); Wald, *Coal Plants Held Cheaper Than Nuclear*, N.Y. Times, Dec. 11, 1983, § 1, at 3, col. 4 (slowdown in growth of electricity demand combined with rising construction costs has caused cancellation of 87 plants since 1975).

⁵⁰ See generally NUCLEAR PLANT CANCELLATIONS, *supra* note 3, at 33-57.

creases in electricity rates.

There are three problems with this simple solution, however. First, allowing complete recovery would increase consumers' electric bills dramatically without producing any tangible benefit for the consumers. For this reason alone, the full recovery of investment costs has no chance of emerging from the regulatory process as a solution. Second, allowing utilities to transfer to consumers all the risks and costs of erroneous investment decisions produces results strikingly different from the results of erroneous investment decisions made by firms in unregulated markets.⁵¹ The vision of extreme dichotomy between the harsh consequences of mistakes in the private market in which most investors participate and what would be the virtually nonexistent consequences of mistakes in a regulated market in which investors were completely insulated from risks causes many to be skeptical of the proposed solution of allowing full recovery for bad investments.⁵²

Third, today's investment mistakes in retrospect may not be entirely attributable to unavoidable errors in utility forecasting.⁵³ Regulatory theory provides an alternative explanation for many utility investment decisions that appear in retrospect to have been imprudent. Economists Harvey Averch and Leland Johnson hypothesize that regulated utilities have an incentive to overinvest in capital assets.⁵⁴ The incentive to overinvest results from the fact that, under many conditions, the standard formula for calculating utility rates permits utilities to earn a rate of return in excess of their actual cost of capital.⁵⁵ This incentive could either induce a utility to predicate its decisions to invest in new plants on forecasts that were biased in favor of the need for new capacity or to err on the side of investing when in genuine doubt about the reliability of its forecasts. There is little doubt that the Averch and Johnson effect has existed at various times in the history of the electric utility industry, including the early 1970's. To the extent that the utilities' erroneous investment decisions were made in response to a regulatory incentive to overinvest, complete cost recovery may be inappropriate. Obviously, utilities should not be rewarded for wasteful investment

⁵¹ See *infra* text accompanying notes 168-90.

⁵² See NUCLEAR PLANT CANCELLATIONS, *supra* note 3, at 71.

⁵³ For example, one utility made no independent forecast but based its decision to construct several nuclear plants entirely on overly optimistic projections made by the potential supplier of the plant. See *Glamour of Nuclear Power Seduced the Industry*, New Orleans Times-Picayune, Sept. 11, 1983, § 1, at 19, col. 1; see also *infra* text accompanying notes 54-56.

⁵⁴ Averch & Johnson, *Behavior of the Firm Under Regulatory Constraint*, 52 AM. ECON. REV. 1052 (1962).

⁵⁵ *Id.* at 1059.

decisions based on biased forecast methodologies.

Unfortunately, it is impossible to determine the extent to which utility investment decisions were influenced by the Averch and Johnson effect for two reasons. First, the effect varies dramatically over time and among utilities, usually as a function of change in public sentiment toward utilities.⁵⁶ Second, the incentive relates not to actual regulatory conditions at a particular point in time but to expected regulatory conditions during the entire period in which the utility earns a return on the investment.

The principal obstacles to determining an appropriate regulatory response stem from the impossibility of quantifying and factoring out the effect of this incentive to overinvest. The impossibility of precisely quantifying the incentive makes it extraordinarily difficult to create a regulatory climate that does not provide an incentive for either under or overinvestment in plants.

II. MAJOR REGULATORY QUESTIONS AND SOLUTIONS TO DATE

It is impossible to address all of the legal and policy questions presented by the large energy projects that are in various stages of completion today. The issues raised span a vast spectrum from municipal law, to contract law,⁵⁷ to bankruptcy law,⁵⁸ to the intricacies of the synthetic fuels funding authority of the Department of Energy.⁵⁹ A series of fairly predictable regulatory decisions have to be made with respect to the vast majority of projects, however. These are: (1) whether a firm should be allowed to initiate construction of a new plant; (2) whether a firm should be required to cancel or abandon a plant; (3) whether a firm should be allowed to recover in its rates the costs of a canceled or abandoned plant; (4) whether a firm should be allowed to earn a return on a new plant; and, (5) how to handle a variety of decisions that may be labelled, for convenience, jurisdictional disputes.

⁵⁶ See Joskow, *Inflation and Environmental Concern: Structural Change in the Process of Public Utility Price Regulation*, 17 J.L. & ECON. 291 (1974). Indeed, in recent years, utilities seem to have experienced a *reverse* Averch-Johnson effect: they have been deterred from making capital investments because the rate of return allowed them by the regulators has consistently been lower than their market cost of capital. Navarro, *Save Now, Freeze Later: The Real Price of Cheap Electricity*, REGULATION, Sept./Oct. 1983, at 31, 32; see also *FERC as a Least-Cost Electric Regulator: Hearing Before the Subcomm. on Energy Conservation and Power of the Comm. on Energy and Commerce, House of Representatives*, 97th Cong., 2d Sess. 22-27 (1982) (statement of C.M. Butler, III, chairman of FERC) [hereinafter cited as *Butler Testimony*].

⁵⁷ See FOSTER NATURAL GAS REP., July 21, 1983, at 8.

⁵⁸ See *supra* note 6.

⁵⁹ See *DOE-Led Group to Weigh Great Plains Aid*, INSIDE ENERGY, Apr. 18, 1983, at 1.

Each of these questions will be considered initially as a discrete decision, but they are by no means independent. Each decision affects every other decision, and the underlying policy issues are common to all decisions.

A. *The Decision to Permit Construction of a Plant*

The decision to begin construction of a new generating plant is the utility's, at least in the first instance. In the case of a nuclear generating plant, the utility must obtain approval from the Nuclear Regulatory Commission (NRC),⁶⁰ but the scope of the NRC's authority is limited and does not encompass the utility's need for additional generating capacity.⁶¹ In some states, the utility must obtain prior approval from the state utility commission before it can begin a major project.⁶² Typically, such approval requires a finding that construction of the plant is in the public interest.⁶³ In some states, however, the legislature has declined to give the utility commission the power to certify new plants, leaving that decision entirely to the utility's management.⁶⁴

Even in states where the utility commission has no direct power over the decision to build a new plant, it often has some indirect control over that decision. For example, commissions often have the power to approve issues of securities by the utilities they regulate,⁶⁵ and some can withhold approval on the basis of the company's proposed use of the proceeds of the issue.⁶⁶ In other cases, a commission without direct regulatory power over utility construction plans may have an opportunity to review the prudence of such plants when asked to grant the utility a current rate increase, since utilities often predicate increased

⁶⁰ See 42 U.S.C. §§ 2131-2134, 2235 (1976 & Supp. V 1981).

⁶¹ *Pacific Gas & Elec. Co. v. State Energy Resources Conservation & Dev. Comm'n*, 103 S. Ct. 1713, 1724 (1983); see also *Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, Inc.*, 435 U.S. 519, 550 (1978) ("The [Atomic Energy] Commission's prime area of concern in the licensing context, . . . is national security, public health and safety.").

⁶² See *infra* note 191 and accompanying text.

⁶³ See, e.g., WIS. STAT. ANN. § 196.49 (West 1982).

⁶⁴ See, e.g., *Kelley v. Michigan Pub. Serv. Comm'n*, 412 Mich. 385, 396-400, 316 N.W.2d 187, 190-92 (1982) (Under the Michigan Utility Securities Act, MICH. COMP. LAWS ANN. § 460.301 (West 1970 & Supp. 1982), the Public Service Commission is not empowered to evaluate the reasonableness of the decision to build the project.); *Attorney Gen. v. Public Serv. Comm'n*, 118 Mich. App. 311, 324 N.W.2d 628 (1982); *Public Serv. Co. v. Oklahoma*, 645 P.2d 465 (Okla. 1982); see also Howe, *Progress of Regulation Trends and Topics, Utility Security Issues: The Scope of Commission Inquiry*, 110 PUB. UTIL. FORT., Oct. 14, 1982, at 61-64.

⁶⁵ See, e.g., 66 PA. CONS. STAT. §§ 1901-1903 (1979).

⁶⁶ See, e.g., *Pennsylvania Pub. Util. Comm'n v. Philadelphia Elec. Co.*, 501 Pa. 153, 460 A.2d 734 (1983).

cash flow needs on future construction plans.⁶⁷ Where the state commission has no direct authority to certify proposed new plants, however, a utility often has discretion to proceed with construction of a new plant. Indeed, several commission orders attempting to exercise indirect control over utility construction plans have been reversed by state courts on the grounds that the commission cannot regulate indirectly a decision which the legislature has not empowered it to regulate directly.⁶⁸

The decision to construct a new generating plant, or to authorize such construction, is complicated. At least in theory, the decision should be based on forecasts of such factors as demand for electricity in the area served by the utility, availability of power from the utility's other sources, the cost to the utility of oil, gas, coal, and uranium, the cost of constructing the plant, and the utility's cost of capital during the construction period. The accuracy of each of these forecasts is critically dependent upon the accuracy of assumptions concerning future economic conditions in the world, the nation, and the geographic area served by the utility, as well as the accuracy of assumptions concerning the future relationship between macroeconomic variables and conditions in specific markets for each form of energy.

Moreover, some forecasts will have to span longer periods of time than others. Some factors, such as construction cost and cost of capital, should be forecast for the construction period: ten to twelve years. Other factors, such as the demand for electricity and the cost of oil, gas, and uranium should be forecast for the expected life of the plant: thirty to forty years beginning at the end of the ten to twelve year construction period. Thus, for instance, a decision to build a new generating plant in 1973 must be based on forecasts of economic conditions through at least 2013. It is hard to imagine a more difficult and risky decision. Even forecasts of only a few of these factors made by well-qualified specialists and covering much shorter time periods have often proven extremely unreliable.⁶⁹

Yet the accuracy of these forecasts is critical to the utility and to the population it serves. Forces, such as the regulatory incentive to overinvest, that distort forecasting methodologies, or that provide an incentive consistently to err on the side of building new facilities, will have an obvious and adverse effect. If the utility's forecasts are biased in favor of building new plants or if the utility, when in genuine doubt over the necessity of a new plant, consistently responds to the incentive

⁶⁷ AMERICAN BAR ASS'N, PUBLIC UTILITY LAW 86, 101 (1979).

⁶⁸ See Howe, *supra* note 64, at 61-63.

⁶⁹ See UNCERTAIN FUTURE, *supra* note 19, at 17-56; see also ENERGY FUTURE 234-67 (R. Stobaugh & D. Yergin eds. 1979).

to overinvest, the utility or its customers must absorb millions or even billions of dollars in sunk costs attributable to a facility that may provide little or no benefit.⁷⁰

B. *The Decision to Cancel or Abandon a Plant*

The decision to cancel a partially completed plant or to abandon an operable plant is also the utility's in the first instance. In states where the utility commission lacks the authority to certify a new plant, it also lacks the power to order the cancellation or abandonment of a plant. Generally, states that grant the utility commission the power to certify a new plant also grant the commission statutory authority to order cancellation or abandonment of a plant.⁷¹ In some jurisdictions, however, the commission's power to order cancellation is limited by application of the constitutional prohibition against taking private property without just compensation.⁷² Agency power to cancel is limited by a combination of its initial approval of the plant and the utility's detrimental reliance upon such approval through investment of substantial capital in the plant.

Theoretically, the decision to cancel or abandon a plant should be analytically identical to the decision to initiate construction of a new plant, with two significant differences. First, forecasts of future conditions relied upon as the basis for a cancellation decision should be more accurate because the relevant future period is a few years closer than it was when the initial decision was made to construct the plant. Second, sunk costs are irrelevant to the cancellation decision. In deciding whether a partially completed plant should be finished or abandoned, the only costs that should be considered are the costs of completing the plant, the operating costs of the plant, and the opportunity costs associated with the inability to sell those relatively few components that have a net positive value upon removal from the plant. Thus, in the case of a typical nuclear plant, its high capital costs and low operating costs⁷³ make the stage of completion of the plant critical to the decision to cancel or complete. In terms of aggregate social welfare, the decision to

⁷⁰ An error on the other side can also be costly. See U.S. DEP'T OF ENERGY, *supra* note 2, at 37-39 (1982); see also U.S. CONG. BUDGET OFF., *supra* note 19, at 30-35. At best, such an error would yield much higher utility costs as a result of extensive use of high cost peaking units and obsolete baseload units. At worst, an underestimate of the need for new capacity would result in brownouts or rotating blackouts.

⁷¹ See *infra* note 199 and accompanying text.

⁷² See, e.g., *Public Serv. Co.*, 122 N.H. 1062, 1070, 454 A.2d 435, 440 (1982).

⁷³ See 2 COSTS OF ELECTRICITY, *supra* note 2, at 121 figure 22 (estimating higher combined fuel, operating, and maintenance costs for coal-fired plants than for nuclear plants in all but two regions of the country).

cancel a three-billion-dollar plant that is eighty percent complete is equivalent to a decision not to build a six-hundred-million-dollar plant. By extension, operable plants should only be abandoned if their operating costs alone exceed the cost of obtaining equal amounts of energy from other sources.

C. *The Regulatory Treatment of Completed Plants*

Once a plant is completed and operable, the capital investment in the plant ordinarily is added to the utility's rate base. This immediately affects the utility's rates through the standard ratemaking formula: $R = O + (B \times r)$, where R is the utility's allowed revenue requirement, O is its operating cost, B is rate base, and r is the utility's cost of capital.⁷⁴ B increases as the utility's investment increases. O increases to the extent of the annual depreciation of the plant but decreases to the extent that the new plant permits a reduction in the use of plants with higher operating costs (principally fuel costs). Therefore, the inclusion of a new plant in the ratemaking formula will have significant and immediate impact on rates.

A completed plant can be added to a utility's rate base to the extent that it passes one or both of two traditional regulatory tests: the prudent investment test and the used and useful test.⁷⁵ The prudent investment test is the regulatory analogue to the common law negligence doctrine.⁷⁶ If a utility makes an investment decision that is imprudent based on the information reasonably available to it at the time of its decision, all costs associated with that decision are disallowed in determining the rates the utility can charge.

All of a utility's investment or any portion thereof can be excluded from rates based upon a finding of imprudence in any utility decision related to the investment, including the decision to construct a plant; the decision not to cancel the plant; decisions regarding the design of, and the technology incorporated into, the plant, and the decision whether to allocate contractually some risks and costs associated with the plant to third parties.⁷⁷ Application of the prudent investment test almost always results in the inclusion of plant investments in rate

⁷⁴ See generally E. GELLHORN & R.J. PIERCE, *REGULATED INDUSTRIES* 96-100 (1982).

⁷⁵ See 1 A.J.G. PRIEST, *PRINCIPLES OF PUBLIC UTILITY REGULATION* 139-90 (1969).

⁷⁶ See *Missouri ex rel. Southwestern Bell Tel. Co. v. Missouri Pub. Serv. Comm'n*, 262 U.S. 276, 289 n.1 (1923) (Brandeis, J., dissenting); *Consumers Power Co.*, 14 Pub. Util. Rep. 4th (PUR) 1, 15-16 (Mich. Pub. Serv. Comm'n 1976).

⁷⁷ See *Consolidated Edison Co.*, 73 Pub. Util. Rep. 3d (PUR) 417, 429-42 (N.Y. Pub. Serv. Comm'n 1968).

base.⁷⁸ Undoubtedly, the infrequency of decisions to exclude is attributable to a combination of two factors. First, utility decisions are rarely blatantly imprudent when viewed in light of the knowledge and alternatives reasonably available to the utility's management at the time of the decision and the overall complexity of the considerations involved. The conditions forecast by experts in the 1970's,⁷⁹ for example, suggest that the utilities' decisions to build new plants during that period were reasonable and prudent at the time they were made. Second, the practical burden of proving imprudence is so high that most parties to utility rate cases are deterred from undertaking such an effort.⁸⁰ In order to succeed, any attempt to establish the imprudence of a utility's decision to construct a new plant would require extraordinarily large expenditures for the services of lawyers, economists, and engineers.⁸¹ Litigation costs of this magnitude exceed the resources available to most of the consumer groups and governmental bodies that participate in rate cases. Thus, the fact that utility decisions to build new plants are rarely held to be imprudent does not necessarily support an inference that virtually all such decisions are prudent.⁸²

The second traditional test for including a plant in rate base is the used and useful test. As its name suggests, the critical question under this test is whether the plant is actually used and useful to the utility in providing regulated services.⁸³ Historically, the used and useful test was employed primarily to exclude from the rate base investments in plants that are not yet operable, investments in assets that provide benefits exclusively to parties other than consumers of regulated services, and investments in plants that are no longer used because of obsolescence,

⁷⁸ My research has uncovered no case in which a utility's entire investment in an operating plant has been disallowed as imprudent. FERC has never held a utility investment imprudent. See *Butler Testimony*, *supra* note 56, at 55. Even cases disallowing a substantial portion of an investment as imprudent are rare. As examples of cases where a substantial portion was disallowed, see *Consumers Power Co.*, 14 Pub. Util. Rep. 4th (PUR) 1, 19 (Mich. Pub. Serv. Comm'n 1976); *Houston Lighting & Power Co.*, 50 Pub. Util. Rep. 4th (PUR) 157 (Tex. P.U.C. 1982).

⁷⁹ See *supra* text accompanying notes 16-25.

⁸⁰ Proving that a utility decision was imprudent obviously requires the presentation of a vast amount of data, most of which is far more accessible to the utility than to a challenger. Such challenges are, accordingly, rarely made and are even more rarely successful. See *Butler Testimony*, *supra* note 56, at 14, 18.

⁸¹ Even the Federal Energy Regulatory Commission does not have sufficient resources to determine whether a utility has acted prudently in deciding to build a particular plant. See *id.* at 14-18.

⁸² Indeed, the central thesis of this Article is that many such decisions were imprudent in that they were essentially products of the regulatory incentive to overinvest in capital assets.

⁸³ See, e.g., *Pennsylvania Pub. Util. Comm'n v. Metropolitan Edison Co.*, 29 Pub. Util. Rep. 4th (PUR) 502, 505-08 (Pa. P.U.C. 1979).

chronic mechanical failure, or an order from a government agency requiring termination of operations for a sustained period of time. Unlike the prudent investment test, the used and useful test does not make the finding of fault a prerequisite for the exclusion of an asset from rate base.⁸⁴

The relationship between the prudent investment test and the used and useful test has always been vague. Moreover, the many high-stake rate cases with which utility commissions recently have been confronted have done nothing to clarify that relationship. Because of the difference in focus between the two tests, the failure of one does not mean the failure of the other. A plant can be the product of imprudent decisions and yet be used and useful.⁸⁵ Conversely, a plant can be the product of prudent decisions but not be used and useful because of factors beyond the control of the utility or because of changes in conditions beyond the reasonable foresight of the utility.⁸⁶ A few cases have held that a utility must be allowed to reflect in its rates all investments that were prudent when made even if the resulting assets are not useful because of unforeseen changes in circumstances.⁸⁷ In most jurisdictions, however, the two tests operate as independent bases for excluding an asset from rate base.⁸⁸

Many recent cases have severely tested the traditional regulatory approach to new plants. Assume, for instance, that a utility with preexisting excess capacity completes a new nuclear generating plant and requests a substantial rate increase to reflect the addition of this three-billion-dollar investment to its rate base. The result would be a system with substantial excess capacity, a doubling or tripling of rate base, and a rate increase in the range of twenty-five to seventy-five percent.⁸⁹ This is the type of regulatory situation routinely faced by utility commissions at present.

In this situation, most commissions would probably conclude that the decision to build the new plant was prudent when made and that

⁸⁴ See, e.g., *id.*

⁸⁵ See, e.g., *Consumers Power Co.*, 14 Pub. Util. Rep. 4th (PUR) 1, 15, 19 (Mich. Pub. Serv. Comm'n 1976).

⁸⁶ *Pennsylvania Pub. Util. Comm'n v. Metropolitan Edison Co.*, 37 (Pub. Util. Rep.) 4th (PUR) 77, 86 (Pa. P.U.C. 1980).

⁸⁷ See, e.g., *Wisconsin Pub. Serv. Corp. v. Public Serv. Comm'n*, 109 Wis. 2d 256, 325 N.W.2d 867 (1982).

⁸⁸ See *Pennsylvania Pub. Util. Comm'n v. Metropolitan Edison Co.*, 37 Pub. Util. Rep., 4th (PUR) 77, 85, 93 (Pa. P.U.C.).

⁸⁹ See, e.g., *The March of Events, Arizona: Rate Increase Filed*, 111 PUB. UTIL. FORT., Aug. 4, 1983, at 55 (31% increase over an 18-month period); *The March of Events, Michigan: Electric Utility Files for Rate Increase*, 111 PUB. UTIL. FORT., Aug. 18, 1983, at 51 (36% increase over a three-year period); see also *supra* note 48 (rate increases of 48-97%).

the continuing decision not to cancel was also prudent.⁹⁰ The decision not to cancel is a day-to-day decision that should be based on the most recent forecasts of critical parameters, especially estimates of future demand and completion costs. In the situation just described those revised forecasts typically would have indicated less and less need for the plant. The apparent reduction in need for the plant, however, usually is accompanied by a reduction in the estimated cost of completion simply because the percentage of the plant remaining to be completed has decreased. Thus, agency determinations that utilities acted prudently in declining to cancel plants often reflect prudence in fact. On the other hand, some agency determinations may have more to do with the cost and difficulty of proving imprudence than the fact of prudence.⁹¹ It is impossible to determine what proportion of cases fall in the one category and what proportion in the other.

The used and useful test does not suit the typical nuclear generating plant situation any better than the prudent investment test. With the exception of a few plants that have been closed for safety reasons, new nuclear power plants clearly are "useful" in the sense that they are capable of generating electricity. They are also "used" to the maximum extent possible since they cost substantially less to operate than do fossil fuel plants.⁹² In another sense, however, a new nuclear plant may not be used and useful. If the utility had preexisting excess capacity such that the new plant represents a mere addition to excess capacity, the construction of the plant has clearly rendered some of the system's generating capacity no longer useful.

Regulators and reviewing courts have responded to this recurrent factual pattern in various ways. Many have allowed the inclusion of the entire investment in rate base.⁹³ This rate treatment is based on the reasoning that even though the utility now has substantial excess capacity that capacity was not the product of any imprudent decision by the utility and the new plant is both used and useful. This resolution is consistent with the traditional method of applying the two tests for inclusion of capital assets in rate base.

Some agencies have taken different approaches, however. In *Kansas City Power & Light Co.*,⁹⁴ the Missouri Commission disallowed the utility's investment in a new nuclear plant based on a finding that the

⁹⁰ See *supra* text accompanying notes 78-82.

⁹¹ See *supra* text accompanying notes 80-82.

⁹² See *supra* note 73.

⁹³ See, e.g., *Commonwealth Edison Co.*, 35 Pub. Util. Rep. 4th (PUR) 49 (Ill. Commerce Comm'n 1980); *Madison Gas & Elec. Co. v. Public Serv. Comm'n*, 105 Wis. 2d 385, 313 N.W.2d 847, 849-50 n.6 (Wis. Ct. App. 1981).

⁹⁴ 38 Pub. Util. Rep. 4th (PUR) 1 (Mo. Pub. Serv. Comm'n 1980).

company was imprudent in continuing to build the plant in the face of revised forecasts showing no need for the plant as early as four years before the plant was completed.⁹⁵ This decision is perhaps best described as disingenuous given that the very same commission had certified the plant based on a finding of need seven years earlier⁹⁶ and had made a subsequent finding of need just one year before it concluded that the utility was imprudent in not abandoning the project four years earlier.⁹⁷ How could the utility have known that the plant was not needed in 1976, when the Commission found that it was needed in 1973 and 1979?

In *Montana-Dakota Utilities Co.*,⁹⁸ the North Dakota Commission disallowed a portion of the utility's investment in a new coal-fired generating plant previously certified by the Commission. Using a questionable definition of excess capacity,⁹⁹ the Commission found that the new plant created a condition of substantial excess capacity in the system.¹⁰⁰ The Commission also found that this excess capacity was attributable to an unanticipated regional decline in the demand for electricity rather than to imprudent decisions by the utility.¹⁰¹ Nevertheless, the Commission held that the portion of the utility's investment in the plant that corresponded to the excess capacity on the system should be denied inclusion in rate base.¹⁰² The Commission reasoned that even though the new plant was fully used and useful, it was the new plant that created the excess capacity.¹⁰³ The Commission also concluded that its treatment of excess capacity would provide utilities a needed incentive to forecast accurately.¹⁰⁴

In *Park Towne v. Pennsylvania Public Utilities Commission*,¹⁰⁵ the Pennsylvania Commission had chosen a different remedy when confronted with facts similar to those considered by the North Dakota

⁹⁵ *Id.* at 14.

⁹⁶ *Id.* at 9.

⁹⁷ *Id.* at 38 (Fraas, Comm'r, dissenting).

⁹⁸ 44 Pub. Util. Rep. 4th (PUR) 249 (N.D. Pub. Serv. Comm'n 1981).

⁹⁹ Compare *infra* text accompanying notes 209-25 (suggesting the need for a comprehensive definition of "excess" capacity, which would take into account adequate reserve margins, temporary surpluses to make use of economies of scale, and other market considerations with *Montana-Dakota Util. Co.*, 44 Pub. Util. Rep. 4th (PUR) at 254-56 (defining excess capacity as the difference between peak generating capability and the sum of peak load plus reserve obligations).

¹⁰⁰ *Montana-Dakota Util. Co.*, 44 Pub. Util. Rep. at 254.

¹⁰¹ *Id.* at 255.

¹⁰² *Id.* at 256.

¹⁰³ *Id.*

¹⁰⁴ *Id.* at 255-56.

¹⁰⁵ 61 Pa. Commw. 285, 433 A.2d 620 (1981) (reviewing and upholding a decision of the Pennsylvania Public Utilities Commission).

Commission. Because the addition of a new plant created excess capacity on the system, the Commission excluded the Philadelphia Electric Company's remaining investment in several old plants from rate base on the theory that the excess capacity created by the new plant rendered the old plants no longer useful. The Commonwealth Court of Pennsylvania upheld the Commission's decision.

The Connecticut Commission took yet another approach in *Connecticut Light & Power Co.*¹⁰⁶ Although it found that recent additions of nuclear power plants had produced excess capacity it simultaneously found that these additions had improved the utility's generating mix by allowing a reduction in the use of high-operating-cost fossil fuel units.¹⁰⁷ The Commission apparently feared that inclusion of the utility's full investment in excess capacity in rate base might encourage the utility to increase peak load demand in order to reduce the appearance of excess capacity.¹⁰⁸ To forestall this possibility, the Commission indicated its intent to establish a ceiling on the amount of excess capacity that could be included in rate base subject to potential exemption if the utility demonstrates that it has obtained conservation and efficiency gains.¹⁰⁹

The Iowa Commission recently rejected both the prudent investment test and the used and useful test as inappropriate for regulating utilities with excess capacity. In *Iowa Public Service Co.*¹¹⁰ the Commission took the position that the prudent investment test was inadequate because it failed to provide utility management with an incentive constantly to rethink investment decisions in light of new developments.¹¹¹ The Commission also rejected application of the used and useful test in a manner that disallowed all return on investments in excess capacity because it concluded that such a decision would impose upon management an impossible standard the nonattainment of which would result in an extreme financial penalty.¹¹² The Commission chose instead an approach that it described as balancing the interests of inves-

¹⁰⁶ 30 Pub. Util. Rep. 4th (PUR) 67 (Conn. Div. of Pub. Util. Control 1979).

¹⁰⁷ *Id.* at 92.

¹⁰⁸ *Id.*

¹⁰⁹ *Id.* at 92-93.

¹¹⁰ 46 Pub. Util. Rep. 4th (PUR) 339 (Iowa Commerce Comm'n 1982); see also *Iowa Power & Light Co.*, 51 Pub. Util. Rep. 4th (PUR) 405, 418-19 (Iowa Commerce Comm'n 1983). The Iowa approach was explicitly endorsed by the Wisconsin Supreme Court in *Madison Gas & Elec. Co. v. Public Serv. Comm'n*, 109 Wis. 2d 127, 136, 325 N.W.2d 339, 344 (Wis. 1982). The approach was codified with modifications on July 1, 1983, when the Iowa legislature adopted IOWA CODE § 476.53 (Supp. 1983).

¹¹¹ 46 Pub. Util. Rep. 4th (PUR) at 367-68.

¹¹² *Id.* at 368.

tors and consumers.¹¹³ It established a formula through which the utility's rate of return is reduced by an amount proportionate to its excess capacity.¹¹⁴

As the preceding discussion indicates, utility commission treatment of excess capacity has not yet crystallized into a single clear pattern. Commissions, reviewing courts, and legislatures are participating in a dynamic process with no specific conclusion in sight. It is safe to assume, however, that regulatory treatment of excess capacity will continue to range from total disallowance of excess capacity, at one extreme, to total allowance at the other.

D. *The Regulatory Treatment of Canceled or Abandoned Plants*

If a utility chooses to cancel a partially completed plant or is ordered to do so by a commission, the commission must determine the appropriate treatment of the utility's investment in the canceled plant. An analogous situation arises when a utility decides to abandon an operable plant. The investment at issue in the case of an abandoned plant, however, exceeds the typical investment in a canceled plant. In such cases, the utility normally asks for a rate increase to reflect complete amortization of the investment in the canceled plant over a relatively short period, five years for example, combined with a rate of return on the unamortized balance of the investment. In reviewing such a request, the commission typically applies some combination of the prudent investment test and the used and useful test.¹¹⁵ Application of the prudent investment test requires analysis of both the original decision to commence construction and the subsequent decision to cancel the partially completed plant. As is the case with newly completed plants, utility commissions rarely find any decision associated with a canceled plant imprudent. Instead, commissions routinely conclude that the utility acted prudently at each point of decision.¹¹⁶ To what extent these findings reflect the actual prudence of utility investment decisions and to what extent the heavy burden of proof imposed by the prudent investment test on the opponents of rate increases is, again, impossible to determine.¹¹⁷

¹¹³ *Id.*

¹¹⁴ *Id.* at 370-71. The Commission's description of the formula is set out *infra* note 222.

¹¹⁵ See, e.g., Virginia Elec. & Power Co., 29 Pub. Util. Rep. 4th (PUR) 65, 80-81 (Va. Corp. Comm'n 1979).

¹¹⁶ See, e.g., Virginia Elec. & Power Co., 44 Pub. Util. Rep. 4th (PUR) 46 (Va. Corp. Comm'n 1981); San Diego Gas & Elec. Co., 31 Pub. Util. Rep. 4th (PUR) 435 (Cal. P.U.C. 1979).

¹¹⁷ See *supra* text accompanying notes 76-81.

The virtually automatic finding of prudence, however, does not necessarily mean that the utility will be granted the rate treatment it requests for its investment in canceled plants, although a majority of commissions do allow some recovery.¹¹⁸ A few commissions allocate all the costs of the investment to consumers, but most divide the costs between the utility and consumers by allowing the utility to recover only its out-of-pocket costs, on terms less favorable than those sought by the utility, and with some costs disallowed.¹¹⁹ The Maine Commission's decision in *Bangor Hydroelectric Co.* is typical.¹²⁰ The utility was permitted to amortize its investment over a five-year period, but it was not permitted to include the unamortized balance in its rate base and it was not permitted to recover its allowance for funds used during construction (AFUDC).¹²¹ The New Jersey Board of Public Utilities arrived at a similar result in *Public Service Electric & Gas Co.*,¹²² except that it extended the amortization period to fifteen years,¹²³ thereby decreasing the percentage of the utility's investment that could be recovered in rates. The Commission reasoned that the company was strong enough financially to endure a prolonged period of recovery and that the shorter period requested by the company would impose too heavy a burden on its ratepayers.¹²⁴ The decision of the Maine Commission produced an allocation of the costs of the investment in the canceled plant of fifty-one percent to the utility and forty-nine percent to con-

¹¹⁸ See NUCLEAR PLANT CANCELLATIONS, *supra* note 3, at 44-45 table 10 (of decisions allocating costs exceeding \$50 million, 26 have allowed partial recovery of costs, 11 have allowed full recovery, and 8 have denied all recovery).

¹¹⁹ The New York Public Service Commission has consistently permitted the allocation of all prudently incurred expenses to consumers. See, e.g., *Rochester Gas & Elec. Corp.*, 45 Pub. Util. Rep. 4th (PUR) 386 (N.Y. Pub. Serv. Comm'n 1982). The North Carolina Utilities Commission allowed full recovery for the abandonment of North Anna unit 4. See, e.g., *Virginia Elec. & Power Co.*, 48 Pub. Util. Rep. 4th (PUR) 327, 354 (N.C. Util. Comm'n 1982); see also NUCLEAR PLANT CANCELLATIONS, *supra* note 3, at 49-50; *A Survey of Regulatory Treatment of Plant Cancellation Costs*, 111 PUB. UTIL. FORT., Mar. 31, 1983, at 52.

¹²⁰ 46 Pub. Util. Rep. 4th (PUR) 503 (Me. P.U.C. 1982). Cf. *Central Me. Power Co. v. Public Util. Comm'n*, 433 A.2d 331, 341-45 (Me. 1981) (Commission finds that, although investments in nuclear plant were not imprudent, the plant was not used and useful. The commission therefore authorized the company to amortize some expenses over a five-year period but did not allow it to amortize associated allowance for funds used during construction (AFUDC)).

¹²¹ *Bangor Hydroelec. Co.*, 46 Pub. Util. Rep. 4th (PUR) at 556-58.

¹²² *Jersey Cent. Power & Light Co.*, 44 Pub. Util. Rep. 4th (PUR) 54 (N.J. Bd. Pub. Util. 1981).

¹²³ *Id.* at 57-58.

¹²⁴ The utility company had suggested that amortization take place over a 10-year period with the inclusion of the unamortized investment in the rate base. Staff and rate counsel recommended successfully, however, that the loss be shared between ratepayers and the company's stockholders over a 15-year amortization period. *Id.* at 57.

sumers,¹²⁵ while the New Jersey Board effectively allocated eighty-four percent of the costs to the utility and sixteen percent to consumers.¹²⁶

Commission decisions allowing the recovery of investments in canceled plants but not allowing the recovery of the entire cost of the capital component of such investments are based on one interpretation of the used and useful test.¹²⁷ The rationale is that because the investment never produced a used and useful asset, the utility is not entitled to a return on the investment, but because the investment resulted from a prudent decision made in an effort to serve consumers, the utility is entitled to recover the investment itself, defined to exclude all costs of capital.

Some decisions, however, have permitted neither a return on nor a return of the utility's investment in a canceled plant.¹²⁸ For example, in *Office of Consumers' Counsel v. Public Utilities Commission*, the Ohio Supreme Court held that the Ohio Commission does not have the statutory power to authorize recovery of any portion of an investment in a canceled plant because such an investment does not meet the statutory definition of an "ordinary expense."¹²⁹

As is the case with the excess capacity issue, the principles to be applied to investments in abandoned plants are still unsettled in many jurisdictions. Many commissions are in the process of considering, or reconsidering, how such investments should be treated.¹³⁰ Some state courts have reversed commission decisions in this area,¹³¹ and many more cases are presently pending. A number of state legislatures are considering statutory solutions to the problem.¹³² A few states now have statutes that may be interpreted to require disallowance of all invest-

¹²⁵ See NUCLEAR PLANT CANCELLATIONS, *supra* note 3, at 56 table 12.

¹²⁶ *Id.*

¹²⁷ See, e.g., *Virginia Elec. & Power Co.*, 29 Pub. Util. Rep. 4th (PUR) 65 (Va. Corp. Comm'n 1979).

¹²⁸ See, e.g., *Pacific Power & Light Co.*, 53 Pub. Util. Rep. 4th (PUR) 24 (Mont. Pub. Serv. Comm'n 1983); *Pacific Power & Light Co.*, 49 Pub. Util. Rep. 4th (PUR) 82 (Or. P.U.C. 1982); see also NUCLEAR PLANT CANCELLATIONS, *supra* note 3, at 50-51; *A Survey of Regulatory Treatment of Plant Cancellation Costs*, *supra* note 119.

¹²⁹ 67 Ohio St. 2d 153, 164, 423 N.E.2d 820, 827 (1981). See also *Dayton Power & Light Co. v. Ohio Pub. Util. Comm'n*, 4 Ohio St. 3d 91, 447 N.E.2d 733 (1983); *Cleveland Elec. Illuminating Co. v. Ohio Pub. Util. Comm'n*, 4 Ohio St. 3d 107, 447 N.E.2d 746 (1983).

¹³⁰ See, e.g., *The March of Events, North Carolina: Cherokee Unit 1 Canceled*, 111 PUB. UTIL. FORT., May 26, 1983, at 54. See generally NUCLEAR PLANT CANCELLATIONS, *supra* note 3, at 43-57 (description of the different approaches taken).

¹³¹ See, e.g., *Office of Consumer's Counsel v. Public Util. Comm'n*, 67 Ohio St. 2d 153, 423 N.E.2d 820 (1981); *Wisconsin Pub. Serv. Corp. v. Public Serv. Comm'n*, 109 Wis. 2d 256, 325 N.W.2d 867 (1982).

¹³² See, e.g., *The March of Events, Connecticut: Millstone Cost Cap and CWIP Bills Advance*, 111 PUB. UTIL. FORT., May 26, 1983, at 52-53.

ments in canceled plants,¹³³ and the number of states with statutes of this type is likely to increase over time. Such statutes are part of a distinct trend to allocate an increasing proportion of the costs of canceled plants to the utilities.¹³⁴

E. *Multijurisdictional Disputes*

Because of the substantial economies of scale and coordination inherent in generating and transmitting electricity,¹³⁵ it is increasingly common for several utilities operating in different states to sponsor jointly a new generating plant.¹³⁶ These multijurisdiction plants, however, present particularly troublesome regulatory problems because regulation has traditionally been geared to the state level. Utilities have adopted two different structures for jointly sponsored multijurisdiction projects: one approach has been to set up the plant under the joint ownership of all the companies concerned,¹³⁷ and the other approach has been to vest ownership in a single company and then allocate by contract the capacity, costs, and risks among all the utilities involved.¹³⁸ These two ownership structures produce very different sets of regulatory problems and outcomes, particularly in the context of canceled or abandoned plants.¹³⁹

The Palo Verde generating plant illustrates the typical regulatory treatment of a plant that is jointly owned with no contractual allocation of costs and risks. Arizona Public Service Company joined with several

¹³³ See e.g., OHIO REV. CODE ANN. § 4909.15 (Page 1980); See also Note, Consumer's Counsel v. Public Utilities Commission: *Who Shall Bear the Cost of Abandonment*, 11 CAP. U.L. REV. 91, 95-96 (1981).

¹³⁴ Regulators can allocate all of the costs of an abandoned plant to the utility by allowing no portion of the investment in the plant in rates. Alternatively, they can allocate almost all of the cost of the plant to the utility by allowing recovery of out-of-pocket costs but disallowing all costs of capital and providing that the out-of-pocket costs be recovered over a long amortization period. See NUCLEAR PLANT CANCELLATIONS, *supra* note 3, at 56 table 12; *Missouri: Commission Denies Recovery Costs for Nuclear Unit*, 112 PUB. UTIL. FORT., Dec. 8, 1983, at 52; *North Carolina Modifies Abandonment Loss Policy*, 112 PUB. UTIL. FORT., Nov. 24, 1983, at 66.

¹³⁵ See P.L. JOSKOW & R. SCHMALENSSEE, DEREGULATION OF ELECTRIC POWER: A FRAMEWORK FOR ANALYSIS 63-65 (1982).

¹³⁶ See Willrich & Kubitz, *Why Not Regional Electric Power Generation Companies?*, 111 PUB. UTIL. FORT., June 9, 1983, at 25.

¹³⁷ See, e.g., Arizona Pub. Serv. Co., 38 Pub. Util. Rep. 4th (PUR) 547 (Ariz. Corp. Comm'n 1980).

¹³⁸ See, e.g., South Dakota Util. Comm'n v. FERC, 690 F.2d 674 (8th Cir. 1982); see also *infra* note 147 and accompanying text.

¹³⁹ See generally NUCLEAR PLANT CANCELLATIONS, *supra* note 3, at 44-45 table 10 (of 47 state commission decisions dealing with cancellation or abandonment costs exceeding \$50 million, 20 involved multijurisdiction plants).

California utilities to build a nuclear generating plant.¹⁴⁰ When the California regulatory authorities made clear that they would not accord favorable treatment to the California utilities' share of the multijurisdiction project, those utilities withdrew, and the project was canceled.¹⁴¹

The Arizona utility then attempted to recover its investment in the canceled plant through a multiyear amortization, but, in *Arizona Public Service Co.*, the Arizona Commission disallowed the utility's investment in the canceled plant. The Commission interpreted Arizona's statute as forbidding any recovery of investments in assets that never become used and useful.¹⁴² It noted that the sole reason for cancellation of the plant was a change in California regulatory conditions.¹⁴³ Thus, it apparently based its decision partly on the principle that Arizona ratepayers should not be required to pay costs attributable to the regulatory policies of other states.¹⁴⁴ The Commission emphasized that Arizona Public Service Company could have protected itself by entering into contracts allocating the risks of cancellation to the cosponsoring California utilities.¹⁴⁵

The Tyrone generating plant illustrates the regulatory treatment of a plant that is owned by a single company subject to contracts allocating risks among several utilities. The plant was cosponsored by affiliated companies providing electricity to four states: Wisconsin, Minnesota, North Dakota, and South Dakota.¹⁴⁶ The plant was owned by the company serving Wisconsin, the state in which the plant was to be located, but the costs associated with the plant were allocated contractually among the sponsoring companies in proportion to the percentage of the generating capacity that was to be allocated to each.¹⁴⁷ The Wis-

¹⁴⁰ See *Arizona Pub. Serv. Co.*, 38 Pub. Util. Rep. 4th (PUR) 547, (Ariz. Corp. Comm'n 1980).

¹⁴¹ *Id.* at 556.

¹⁴² *Id.* at 547.

¹⁴³ *Id.* at 556.

¹⁴⁴ *Id.*

¹⁴⁵ *Id.*

¹⁴⁶ See *Northern States Power Co. v. Hagen*, 314 N.W.2d 32 (N.D. 1981).

¹⁴⁷ See *Northern States Power Co.*, 42 Pub. Util. Rep. 4th (PUR) 339, 358 (Minn. P.U.C. 1981). The Minnesota Commission described the allocation agreement as follows:

[The] agreement was designed to apportion joint costs of generating facilities between the two corporate entities. Costs of production, transmission, and related operating and maintenance are shared based upon predetermined ration [sic] set so that the costs assumed by each company reflect the demand and energy requirements each company imposes on the integrated system. Fixed costs are split between the companies based upon a rolling average ratio developed from coincident summer and winter peak demands from the preceding four years plus one projected year.

Id.

consin company received advance approval to construct the plant from the Wisconsin Commission.¹⁴⁸ The Wisconsin Commission, however, subsequently reversed its position and denied the company permission to construct and operate the plant.¹⁴⁹ The Wisconsin company then decided to abandon the plant and filed requests for rate increases to reflect amortization of its investment in the plant.¹⁵⁰ The request for rate increases to cover the portion of the canceled plant contractually allocated to the companies serving the other three states was filed with the Federal Energy Regulatory Commission (FERC).¹⁵¹ That rate increase request was subject to FERC jurisdiction, rather than state jurisdiction, because it involved sales for resale in interstate commerce regulated by the Federal Power Act.¹⁵² FERC found the utility's decisions prudent, and, in accordance with its standard policy on investments in canceled plants,¹⁵³ it granted the rate increase to the extent necessary to permit the company to amortize its investment, including AFUDC, over a ten-year period.¹⁵⁴

The companies that were required to pay the rate increase resulting from the FERC action filed companion rate increase requests with the state commissions that regulate rates in the states they serve: Minnesota, South Dakota, and North Dakota. The Minnesota¹⁵⁵ and North Dakota¹⁵⁶ Commissions refused to grant the rate increase requests. The reasoning of the Minnesota Commission is illuminating. The Commission rested its adverse decision on two grounds. First, the Minnesota Commission concluded that the Wisconsin Commission's denial of permission to complete and operate the plant was erroneous.¹⁵⁷ Second, the Minnesota Commission concluded that, in any event, rate-payers in one state should not be required to pay for the consequences of decisions by regulatory agencies in other states.¹⁵⁸ The rate orders of

¹⁴⁸ *Id.* at 359.

¹⁴⁹ *Id.*

¹⁵⁰ *Id.*

¹⁵¹ See Northern States Power Co., [1979-1982 Transfer Binder] UTIL. L. REP. (CCH) ¶ 12,516, at 15,983 (F.E.R.C. 1981), *aff'd sub nom.* South Dakota Util. Comm'n v. FERC, 690 F.2d 674 (8th Cir. 1982).

¹⁵² 16 U.S.C. §§ 824-824k (1982).

¹⁵³ See Northern States Power Co., [1979-1982 Transfer Binder] UTIL. L. REP. (CCH) ¶ 12,516, at 15,987 (F.E.R.C. 1981).

¹⁵⁴ FERC's decision was upheld by the Eighth Circuit in South Dakota Util. Comm'n v. FERC, 690 F.2d 674 (8th Cir. 1982).

¹⁵⁵ Northern States Power Co., 42 Pub. Util. Rep. 4th (PUR) 339 (Minn. P.U.C. 1981).

¹⁵⁶ See Northern States Power Co. v. Hagen, 314 N.W.2d 32, 38 (N.D. 1981).

¹⁵⁷ Northern States Power Co., 42 Pub. Util. Rep. 4th (PUR) 339, 360 (Minn. P.U.C. 1981).

¹⁵⁸ *Id.*

both the Minnesota and North Dakota commissions were reversed on appeal. The reviewing courts reasoned that once FERC declares a rate just and reasonable, a state commission is precluded by the supremacy clause from characterizing that rate as anything but a reasonable operating expense which the purchasing utility must be permitted to recover in its rates.¹⁵⁹

These cases suggest that when multijurisdiction plants are involved, the sponsoring utilities can choose, through the ownership structure they employ, to subject themselves either to FERC rate regulation or to state rate regulation.¹⁶⁰

F. *Summary of Regulatory Issues*

It is useful at this point to summarize briefly the types of decisions routinely made by regulatory commissions in connection with major energy projects. First, some commissions, although not all, have the power to approve or disapprove projects in advance. Second, many, although not all, commissions that have the power to approve projects in advance also have the power to order partially completed projects canceled or completed projects abandoned.

Third, whether or not a commission has direct regulatory power over a project before its completion, the commission often decides rate issues related to a project after completion. If the project results in excess capacity, the commission must decide whether to grant a large rate increase by allowing inclusion of the entire investment in rate base. Many commissions permit complete inclusion, but some exclude that portion of the investment in the project that represents excess capacity, and some impose a different form of financial penalty on excess capacity.

Fourth, commissions frequently must determine the proper regula-

¹⁵⁹ Minnesota Pub. Util. Comm'n v. Northern States Power Co., Docket No. C1-82-1131 (Minn. 1983) (unanimous decision); Northern States Power Co. v. Hagen, 314 N.W.2d 32, 38 (N.D. 1981); see also Northern States Power Co., 328 N.W.2d 852 (S.D. 1983) (South Dakota Commission did not abuse its discretion when it deferred decision on rate increase application covering losses resulting from Tyrone cancellation until FERC had determined the amount of the loss.).

¹⁶⁰ Multijurisdiction plants frequently are sponsored by utilities that are members of the same corporate family. See, e.g., South Dakota Util. Comm'n v. FERC, 690 F.2d 674 (8th Cir. 1982). This sort of arrangement may cause particularly intense disputes between states. The states' ordinary concerns are heightened by the realization that the intracorporate contracts are not the products of arms-length negotiations in which each utility is primarily concerned with protecting its own interests and those of its ratepayers. On the contrary, such contracts are designed to further the common interests of the affiliated companies in maximizing the net return of the corporate family.

tory treatment of investments in projects that are canceled or abandoned. A few commissions allow recovery of the entire investment, including the cost of capital associated with the investment, through multiyear amortization. A majority permits recovery only of the out-of-pocket costs of the investment, excluding at least a portion of the cost of capital. This treatment has the effect of allocating the costs of the investment between the utility and consumers in a way that places from fifty to one hundred percent of the burden on the utility, depending principally on the amortization period prescribed.¹⁶¹ A growing minority disallows recovery of all of a utility's investment in a canceled or abandoned plant.

Fifth, commissions must make decisions in connection with multijurisdiction plants and contend with the fact that, by carefully structuring multijurisdiction projects, utilities can deliberately exclude state commissions from involvement in decisions concerning the rate treatment of completed, canceled, or abandoned projects.

Each of these decisions is interrelated. For instance, a state that prohibits recovery of all investments in canceled plants but permits a rate of return on completed plants that constitute excess capacity creates an incentive to complete a plant whether it is needed or not.¹⁶² A state that disallows investments in excess capacity but permits recovery of investments in canceled plants creates an incentive to cancel a plant if there is any likelihood that its completion will result in excess capacity.¹⁶³ A state that precludes recovery of investments in canceled plants and disallows investments in excess capacity creates a third type of incentive: to refrain from constructing a new plant until there is absolute certainty that a new plant is needed.¹⁶⁴

These examples are merely illustrative of some of the links between the decisions of regulators and the decisions of utilities. Some of the other relationships between the powers of commissions and the decisions of utilities are less obvious. The presence or absence of commission power to approve plants in advance or to order cancellation of plants under construction affects a commission's discretion to accord completed or canceled plants unfavorable rate treatment.¹⁶⁵ The ability of the utilities to avoid state commission jurisdiction over the rate treatment of completed and canceled plants adds a critical dimension that

¹⁶¹ See NUCLEAR PLANT CANCELLATIONS, *supra* note 3, at 56 table 12; see also *supra* text accompanying notes 119-25.

¹⁶² See *infra* text following note 229.

¹⁶³ See *infra* text accompanying note 229.

¹⁶⁴ See *infra* text accompanying note 230.

¹⁶⁵ See *infra* text accompanying note 208.

affects the incentives of both the utilities and the states that have primary responsibility for their regulation.¹⁶⁶ These relationships do demonstrate, however, that the problems of preventing mistakes in retrospect, and of correcting those that occur, are inexorably connected with the regulatory process itself.

Before beginning detailed analysis of each of the pieces of this complicated regulatory puzzle, it is useful to contrast the general characteristics of a hypothetical competitive market in electricity with the operation of the current system of regulation. By doing so, one can illuminate the distinctive characteristics of regulatory decisionmaking and how they bear on the problem of mistakes in retrospect.

III. MARKET TREATMENT VERSUS REGULATORY TREATMENT

How would a competitive market allocate the risks of mistakes in retrospect? The answer to this question may provide some insights into the question of how regulatory commissions should treat excess capacity and canceled plants. Some commentators have proposed deregulation of electric generation,¹⁶⁷ and others have proposed solutions within the regulatory scheme that would simulate the effects of an unregulated market.¹⁶⁸ Even if competition cannot be substituted for regulation in the electricity industry, the expected performance of a competitive market can be used as a benchmark for comparison with the results of alternative regulatory solutions.

A competitive market does not forgive mistakes in forecasting demand or in projecting the costs of alternative means of providing service, however understandable those mistakes may be. The market provides rewards and penalties based on conditions *ex post*, not reasonable expectations *ex ante*. An industry with substantial excess capacity, like today's electric generating industry, would have no choice but to lower its prices. In a competitive market, firms operating with excess capacity do not earn a return on that capacity. Nor do firms that cancel partially completed plants because of unanticipated shortfalls in demand recover their investments in the plants. Further, if firms in a competitive market rely upon a promising technology that unexpectedly becomes more

¹⁶⁶ See *infra* text accompanying note 246.

¹⁶⁷ See, e.g., Miller, *A Needed Reform of the Organization and Regulation of the Interstate Electric Power Industry*, 38 *FORDHAM L. REV.* 635 (1970); Weiss, *Antitrust in the Electric Power Industry*, in *PROMOTING COMPETITION IN REGULATED MARKETS* 135 (A. Phillips ed. 1975); Essay, *Efficiency and Competition in the Electric Power Industry*, 88 *YALE L.J.* 1511 (1979).

¹⁶⁸ See, e.g., A. KAHN, *THE ECONOMICS OF REGULATION: PRINCIPLES AND INSTITUTIONS* (1970).

expensive than alternative technologies, those firms experience reduced rates of return to the extent of the difference in cost of the two technologies. The harsh consequences of misjudgments in the competitive market provide powerful incentives for prudent decisionmaking. If a firm's forecasts are wrong, it suffers. If its forecasts bias the outcome, it suffers. Thus, it has a natural incentive to invest heavily in forecasting and to purge its forecasts of all sources of bias.

Many electric utilities have substantial excess capacity at present,¹⁶⁹ and, judging from the enormous rate increases sought to reflect the costs of completing new nuclear generating plants,¹⁷⁰ many utilities have invested in a technology more expensive than alternative technologies. Under these circumstances, a regulatory policy that simulated the responses of the competitive market would require uniform denial of all rate increases requested to reflect new plants that constitute excess capacity or to permit recovery of investments in canceled plants. Through this policy, regulatory commissions would replicate the harsh treatment accorded by a competitive market to firms that overbuild or that select inappropriate technologies based on inaccurate forecasts. This, in turn, would provide powerful natural incentives for utilities to make investment decisions based upon carefully conceived forecasts of future conditions.

This policy prescription is particularly appealing when attention is turned to the possibility that regulation itself distorts utility investment decisions.¹⁷¹ If Averch and Johnson are right, cost-of-service rate regulation sometimes gives utilities an incentive to overinvest in capital assets.¹⁷² Utilities, therefore, have a regulatory incentive to use forecasting methodologies biased in favor of the need for investments in new capacity, particularly capital-intensive new capacity. The forecasts actually used by the industry as the basis for investment decisions appear to reflect bias or, at the least, naivete in assumptions with respect to long-term price elasticity of demand for electricity¹⁷³ and structural changes in the market for electricity.¹⁷⁴

¹⁶⁹ See *POWER MONTHLY*, *supra* note 28, at 87-91.

¹⁷⁰ See *supra* notes 48 & 89.

¹⁷¹ See *supra* text accompanying notes 53-56.

¹⁷² See *supra* text accompanying notes 54-56.

¹⁷³ The utility industry consistently overestimated the rate of growth in peak load by a wide margin from 1973 through 1983. Compare *NUCLEAR PLANT CANCELLATIONS*, *supra* note 3, at 16 table 5 (growth forecasts generally in excess of seven percent annually) with *POWER ANNUAL*, *supra* note 27, at 47. See generally Studness, *supra* note 26, at 54-55 (suggesting that industry forecasts underestimated the impact on demand made by the substantial increases in electric utility rates that occurred between 1973 and 1983).

¹⁷⁴ See Johnson, *Why Electric Power Growth Will Not Resume*, 111 *PUB. UTIL.*

Before embracing fully this application of competitive market principles and denying many pending utility rate increases, it is necessary to determine whether a particular utility's system is characterized by the conditions hypothesized. As the title of this Article and the text so far suggest, the author strongly believes that many utilities have overinvested in capacity and have selected capital-intensive forms of capacity that do not represent the least cost alternative. This belief is critical to the appeal of denying rate increase requests in order to create incentives equivalent to those provided by a competitive market. If a nuclear power plant nearing completion today is not a mistake in retrospect, a competitive market would not penalize the utility for investing in the plant.

The evidence that the electricity industry has chronic excess capacity is powerful but not irrefutable. The industry reserve margin for 1983 (generating capability minus peak demand) is thirty-two percent,¹⁷⁵ well above the margin required for reliable provision of electric service.¹⁷⁶ In an industry with indivisible increments of capacity and long lead times for new capacity, however, the present reserve margin is less important than the expected future margin. There is room for honest difference of opinion concerning the future supply/demand relationship in the industry. Although many experts forecast excess capacity for the indefinite future,¹⁷⁷ their views are not shared by all. The Department of Energy, for instance, predicts capacity shortages within a decade.¹⁷⁸ The Department of Energy forecast may be challenged as

FORT., Apr. 14, 1983, at 19, 20 (structural changes include: "[a] long-term evolution in the nature of the domestic economy and its use of electricity, [c]hanges in the mix of U.S. and world industrial production, [s]aturation of electrical devices in the residential and commercial sectors, [and] [r]eversal of long-term trends in the real price of electricity").

¹⁷⁵ Franklin, *A Fresh Look at Electric Generating Reserve Margins*, 111 PUB. UTIL. FORT., Apr. 28, 1983, at 17, 19 exhibit 2. The industry should not have a reserve margin greater than about 21%. S. BREYER & P. MACAVOY, *ENERGY REGULATION BY THE FEDERAL POWER COMMISSION* 105-07 (1974).

At least one study has estimated that reserve capacities even more excessive than those at present will exist in the 1990's. U.S. DEP'T OF ENERGY, *supra* note 2, at 19.

¹⁷⁶ Studies of the industry have concluded that the requisite reserve margin is between 16% and 21%. See S. BREYER & P. MACAVOY, *supra* note 175, at 105-07.

¹⁷⁷ See, e.g., U.S. GEN. ACCOUNTING OFF., *REPORT TO THE SUBCOMMITTEE ON ENERGY CONSERVATION AND POWER, COMMITTEE ON ENERGY AND COMMERCE, HOUSE OF REPRESENTATIVES: ANALYSIS OF ELECTRIC UTILITY LOAD FORECASTING* (1983) [hereinafter cited as *LOAD FORECASTING*]. In comparison to actual need, recent load forecasts have been too high. Some analysts predict that United States energy needs will continue to decrease; this reduction, combined with excessive forecasting, will result in increased reserve margins. See *id.* app. IV at 22, 33-36.

¹⁷⁸ OFFICE OF POLICY, PLANNING, & ANALYSIS, U.S. DEP'T OF ENERGY, *REPORT OF THE ELECTRICITY POLICY PROJECT, THE FUTURE OF ELECTRIC POWER IN AMERICA: ECONOMIC SUPPLY FOR ECONOMIC GROWTH* (1983) [hereinafter cited as

based on highly questionable assumptions,¹⁷⁹ but when all is said and done there is no way to be certain about what the future demand will be for electricity.¹⁸⁰

A similar picture emerges from a comparison of the cost of electricity generated in new nuclear power plants with the cost of electricity from new and existing fossil fuel plants. Judged solely by the magnitude of rate increase requests attributable to new nuclear plants, electricity generated in such plants appears to be a very bad bargain indeed.

The initial cost of a new capital-intensive plant is, however, a poor indicator of its overall economic benefits or detriments. The traditional method of regulating utility rates contains a large temporal bias that causes the cost of capital investments to be allocated disproportionately to the early years of an asset's life.¹⁸¹ In the case of assets as expensive and long-lived as nuclear power plants, this bias has a distortive effect on utility rates so powerful that rate increases attributable to completion of such a plant may mask the fact that the plant will provide substantial net economic benefits over time.¹⁸²

The temporal bias that causes large rate increases in the early years of a plant's life also causes rate decreases in later years.¹⁸³ The capital cost component of the utility's rates declines as the amount of the original cost of the investment remaining in the utility's rate base declines. Thus, the only reliable method of determining whether a new plant is economically superior to an alternative means of providing electricity is to compare the cost of each (discounted to present value) over the life of the plant. This, however, forces a return to the problem of the uncertain future.

Nuclear power plants have high capital costs and low operating

THE FUTURE OF ELECTRIC POWER] (proceeds from the office's "financially constrained electric supply scenario" to analyze how a continuation of recent supply trends could affect the reliability and cost of electric service in the future).

¹⁷⁹ See LOAD FORECASTING, *supra* note 177, at 22.

¹⁸⁰ In fact, the Department of Energy, just one year ago, predicted significant increases in existing excess capacity. See U.S. DEP'T OF ENERGY, *supra* note 2, at 19 (additions to generating capacity are expected to result in national reserve margins of 45% in 1985, 42% in 1990, and 45% in 1995).

¹⁸¹ Navarro, Petersen & Stauffer, *A Critical Comparison of Utility-Type Ratemaking Methodologies in Oil Pipeline Regulation*, 12 BELL J. ECON. 392, 395 (1981).

¹⁸² See POWER REGULATION, *supra* note 44, at 191-98, 205-22. That report suggests that, because they have lower capital construction costs than nuclear plants, fossil fuel plants may initially appear more attractive. The increase in the rate base that results when a fossil fuel plant comes on line is much smaller than the increase associated with a nuclear plant. In reality, the report concludes, the much lower operating costs of the nuclear plant make it economically preferable under any long-term analysis.

¹⁸³ See Navarro, Petersen, & Stauffer, *supra* note 181.

costs relative to fossil fuel plants.¹⁸⁴ The economic advantages or disadvantages of nuclear power plants are critically sensitive to future prices of fossil fuels. Many forecasts predict that fossil fuel prices will remain stable or increase slightly, in constant dollars, for the foreseeable future.¹⁸⁵ If those forecasts are accurate, investments in new nuclear power plants to replace existing fossil fuel plants, or even in lieu of new fossil fuel plants, are indeed mistakes in retrospect. If, however, forecasts of substantial future increases in fossil fuel prices, such as the forecasts emanating from the Department of Energy,¹⁸⁶ are accurate, new nuclear plants may still be good investments. This author believes that fossil fuel prices are likely to remain relatively stable for the foreseeable future, but the uncertainty inherent in any forecast of future fossil fuel prices is so great that it is impossible to be confident of any prediction. Consider, for instance, the potential ramifications of any war-related closure of the Straits of Hormuz.

All of the prior discussion relates only to the factual predicates of regulatory decisions. The policy prescription could and must be made contingent upon resolution of these difficult factual problems by regulatory commissions. Thus, if the harsh market analogue is to be adopted, it should take the form of a contingent direction to a regulatory commission. Such a direction could be stated as follows: If the commission finds that a utility has made an investment decision that is imprudent *in retrospect*, the utility shall not be entitled to a rate increase attributable to such investment, but shall be entitled to whatever rate increase it would have received if it had made decisions consistent with accurate forecasts of future conditions. This direction would leave regulatory commissions the imposing responsibility of determining whether past investments were prudent based on present conditions and expected future conditions, but it would at least provide clear guidance concerning the appropriate regulatory treatment of any investment that is found to be imprudent in retrospect.

¹⁸⁴ See *supra* note 73.

¹⁸⁵ *Energy Analyst Says Crude Oil Prices Will Not Fluctuate Significantly to 2000*, 11 ENERGY USERS REP. (BNA) 1143, 1143 (Dec. 8, 1983); see also *World Petroleum Congress Report: Energy Demand, Supply, and Needed Development Resources Are Assessed*, OIL & GAS J., Sept. 5, 1983, at 71-72. Although cautioning that prices are hard to predict, John H. Lichtblau of the Petroleum Industry Research Foundation, Inc., based his presentation "Oil's role in the energy future," on the assumption that the average world oil price, which was \$29 per barrel as of March 1983, will remain "nominally" unchanged through 1984, will rise somewhat less than inflation in the principal importing countries until the late 1980's, and then rise approximately in line with inflation until 2000.

¹⁸⁶ The United States Department of Energy predicts that "petroleum (and most of the readily available substitute fuels) will continue to become more expensive for some time to come." U.S. DEP'T OF ENERGY, *supra* note 1, at 2.

Under this approach, investments in canceled plants invariably would be excluded from rates because such investments are, by definition, imprudent in retrospect. The treatment of new plants would depend upon the precise facts found by the agency. Two examples illustrate this point. First, if the commission were to find that a utility acted imprudently in retrospect by constructing a new plant five years before the plant's capacity was needed, the commission would not allow the utility's investment in the plant to be included in rate base for five years. If the utility were able to use the plant during that five-year period in a manner that reduced its operating costs, it would be entitled to charge rates at a level determined as if such reductions in operating costs had not occurred. Second, if the commission were to find that a utility built a nuclear plant when, in retrospect, it should have built a coal-fired plant, the utility would be allowed to include in its rate base only the portion of its actual investment equivalent to the capital cost of a coal-fired plant. Again, however, the utility would be entitled to retain in its rates any economic benefits attributable to the decision to invest in a nuclear plant instead of a coal-fired plant. Thus, for instance, the company would be allowed rate increases to the extent of the difference between the actual cost of operating the nuclear plant and the higher cost of operating a coal-fired plant. In this way, the utility could receive the same treatment from regulatory commissions that it would receive were it in a competitive market. As a result, the utility would be subject to the same powerful incentives to avoid excessive or inappropriate investments premised on faulty projections as are participants in competitive markets.

Before the market analogue is accepted as the basis for regulatory treatment of mistakes in retrospect, it is important to determine whether there are characteristics of either regulation or competitive markets that would cast doubt upon the functional efficacy of the analogue. Despite the fact that the market analogue seems to offer promise in the treatment of mistakes in retrospect, this problem is only one of many presented to regulatory bodies. Mixing market-based sanctions with regulatory constraints can yield a combination of legal and economic regimes worse than the pure version of each.

When a participant in a competitive market makes an investment, the participant does so with full recognition of the potential losses which may result from differences between actual future market conditions and the forecast market conditions on which the profitability of the investment was premised. It also undertakes an investment in a new plant based on the expectation that market conditions more favorable than forecast will produce an even better rate of return than expected.

Indeed, the firm forecasts a range of foreseeable market conditions and calculates the corresponding range of potential rates of return on the investment.¹⁸⁷ It then calculates the weighted average rate of return and, after adjusting the weighted average rate of return to reflect the risk factor associated with the variation in the potential rate of return, it invests in the new plant only if the risk-adjusted weighted average rate of return exceeds the firm's cost of capital.¹⁸⁸ In the case of long-lived investments undertaken by financially sound firms, the expected rate of return during any given period is not crucial, since a period of low or negative return can be offset by a period of very high return.

Firms subject to cost-of-service rate regulation cannot approach investment decisions in the same manner. If market conditions yield a potential rate of return on investment in excess of the "normal" level, a utility is still limited to the rate of return allowed by the regulatory commission.¹⁸⁹ This holds true for the entire life of the investment, thereby reducing substantially the expected weighted average rate of return a regulated utility can expect. This upper limit on rate of return also applies to any particular period in which market conditions otherwise would permit the utility to earn a high rate of return in order to offset periods of lower-than-expected earnings.

Thus, combining market-based sanctions for unwise investments with regulatory constraints on the rate of return that a utility can earn on particularly wise investments produces an asymmetrical framework for making investment decisions.¹⁹⁰ This asymmetry does more than just offend a lawyer's traditional notion of fairness. There is every reason to expect that it will yield a pattern of utility investment decisions that would cause enormous harm to consumers and to the economy.

Combining the present regulatory ceiling on return on utility investments with the complete exposure of such investments to losses attributable to changes in market conditions would discourage utility investments in new plants. The utility would have to be very nearly certain that new capacity was needed before it would be willing to invest in such capacity. When in doubt regarding future conditions, the utility would decide not to build a new plant. As a result, consumers

¹⁸⁷ See H. LEVY & M. SARNAT, *CAPITAL INVESTMENT AND FINANCIAL DECISIONS* 188-203 (1978); H. RAIFFA, *DECISION ANALYSIS: INTRODUCTORY LECTURES ON CHOICES UNDER UNCERTAINTY* 86-94 (1970); J.F. WESTON & E. BRIGHAM, *MANAGERIAL FINANCE* 314-17, 323-35, 354-61 (6th ed. 1978).

¹⁸⁸ See H. LEVY & M. SARNAT, *supra* note 187, at 190-92; H. RAIFFA, *supra* note 187, at 90-94; J.F. WESTON & E. BRIGHAM, *supra* note 187, at 322-35.

¹⁸⁹ See E. GELLHORN & R.J. PIERCE, *supra* note 74, at 98-99.

¹⁹⁰ See Pierce, *Natural Gas Rate Design: A Neglected Issue*, 31 VAND. L. REV. 1089, 1154-55 (1978).

would be exposed to substantial risks of increased rates attributable to more intensive use of generating units with high operating costs and continued use of obsolete units, as well as the increased risk of brown-outs and blackouts caused by inadequate capacity.

Thus, a direct carryover of market-based sanctions for imprudent investments undertaken by regulated utilities is not a promising solution to mistakes in retrospect. Analogies to the competitive markets, however, may be useful in identifying solutions to the regulatory problems created by mistakes in retrospect. Successful treatment of these problems, however, requires an approach that is either less direct or more complete than combining market-based penalties with rewards that are severely limited by regulation.

IV. THE MAJOR REGULATORY QUESTIONS IN DETAIL

Part II consisted of a description of the five questions that arise most frequently with respect to utility decisions to invest in major new plants: whether to approve new plants in advance, whether to order cancellation of previously approved plants, what the appropriate rate treatment is for investments in new plants that result in excess capacity, what the appropriate rate treatment is for investments in canceled or abandoned plants, and how to handle conflicts concerning multijurisdiction plants. In this part, each of these questions will be analyzed, and the relationship between them will be made explicit.

A. *The Power to Approve New Plants in Advance*

Many state commissions have the power to approve in advance proposals by utilities to construct major new plants.¹⁹¹ The rest do not. Typically, the decision not to grant such authority is based on the belief that decisions concerning investments in new plants should be left entirely to the discretion of utility management.¹⁹² In recent years, however, there has been a distinct trend toward granting the authority to certify plants to state commissions.¹⁹³ At first glance, this trend may appear progressive, but analysis of the potential ramifications of the

¹⁹¹ See, e.g., ILL. ANN. STAT. ch. 111 2/3, § 56 (Smith-Hurd 1966); MICH. COMP. LAWS ANN. § 460.502 (West 1967); MISS. CODE ANN. §§ 77-3-11, 77-3-21 (1973); N.H. REV. STAT. ANN. § 162-F:6 (1977 & Supp. 1983); N.Y. PUB. SERV. LAW § 68 (McKinney 1955); S.C. CODE ANN. § 58-27-1230 (Law. Co-op. 1977); TENN. CODE ANN. § 65-4-201 (1982); WIS. STAT. ANN. § 196.491 (West Supp. 1983-1984).

¹⁹² See, e.g., *Kelley v. Michigan Pub. Serv. Comm'n*, 412 Mich. 385, 316 N.W.2d 187, 197-200 (1982).

¹⁹³ For example, Wisconsin's certification statute was enacted in 1975. WIS. STAT. ANN. § 196.491 (West Supp. 1983-1984).

exercise of certification powers suggests that the trend is more harmful than beneficial.

There are two major reasons for granting commissions the power to approve the utility's construction plans in advance. First, present methods of rate regulation may provide a financial incentive for over-investment in capital-intensive projects.¹⁸⁴ At least in theory, commissions can act as a check on the utilities' tendency to respond to this incentive. Second, because commissions generally become heavily involved in utility investment decisions years after they are made, the public and utilities may be better served by commission involvement in the decisionmaking process itself. The traditional argument that decisions to invest in new plants are entirely consigned to management's discretion seems specious when commissions second-guess such decisions more than a decade after they are made.

It is important, however, to recognize the limitations on the practical ability of regulatory commissions to play a constructive role in utility investment decisions. Commissions do not have personnel adequate either in numbers or in expertise to make independent forecasts of demand, construction costs, cost of alternative methods of generating electricity, and the many other factors relevant to decisions to construct new plants. Of course, they can retain outside consultants to conduct such forecasts, but only at a very high cost. Moreover, there is no guarantee that the presence of outsiders will improve results. Many of the decisions that are now regarded as mistakes were made by government decisionmakers: the government makes mistakes too.¹⁸⁵ In short, while granting certification authority to regulatory commissions improves the apparent effectiveness of the regulatory process, there is little reason to expect such a grant of authority to produce any real improvement in the process. Regulatory commissions with the power to certify new plants often make decisions that later prove ill-advised.¹⁸⁶ A commis-

¹⁸⁴ See Averch & Johnson, *supra* note 54; see also *supra* note 56 and text accompanying notes 54-56.

¹⁸⁵ See *infra* note 196.

¹⁸⁶ Indeed, government agencies may have an even worse record for overestimating future demand than do the privately owned electric utilities. The coal-gasification plant and several liquefied natural gas import terminals that now seem to have been wasteful investments were approved and encouraged by federal agencies. See *supra* notes 12-14. One of the largest mistakes in forecasting future demand was made by a public power supply agency: the Washington Public Power Supply System. See *supra* note 6. The political incentive that government agencies have to overestimate demand and thereby justify new plants may be even more powerful than the regulatory incentive to overinvest in capacity faced by investor-owned utilities. See Cochrane, *Energy Policy in the Johnson Administration: Logical Order versus Economic Pluralism* in *ENERGY POLICY IN PERSPECTIVE: TODAY'S PROBLEMS, YESTERDAY'S SOLUTIONS*, 337, 370-75 (C. Goodwin ed. 1981); Goodwin, *Truman Administration Policies To*

sion with such power may sometimes disapprove plants that would be of substantial public benefit. At best, the problem of basing decisions to invest or not invest on inaccurate forecasts will be marginally ameliorated by giving commissions the power to approve plants in advance.

Giving a commission certification power over new plants, however, has significant implications for other regulatory decisions that suggest that vesting prior approval power in a commission will not solve the problem of mistakes in retrospect. Once a commission certifies a new plant, the utility will have an advantage in any subsequent proceedings concerning the appropriate rate treatment of its investment in the plant. First, the commission can not easily exclude the plant from rate base by applying the standard version of the prudent investment test. That test focuses on the information available to the company at the time it made the investment decision.¹⁹⁷ Given that a commission exercising certification power would have access to precisely the same information that the company had, any subsequent disallowance of investment recovery through application of the prudent investment test would be tantamount to a collateral attack on the commission's own certification order. The commission might still have the power to disallow some portion of the investment if it concluded that the utility had been imprudent in failing to cancel the plant at some later stage based on changed circumstances. Such a decision would, however, also cast some doubt on the commission's initial decision and probably would not be resorted to at all if the commission had the continuing power to order cancellation of a certified plant and had failed to exercise it.

Second, although it could still disallow the inclusion of plant investments in rate base under the used and useful test, a commission with certification authority would be unlikely to do so. Once a commission has certified a plant based on a finding that the plant will be needed in the future, any subsequent finding that the plant constitutes excess capacity and hence should not be allowed in rate base would be an embarrassment. Such a finding would mean that the commission's forecasts, as well as the utility's, were in error. To avoid such embarrassment, the commission may be expected to strain to find the plant used and useful when complete. In addition, a court reviewing a commission decision to disallow the reflection of a new plant in rate base may rely in part on the commission's prior approval of the plant to reverse the commission's decision.¹⁹⁸

ward *Particular Energy Sources*, in *ENERGY POLICY IN PERSPECTIVE: TODAY'S PROBLEMS, YESTERDAY'S SOLUTIONS*, *supra*, at 63, 147, 188-92.

¹⁹⁷ See *supra* note 76 and text accompanying notes 75-81.

¹⁹⁸ See, e.g., *Wisconsin Pub. Serv. Corp. v. Public Serv. Comm'n*, 109 Wis. 2d

As a result of the relationship between a commission's prior certification of plants and subsequent rate treatment of plants, utilities are seemingly the principal beneficiaries of a grant of certification power to a state regulatory commission. Although a certification requirement might superficially improve the regulatory process, there is little reason to expect that the direct involvement of commissions in investment decisions would create any real improvement. Indeed, because of the relationship between direct control over investment decisions and rate treatment of investments in new plants, granting a commission certification power may provide utilities increased freedom to respond to regulatory incentives to overinvest in capital assets.

B. *The Power to Order Cancellation of Previously Approved Plants*

A Commission's statutory authorization usually links the power to approve plants in advance with the power to withdraw such approval.¹⁹⁹ In some cases, however, commissions with certification power have only limited power to order cancellation of a certified plant.²⁰⁰ Coupling the authority to approve new plants with only a limited authority to order cancellation offers no advantages.

It is logical to conclude that a commission that has been trusted with the power to approve new plants based on its assessment of future conditions at the time of the initial decision to build should have the power to change its original decision when new circumstances indicate that the plant will not be needed. The decision to cancel involves the same analytical process as the decision to approve.

The strange combination of certification power without cancellation power can result not only from legislative proviso but also from court decisions greatly limiting the cancellation power conferred on a commission by statute.²⁰¹ Courts may, for example, act on the fear that

256, 263-65, 325 N.W.2d 867, 870-71 (Wis. 1982).

¹⁹⁹ State statutes provide, at most, limited revocation powers. See ILL. ANN. STAT. ch. 111 ¾, § 56 (Smith-Hurd 1966) ("Such certificates may be altered or modified by the Commission, upon its own motion"); N.H. REV. STAT. ANN. § 162-F:12 (1977) ("Any certificate granted hereunder may be revoked or suspended . . . [f]or any material false statement in the application, . . . [f]or failure to comply with the terms or conditions of the certificate . . . [or] [f]or violation of the provisions of this chapter, regulations issued thereunder, or order of the commission."); see also TENN. CODE ANN. § 65-4-202 (1982); WASH. REV. CODE ANN. § 80.50-.130 (West Supp. 1983-1984).

²⁰⁰ See, e.g., Public Serv. Co., 122 N.H. 1062, 1066-72, 454 A.2d 435, 437-40 (1982).

²⁰¹ See, e.g., *id.*; see also Kelley v. Michigan Pub. Serv. Comm'n, 412 Mich. 385, 316 N.W.2d 182 (1982); Public Serv. Co. v. State, 645 P.2d 465 (Okla. 1982). But see Pennsylvania Pub. Util. Comm'n v. Philadelphia Elec. Co., 501 Pa. 153, 460 A.2d 734

the utility stands an unreasonable risk of losing its investment in the plant if the commission can freely order cancellation.²⁰² That the utility should suffer loss seems unfair—and to some courts, unconstitutional²⁰³—because the investment was made in reliance upon a government decision approving the investment.

In such a case, however, even if the court's reasoning is sound, it need not conclude that a commission lacks power to order cancellation in order to prevent an unconstitutional "taking" of the utility's property. Utilities ordered to cancel plants may or may not suffer financial hardship as a result depending on a commission's decisions in subsequent rate cases. If the commission allows the utility to recover its investment in a subsequent rate case, the arguably unfair financial hardship that concerns the court will never materialize. Even if the commission does not allow the utility to recover its investment the result need not be unfair to the utility: the court simply can reverse the commission's ratemaking decision.²⁰⁴

One court has held a cancellation order directed at a previously certified plant unconstitutional as a prohibited taking of property without just compensation.²⁰⁵ The holding was premised on the belief that a newly enacted state statute would have required the commission to disallow all utility investment in a canceled plant.²⁰⁶ Even accepting the court's conclusion that a taking did, in fact, occur, it occurred only when the commission denied recovery of the investment pursuant to its statutory mandate. Thus, it is the statutory provision precluding recovery of the utility's investment in canceled plants, rather than the statutory provision authorizing cancellation of plants, that conflicts with the taking clause. Once it is recognized that a utility ordered to cancel a previously certified plant must be allowed to recover its investment through rates, there is no justification for a court's holding that a commission with certification authority cannot order cancellation of a plant. Under some circumstances, cancellation of a partially completed plant combined with the rate increases necessary to recover the investment in

(1983) (although regulatory commission may not second-guess utility management regarding routine matters, it may consider the underlying need for a proposed major capital project before approving a certificate).

²⁰² Public Serv. Co., 122 N.H. 1062, 1068-72, 454 A.2d 435, 439-40 (1982) (court expressed concern that expenditures of hundreds of millions of dollars will be lost if compelled to cancel by an ordinance prohibiting completion of nuclear power facility).

²⁰³ See, e.g., *id.*

²⁰⁴ See, e.g., *Wisconsin Pub. Serv. Corp. v. Pub. Serv. Comm'n*, 109 Wis.2d 256, 325 N.W.2d 867 (1982).

²⁰⁵ Public Serv. Co., 122 N.H. 1062, 1070-72, 454 A.2d 435, 440 (1982).

²⁰⁶ *Id.*

that plant is more beneficial to consumers than permitting the plant to be completed.²⁰⁷ Any commission with the analytical capability to make an initial certification decision can use that same capability to determine whether, under the circumstances, a plant in progress should be completed or canceled.

Granting a commission the power to order cancellation of a previously certified plant has certain necessary implications for the rate treatment of plants. There are a number of situations in which a commission's possession of such power would tend to limit the courses of action reasonably available when presented with requests for recovery of the costs of canceled plants. Most obviously, a commission cannot apply the prudent investment test to disallow recovery of the investment in a canceled plant that was both certified and canceled by the commission. Similarly, a commission should not be able to disallow rate base treatment of an investment in a completed plant through application of the prudent investment test when the commission approved the plant initially and subsequently declined to exercise its continuing power to order cancellation of the plant.

A commission with both certification power and cancellation power may also have difficulty disallowing capital investments under the used and useful test. If a plant has been initially certified and then subsequently canceled by commission order, a reviewing court is more likely to reverse a commission order denying the utility permission to recover its investment. Taken together, the commission's actions would seem so manifestly unfair that the rate order could be characterized as arbitrary and capricious, and even unconstitutional.

The commission might retain the power to exclude from rate base all or a portion of an investment in a completed plant through application of the used and useful test. It is possible for the decision to certify a plant to be correct, and the continuing decision not to order cancellation of the plant to be correct, and for the plant nonetheless to result in excess capacity at the time it is completed. This can result when circumstances change during the construction period, at a rate that causes the present value of the expected benefits of the plant to exceed the cost of completing the plant at each stage of the construction process. In all probability, however, a commission that has approved a plant and declined to exercise its power to cancel the plant will be less likely to conclude that the plant should be excluded from rate base because it is not useful. In addition, courts might be more likely to reverse a com-

²⁰⁷ See *supra* note 70 and text accompanying notes 70-73.

mission in this circumstance.²⁰⁸

C. *Rate Treatment of Completed Plants That Result in Excess Capacity*

Since the authority to certify and to cancel new plants cannot be relied upon as an adequate means of limiting a utility's power to respond to the regulatory incentive to overinvest in capacity, careful rate treatment of completed and canceled plants takes on added significance. Careful regulatory review of rate increase applications that seek the inclusion in rate base of plants that create excess capacity could potentially provide an incentive to make investment decisions based on reliable forecasts.

Of the two tests commonly used to determine the appropriate rate treatment of new plants creating excess capacity, the used and useful test in some form holds far more promise than does the prudent investment test.²⁰⁹ Although the prudent investment test is appealing in theory, its practical usefulness is limited for a number of reasons. First, where the commission has the power to certify and cancel plants, it will, in most instances, have been so heavily involved in the decision to build and continue building a particular plant, that the prudent investment test will be worthless as a means of checking the utilities.²¹⁰ Given the present trend toward granting state commissions broad certification powers, the prudent investment test will soon apply to very few significant investments. Even when the prudent investment test could potentially be applied to an investment decision, the difficulty of proving that any important utility decision was imprudent when made is so great that participants in rate cases rarely will spend the millions of dollars necessary to have any chance of establishing imprudence. The test should continue to exist to cover the unusual circumstance in which utility decisions are obviously negligent, but it cannot be relied upon as a real check on the incentives of regulated utilities to overinvest in capacity. On the other hand, the used and useful test can be applied to excess capacity situations in a variety of ways.²¹¹ Thus, attention should be directed to the question of how commissions can use the flexibility provided by the used and useful test to create the optimum incentives for utility forecasting and investment decisions. This question

²⁰⁸ See, e.g., *Wisconsin Pub. Serv. Corp. v. Public Serv. Comm'n*, 109 Wis. 2d 256, 325 N.W.2d 867 (1982).

²⁰⁹ See *supra* text accompanying notes 75-88.

²¹⁰ See *supra* text accompanying note 197.

²¹¹ See *supra* text accompanying notes 83-109.

has several components.

First, it is necessary to define excess capacity carefully.²¹² A utility does not have excess capacity merely because it has capacity greater than its peak demand. Reliability considerations require capacity in excess of peak demand to cover scheduled plant outages and forced outages. The reserve margin adequate for this purpose varies among utilities depending on many factors: size, age, and type of generating plants; availability of power from external sources; and the nature of the market served by the utility.²¹³

Second, capacity in excess of the necessary reserve margin is desirable in some situations because of indivisibilities in generating increments and large economies of scale in generation. To illustrate this point, consider the example of a geographically isolated utility with projected peak demand of 3,000 megawatts, present generating capacity of 2,800 megawatts, and a planned reserve margin of twenty percent. To have the proper capacity, the utility should build a plant with a capacity of 800 megawatts. Yet, full economies of scale may not be achieved in a plant with less than 1,000 megawatts of capacity.²¹⁴

The utility is thus faced with a choice of three less than ideal alternatives. First, it can build a plant with 800 megawatts of capacity, thereby maintaining its capacity at the ideal level but foregoing available economies of scale. Second, it can defer building any plant until it forecasts a future capacity deficiency large enough to warrant construction of a 1,000 megawatt plant, thereby avoiding excess capacity and taking advantage of all available economies of scale, but exposing consumers to the threat of rate increases and the risk of brownouts and blackouts attributable to several years of operating with an inadequate reserve margin. Third, the utility can build a 1,000 megawatt plant immediately, thereby taking advantage of all available economies of scale and avoiding the risks associated with an inadequate reserve margin but creating excess capacity for several years until demand grows by another 200 megawatts.²¹⁵ Overall, the utility's customers may be best served by a deliberate decision to create excess capacity. A commission must, therefore, be careful to avoid penalizing a utility for "excess capacity" resulting from this type of rational decisionmaking.

Even after taking into account the need for an adequate reserve

²¹² See Franklin, *supra* note 175, at 17.

²¹³ See Baldwin, *Reserve Sharing Is Primary Benefit from Power Pooling*, 70 POWER ENGINEERING, Apr. 1966, at 59, 59.

²¹⁴ See 2 COSTS OF ELECTRICITY, *supra* note 2, at 103, 106.

²¹⁵ There is an additional alternative: the utility could contract with neighboring utilities to pool resources and build a plant whose capacity could be shared. See *infra* text accompanying notes 234-37.

margin and for planned increments of temporary excess capacity resulting from rational economic tradeoffs, many utilities today have substantial excess capacity.²¹⁶ That is, they have capacity in excess of any level that could result from rational decisionmaking based on the actual present characteristics of their markets. This is the type of excess capacity that can only be explained as a product of inaccurate forecasts. The magnitude of the forecasting error suggests, in many cases, that the utility either devoted insufficient resources to forecasting or responded to the regulatory incentive to overinvest in capital assets by using forecasting methods that were skewed so as to lead to the conclusion that the utility needed additional capacity. In either case, the rate treatment of substantial excess capacity should help create incentives for utilities to base investment decisions on reliable forecasts. The available options range from the allowance of all excess capacity in rate base, subject only to the unlikely possibility of a finding of imprudence at one extreme, to the disallowance of all excess capacity in rate base at the other extreme.²¹⁷ Both extremes should be rejected.

Obviously, inclusion of all excess capacity in rate base provides no check on the regulatory incentive to overinvest in capital assets. If the used and useful test is not available to restrain the utilities from responding to this incentive, the commission will have no tools except whatever direct control it is able to exert over investment decisions through its power to certify and cancel plants and its power to exclude plants from rate base through the prudent investment test. Neither provides a reliable means of limiting the ability of utilities to respond to the regulatory incentive to overinvest in capital-intensive capacity.²¹⁸

Exclusion of all excess capacity from rate base would produce even worse results. As the prior analysis of the market analogue indicates,²¹⁹ this draconian remedy would create a powerful incentive for utilities to underinvest in capacity, a consequence more costly than overinvestment in capacity.²²⁰

The Iowa Commission may have identified the most promising approach to the difficult problem of regulatory treatment of excess capac-

²¹⁶ Compare Franklin, *supra* note 175, at 20 (1983 reserve margin was 32%) with S. BREYER & P. MACAVOY, *supra* note 175, at 105-07 (required reserve margin is approximately 20%).

²¹⁷ See *supra* text accompanying notes 93-114.

²¹⁸ See *supra* text accompanying notes 191-208 & 210.

²¹⁹ See *supra* text accompanying notes 167-90.

²²⁰ See THE FUTURE OF ELECTRIC POWER, *supra* note 178 ("[F]ailure to pursue economic investments in new supply will have a substantial adverse impact on electric prices while, at the same time, increasing oil import levels and serving as a damper on economic growth."); Navarro, *supra* note 56, at 31.

ity. In *Iowa Public Service Co.*,²²¹ it established a formula for reducing a utility's rate of return by an amount proportionate to the amount of excess capacity on the utility's system.²²² This approach has the advantage of permitting the Commission to impose a financial penalty that is meaningful but less extreme than the penalty of totally disallowing excess capacity in rate base. Moreover, the size of the financial penalty can be correlated with the magnitude of the forecasting error.

While the Iowa approach seems far superior to any alternative attempted to date,²²³ it suffers from one major disadvantage. To correct for the regulatory incentive to overinvest in capital assets without inadvertently creating an incentive for underinvestment in capacity, the financial penalty for excess capacity should equal the regulatory incentive to overinvest. Yet, it is impossible to calculate the magnitude of the regulatory incentive to overinvest in capital-intensive capacity.²²⁴ Indeed, empirical data suggest that the magnitude of that incentive varies substantially both between utilities and over time for the same utility.²²⁵ Thus, the Iowa approach can do no better than impose an overinvestment penalty that crudely approximates the optimum incentives for investment.

D. *Regulatory Treatment of Canceled Plants*

A commission's decision concerning the rate treatment of canceled plants creates incentives for utility decisionmaking at two different

²²¹ 46 Pub. Util. Rep. 4th (PUR) 339 (Iowa Commerce Comm'n 1982).

²²² The Commission described its formula:

The formula requires a preliminary measurement of excess capacity. . . . The excess capacity is then divided by the annual peak load to give us the per cent of excess capacity, "F." We then multiply "F" times the net utility investment in total generating capacity to give us the utility investment in excess capacity. The product is then multiplied by the utility's weighted cost of equity to give us the shareholders' expected return on investment in excess capacity. The weighted cost of equity (the percentage of common equity within the total capital structure multiplied by the allowed return on equity) is used to avoid penalizing creditors for the shareholders' investment decisions. We have decided the amount of return disallowed should be directly proportional to the amount of excess capacity so we multiply the shareholders' expected return on investment in excess capacity times the factor "F," the per cent of excess capacity. The formula illustrating this adjustment is shown below:

Return Adjustment=

[F (net investment in total generating capacity) (weighted cost of common equity)] F

Id. at 370-71.

²²³ See *supra* text accompanying notes 110-14.

²²⁴ See *supra* note 56 and accompanying text.

²²⁵ See Joskow, *supra* note 56, at 305-11.

junctures: at the utility's initial decision to invest in a new plant and at the utility's decision to cancel or to complete plants in progress. Thus, developing a sound approach to the treatment of canceled plants is critical to the creation of a decisionmaking environment that is as free of detrimental incentives as possible.

The commission decisions on rate treatment of investments in canceled plants can be divided into three general categories: decisions allowing full recovery of the investment, including the utility's cost of capital;²²⁶ decisions allowing recovery of the out-of-pocket costs of the investment, but denying recovery of any of the utility's cost of capital associated with the investment;²²⁷ and decisions disallowing recovery of any part of the investment.²²⁸

The first solution—allowing full recovery of the utility's investment in a canceled plant—does not respond at all to the need to counteract the incentive to overinvest in capital assets, because it permits the utility to earn a rate of return on imprudent investments equal to the return allowed on wise investments.

Moreover, in some situations, this treatment of canceled plants will create an incentive to cancel a plant whose completion would be economically beneficial.²²⁹ If a commission imposes any penalty for excess capacity while simultaneously allowing full recovery of investments in canceled plants, it effectively tells its regulatees to cancel all partially completed projects that might result in excess capacity. Many such partially completed plants should be completed because the present value of the economic benefits of completion exceeds the costs of completion.

The third solution—disallowing all investments in canceled plants—produces even worse incentives. Combined with what is commonly the treatment of plant investments resulting in excess capacity—full inclusion in rate base—the total disallowance of investment in plants that are canceled creates an overwhelming incentive to complete any plant in any stage of construction no matter how unnecessary that plant might be. If the commission disallows both investments in excess capacity and investments in canceled plants, it will, in essence, have adopted both of the harsh market-based solutions described earlier.²³⁰ The predictable result is a powerful incentive to underinvest in capacity. Even if disallowance of all investments in canceled plants were

²²⁶ For examples, see *NUCLEAR PLANT CANCELLATIONS*, *supra* note 3, at 49-50.

²²⁷ For examples, see *id.* at 52-54.

²²⁸ See *supra* text accompanying notes 128-29. For examples, see *NUCLEAR PLANT CANCELLATIONS*, *supra* note 3, at 50-51; *A Survey of Regulatory Treatment of Plant Cancellation Costs*, *supra* note 119, at 52, 55.

²²⁹ See *NUCLEAR PLANT CANCELLATIONS*, *supra* note 3, at 57.

²³⁰ See *supra* text accompanying notes 168-90.

combined with a penalty for excess capacity less severe than complete exclusion of excess capacity from rate base, an undesirable incentive would be created. Because a utility would suffer a greater penalty if it canceled a plant than if it completed the plant, the utility would have no incentive to cancel a plant even if changed circumstances during the construction process indicated that the plant would provide no economic benefit. Thus, in combination with any treatment of excess capacity, complete disallowance of investments in canceled plants is simply bad public policy.

This analysis leaves for serious consideration only the second solution: recovery of the out-of-pocket costs of an investment in a canceled plant, while excluding some of the utility's cost of capital associated with the investment. This solution, combined with a reduction in a utility's rate of return proportionate to the excess capacity on the system,²³¹ could potentially create the proper incentives for plant investment decisions.

In sum, a utility that cancels a plant because of unanticipated changes in circumstances should be assessed a penalty sufficient to counteract the regulatory incentive to overinvest in capital assets. This penalty must not be so large, however, that it creates either an incentive to underinvest in capacity or an incentive to complete a plant whose benefits will not be sufficient to justify its cost of completion. The danger of creating other harmful incentives is the major limitation on the practical usefulness of the solution of allowing recovery of out-of-pocket costs of investments in canceled plants but prohibiting recovery of some or all of a utility's cost of capital associated with the investment. It is impossible to determine precisely how much of a financial penalty should be assessed for forecasting errors to produce the proper incentives for capital investments.²³² Hence, there is no way of determining whether the optimum solution is to disallow recovery of the utility's entire cost of capital, the portion of its cost of capital attributable to equity, the portion attributable to the precancellation period, or the portion attributable to the period of amortization of the out-of-pocket costs. Various commissions have selected each of these different ap-

²³¹ See *supra* text accompanying notes 221-25.

²³² It is relatively easy to calculate the financial penalty that results from each possible regulatory treatment of an investment in a canceled plant. See, e.g., NUCLEAR PLANT CANCELLATIONS, *supra* note 3, at 56 (estimating costs by varying amount of amortization); *id.* at 87-122. It is even easier to calculate the penalty for excess capacity that results in a particular percentage reduction in the utility's rate of return under the Iowa method. See Iowa Power & Light Co., 51 Pub. Util. Rep. 4th (PUR) 405 (Iowa Commerce Comm'n 1983). What is difficult is calculating the magnitude of the regulatory incentive to overinvest in capital assets. See *supra* note 56 and accompanying text.

proaches to the problem of allocating the financial burden of investing in a plant that is later canceled.²³³ The ideal penalty may not necessarily correspond to any of these measures, however. This lack of correspondence derives from the fact that the magnitude of the ideal penalty cannot be precisely determined because it is itself based on an indeterminable variable: the regulatory incentive to overinvest.

E. *Regulatory Disputes Involving Multijurisdiction Plants*

Plants built to meet the needs of several utilities located in different states offer two major economic advantages. First, jointly sponsored plants reduce the indivisibilities in the supply function of each utility. In order to realize available economies of scale, new generating plants must be very large: at least 1,000 megawatts.²³⁴ Since electricity demand does not materialize in 1,000 megawatt increments, these large economies of scale force single utilities building new generating plants to accept one or more of three evils: excess capacity, inadequate capacity, and foregone economies of scale.²³⁵ These evils can be avoided if several utilities join together to build a new plant. If, for instance, four utilities sponsor jointly a new generating plant, each can add a 250 megawatt increment of capacity without any sacrifice of economies of scale. The economic attractiveness of jointly sponsoring new plants has increased substantially in recent years because of the lower rate of increase in demand expected by utilities. Most utilities could save themselves and their ratepayers several hundred million dollars a year by building new plants jointly with neighboring utilities.²³⁶

Second, jointly owned and operated generating plants can increase the degree of coordination and joint planning among neighboring utilities. Studies of the electricity industry conducted over the past twenty years have concluded consistently that the industry could save billions of dollars annually through increased coordination and planning.²³⁷ In order to obtain all available economies of scale and coordination, most new generating plants should be planned and built to serve a several-state region.

Any new plant that is intended to serve several jurisdictions inevitably will produce regulatory controversy at some point in the average

²³³ See *supra* text accompanying notes 118-34; NUCLEAR PLANT CANCELLATIONS, *supra* note 3, at 49-56.

²³⁴ See 2 COSTS OF ELECTRICITY, *supra* note 2, at 103, 106.

²³⁵ See *supra* text accompanying notes 213-15.

²³⁶ See generally Willrich & Kubitz, *supra* note 136, at 26-27.

²³⁷ See, e.g., S. BREYER & P. MACAVOY, *supra* note 175, at 94-97; 2 A. KAHN, *supra* note 168, at 73-75.

twelve-year construction period. As conditions in the energy markets represented by each state differ, and as the political conditions in each state change, disputes will arise between the states on such critical matters as whether the plant should be completed at all and, if so, how much of the cost and capacity of the plant should be allocated to each state. Disputes of this nature represent a threat to the viability of all multijurisdiction plants.

Multijurisdiction plants can be owned and operated in one of two ways: joint ownership by all the utilities involved or ownership by a single entity subject to contractual allocation of all benefits, costs, and risks among the other sponsoring utilities.²³⁸ Utilities will rarely choose joint ownership for two reasons. First, some states prohibit ownership of utility property by citizens of other states.²³⁹ Second, if a plant is jointly owned by several utilities, the rate treatment of each utility's investment in the plant is dependent upon the decisions of all the other utilities' state commissions.²⁴⁰ If the plant is canceled before completion or its completion results in excess capacity, each sponsoring utility would be exposed to significant risk of disallowance of some or all of its investment in the plant. Some state commissions treat investments in canceled plants less favorably than FERC does,²⁴¹ and state commissions seem particularly willing to disallow investments in out-of-state plants and plants jointly sponsored by out-of-state utilities.²⁴² Thus, utilities rarely will select the joint ownership option even when legally permitted to do so.

The other means of owning and operating a multijurisdiction plant combines ownership of the plant by a single company with contractual allocation of a portion of the capacity and costs of the plant to each of the sponsoring utilities. The entity with title to the plant may

²³⁸ See *supra* text accompanying notes 137-60.

²³⁹ See, e.g., *Northern States Power Co. v. Hagen*, 314 N.W.2d 32, 33 n.2 (N.D. 1981).

²⁴⁰ See *supra* text accompanying notes 140-45.

²⁴¹ FERC has adopted a policy of allowing at least partial recovery of cancellation costs. This policy is more favorable than that adopted by some state commissions. See *supra*, text accompanying notes 128-34. Compare, e.g., *Virginia Elec. & Power Co.*, 19 FERC (CCH) ¶ 61,333 (June 28, 1982) (approving settlement under which utility was allowed to recover its costs in the canceled North Anna and Surry nuclear units over a 10-year period); and *Northern States Power Co.*, [1979-1982 Transfer Binder] UTIL. L. REP. (CCH) ¶ 12,516 (F.E.R.C. 1981) (allowing partial recovery of costs) with, e.g., *Pacific Power & Light Co.*, 49 Pub. Util. Rep. 4th (PUR) 82, 90 (Or. Pub. Serv. Comm'n 1982) (Oregon Commissioner refuses utility's request to recover investments in canceled Pebble Springs nuclear plant over roughly a five-year period).

²⁴² See, e.g., *Arizona Pub. Serv. Co.*, 38 Pub. Util. Rep. 4th (PUR) 547, 555-56 (Ariz. Corp. Comm'n 1980); *Northern States Power Co.*, 42 Pub. Util. Rep. 4th (PUR) 339, 358-62 (Minn. P.U.C. 1981); *Northern States Power Co. v. Hagen*, 314 N.W.2d 32, 33 (N.D. 1981).

be either a cosponsoring utility or a separate company established for the sole purpose of owning and operating the plant. In either case, the contract between the owner and the sponsoring utilities allocates all costs and risks associated with the plant, including the risk of noncompletion, to each of the sponsoring utilities in return for the owner's commitment to provide a portion of the capacity of the completed plant to each cosponsor.²⁴³ The owning entity and the sponsors often are affiliated corporations.²⁴⁴

This structure for ownership and operation of a multijurisdiction plant creates an allocation of regulatory authority very different from that applicable to the traditional single jurisdiction plant.²⁴⁵ First, because there is no federal requirement that new generating plants be certified, the state in which the plant is to be located has the sole power to determine whether the plant can be built or completed. If the situs state has granted its commission the power to certify and to order cancellation of generating plants, that state's commission is the only agency with power over the certification and cancellation decisions. If the situs state has not granted its state commission power to certify and to order cancellation of new plants, no agency has that authority, and the decision to proceed at each step lies solely in the discretion of the management of the entity that owns the plant.

All decisions concerning the rate treatment of all the sponsoring utilities' investments in the plant are subject to the exclusive jurisdiction of FERC, since they take the form of contracts for the sale of electricity for resale in interstate commerce.²⁴⁶ Once FERC allows the owner of the plant to charge the sponsoring utilities a rate reflecting the investment in the plant, the state commissions with regulatory authority over each sponsoring utility are required by the supremacy clause of the United States Constitution to allow each utility to recover the cost of

²⁴³ See contract filed in *Middle South Energy, Inc.*, No. ER 82-616 (F.E.R.C. pending) (copy on file at the *University of Pennsylvania Law Review*).

²⁴⁴ See, e.g., *Federal Power Comm'n v. Florida Power & Light Co.*, 404 U.S. 453, 456-57 (1972) (Florida Power & Light Co. is indirectly connected with out-of-state corporations through the Florida Power Corp.); *Eastern Edison Co. v. Department of Pub. Util.*, 388 Mass. 292, 446 N.E.2d 684, 685-86 (1983) (Montana Electric Co. is a wholly owned subsidiary of Eastern Edison Co.); *Northern States Power Co. v. Hagen*, 314 N.W.2d 32, 33 (N.D. 1981) (Northern States Power of Wisconsin is a subsidiary of the owning entity, Northern States Power Co., and the two companies coordinate as a single power system).

²⁴⁵ See *supra* text accompanying notes 135-60.

²⁴⁶ See *Northern States Power Co. v. Hagen*, 314 N.W.2d 32, 36-37 (N.D. 1981); see also *Federal Power Comm'n v. Florida Power & Light Co.*, 404 U.S. 453, 454 (1972); *Federal Power Comm'n v. Southern Cal. Edison Co.*, 376 U.S. 205, 210 (1964).

the FERC-approved rate in its retail rates.²⁴⁷

This allocation of regulatory authority over multijurisdiction plants produces results that are unacceptable to most states and their regulatory commissions.²⁴⁸ Under this allocation, state commissions have no control over the rate implications of utility decisions to construct plants that create excess capacity or decisions to cancel partially completed plants. Moreover, FERC typically decides these questions in ways that require consumers to bear a high proportion of the economic burden of utility investment decisions that constitute mistakes in retrospect. For example, FERC permits utilities to recover their investments in canceled plants, including the precancellation costs of capital,²⁴⁹ and FERC has never disallowed any portion of an investment in a new plant merely because it resulted in excess capacity.²⁵⁰

State commissions also have no control over the proportion of the costs of a multijurisdiction plant allocated to consumers in each state. Nor can a state commission, other than the commission of the situs state, control utility decisions to construct multijurisdiction plants or decisions to complete or cancel partially completed plants. Furthermore, the control over these decisions that can be exercised by the situs state exposes the other states to increased risk that the situs state will make decisions adverse to the interests of the other states.²⁵¹

The dismal picture just painted is not an academician's hypothetical conflict. Wisconsin's order canceling the partially completed Tyrone plant and FERC's order allocating most of the investment in that plant to consumers in three other states has produced considerable conflict among FERC, Northern States Power, Wisconsin, Minnesota, North Dakota, and South Dakota.²⁵² Similarly, Middle South Utilities' decision to construct the Grand Gulf plant is creating extreme tension

²⁴⁷ See *Washington Gas Light Co. v. Public Serv. Comm'n*, 452 A.2d 375, 386 (D.C. App. 1982), *cert. denied*, 103 S. Ct. 2454 (1983); *Eastern Edison Co. v. Department of Pub. Util.*, 388 Mass. 292, 446 N.E.2d 684, 690 (1983); *Northern States Power Co. v. Hagen*, 314 N.W.2d 32, 38 (N.D. 1981); *Naragansett Elec. Co. v. Burke*, 119 R.I. 559, 564-65, 568, 381 A.2d 1358, 1361, 1363 (1977), *cert. denied*, 435 U.S. 972 (1978).

²⁴⁸ See, e.g., *Willrich & Kubitz*, *supra* note 136, at 29 (discussing action of New York State Commission).

²⁴⁹ See, e.g., *Northern States Power Co.*, [1979-1982 Transfer Binder] *UTIL. L. REP. (CCH)* ¶ 12,516 (F.E.R.C. 1981); *Virginia Elec. & Power Co.*, 11 *FERC (CCH)* ¶ 63,028 (June 2, 1980).

²⁵⁰ See *Butler Testimony*, *supra* note 56, at 55.

²⁵¹ See, e.g., *Northern States Power Co.*, 42 *Pub. Util. Rep. 4th (PUR)* 339, 358-62 (Minn. P.U.C. 1981).

²⁵² See *South Dakota Pub. Util. Comm'n v. FERC*, 690 F.2d 674 (8th Cir. 1982); *Northern States Power Co.*, 42 *Pub. Util. Rep. 4th (PUR)* 339 (Minn. P.U.C. 1981); *Northern States Power Co. v. Hagen*, 314 N.W.2d 32 (N.D. 1981).

among Middle South, FERC, Arkansas, Mississippi, and Louisiana.²⁵³ The commissions and legislatures in each of the states involved are frustrated and outraged by their inability to exercise control over plants that may have an enormously adverse impact on their constituents.²⁵⁴ They are looking for ways of avoiding any possibility that the future fate of their ratepayers will depend entirely upon the investment decisions of a regional public utility holding company and the legal decisions of a faceless federal agency.²⁵⁵

The ultimate response of many states to the present allocation of regulatory authority over multijurisdiction plants can easily be predicted. At present, utilities can insulate major investment decisions from state regulatory power by investing in new plants through contracts rather than through ownership. As states realize that this procedure is the source of their regulatory impotence, they will pass legislation requiring utilities subject to their jurisdiction to obtain prior approval of the state commission before contracting to cosponsor a new plant and pay a portion of its construction costs. State legislation purporting directly to govern existing interstate contracts allocating the costs and capacity of new plants is suspect under the supremacy clause, the commerce clause, and, in some cases, the contract clause of the federal Constitution.²⁵⁶ On the other hand, legislation requiring utilities subject to the jurisdiction of a state to obtain the approval of the state commission before entering into such contracts is likely to withstand attacks based on the federal Constitution.²⁵⁷ A large number of states can be expected to pass legislation of this type over the next few years.

Unfortunately, once a state commission has the authority to approve or disapprove in advance any utility contract to acquire generating capacity, the commission will be under considerable pressure to

²⁵³ See Simpson & Cunningham, *Nuclear Plants' Energy Costs Mean Trouble for N. O. Area*, New Orleans Times-Picayune, Sept. 11, 1983, § 1, at 1, col. 1, 19-21. It is notable that Arkansas Power & Light Co. withdrew from the Grand Gulf Project in 1980; the withdrawal resulted from an inquiry by the Arkansas Attorney General's Office, which determined that, given the estimated cost of the project, the state could and should forego the power that the project was to have supplied.

²⁵⁴ See *id.* at 19 ("Louisiana political bodies have responded to a perceived lack of regulation [by the Public Service Commission] by exerting some control over utilities within their jurisdiction." New Orleans has participated in FERC proceedings regarding allocation of Grand Gulf construction costs. Furthermore, a referendum was held to decide whether or not regulation should be localized by a transfer of power from the commission to the city council.).

²⁵⁵ See *id.* (Localization of regulatory control was proposed in order to create a system more responsive to consumer needs.).

²⁵⁶ New England Power Co. v. New Hampshire, 455 U.S. 331 (1982).

²⁵⁷ See Pacific Gas & Elec. Co. v. State Energy Resources Conservation & Dev. Comm'n, 103 S.Ct. 1713 (1983).

deny all utility requests to cosponsor multijurisdiction plants. The frustrating experiences of the four states involved in the controversy over the Tyrone plant and the three states now locked in battle over the Grand Gulf plant will demonstrate to state commissions everywhere the regulatory risks of permitting their utilities to invest in multijurisdiction power plants.²⁵⁸ State commissions will be further deterred by the realization that the economic disaster now unfolding in Washington, Oregon, and Idaho had its genesis in contractual undertakings to purchase the capacity of new generating plants.²⁵⁹ In that case, a large number of utilities agreed to purchase the output of five plants to be owned and operated by the Washington Public Power Supply System (WPPSS). When construction costs soared and forecast demand for electricity failed to materialize, two of the plants were canceled, WPPSS defaulted on 2.25 billion dollars worth of bonds, and the potential bankruptcy of WPPSS has placed the remaining three plants in an uncertain status.²⁶⁰ This extremely complicated dispute is still in litigation, but electricity consumers in the three affected states may well be required to absorb much of the multibillion dollar loss resulting from these utilities' decisions to enter into contracts to cosponsor five multijurisdiction plants.

It seems inevitable that most states will try to avoid the bitter experiences of these ten states in dealing with contracts made by their utilities to purchase capacity from multijurisdiction power plants by ordering utilities not to enter into such contracts. The result, however, will be to eliminate the most promising means now available to the electricity industry of adding generating capacity in economically efficient increments. If a utility is precluded from participating in multijurisdiction plants, it must make decisions to build plants to serve only its market. Such a utility must choose whether to subject its customers to the risks of inadequate capacity, the costs of excess capacity, or the costs of foregone economies of scale.²⁶¹ From the perspective of the individual utility system, the result will be annual electricity costs hundreds of millions of dollars higher than necessary. From a national perspective, the result will be a net loss of social welfare of many billions of dollars. Thus, finding a solution to the problem of disputes over new multijurisdiction power plants must be given a high priority.

²⁵⁸ Even before the recent controversies concerning multijurisdiction plants, New York refused to permit its utilities to enter into such transactions. See Willrich & Kubitz, *supra* note 136, at 29.

²⁵⁹ See *supra* note 6.

²⁶⁰ See *WPPSS Default*, *supra* note 6, at 757-58.

²⁶¹ See *supra* text following note 213.

The multijurisdiction plant problem results from the present mix of federal and state regulatory authority and the different approaches to significant regulatory issues taken by state and federal commissions. A substantial change in the present allocation of jurisdiction is essential to preserve the valuable multijurisdiction option. Possible solutions lie in three different directions: increased federal preemption; decreased federal preemption, or a new regulatory scheme tailored to multijurisdiction plants. An examination of the relative strengths and weaknesses of these three potential solutions reveals that the creation of a new regulatory scheme holds the most promise.

The multijurisdiction option could be preserved by decreasing state regulatory power over utility decisions to construct or to participate in plants. The federal government could take from the states all power to grant certification or to order cancellation of multijurisdiction plants located in the state. This would eliminate the risk that consumers in other states would be injured by certification or cancellation decisions of the situs state. Similarly, the federal government could take from the states the power to deny their utilities permission to participate in multijurisdiction plants. The large economies of scale and economies of coordination available through interstate development and operation of generating plants makes the total federal preemption option theoretically appealing.

Unfortunately, two practical constraints override the theoretical appeal of total federal preemption of state authority over multijurisdiction plants. First, there is no reason to expect a federal agency to perform well in filtering out those proposed plants that will not provide net economic benefits.²⁶² Indeed, federal agencies approved in the past some of the most glaring examples of energy projects that are today's evident mistakes.²⁶³ Second, Congress is not likely to take from states the core of their traditional power to regulate electric utilities.²⁶⁴ Thus, total federal preemption of state authority over decisions to construct or to participate in multijurisdiction plants may be neither effective nor politically realistic.

Alternatively, it might be possible to preserve the multijurisdiction

²⁶² See *supra* text accompanying notes 248-50.

²⁶³ See *supra* note 196.

²⁶⁴ But see *FERC v. Mississippi*, 456 U.S. 742 (1982) (In the face of tenth amendment challenges, the Supreme Court upheld Public Utility Regulatory Policies Act of 1978, Pub. L. No. 95-617, 92 Stat. 3117 (1978) (codified as amended in scattered sections of 15, 16, 30, 42 & 43 U.S.C.), which conditionally preempted certain state regulatory functions.); see also Rotunda, *The Doctrine of Conditional Preemption and Other Limitations on Tenth Amendment Restrictions*, 132 U. PA. L. REV. 289 (1983).

plant option by reducing, rather than expanding, federal regulatory authority. If state commissions were permitted to determine the rate implications of utility decisions to participate in multijurisdiction plants, they would be much more willing to approve such participation. States could be given the power to decide whether and to what extent a utility should be permitted to include in its retail rates costs attributable to long-term contracts to purchase generating capacity from multijurisdiction plants. If such a contractual obligation resulted in costly excess capacity or required the utility to pay for the costs of partially completing a canceled plant, the state commission could exercise its authority to disallow all or a portion of those costs in the utility's rates just as it now does for investments in plants owned by the utility. This option would also have the advantage of transferring from FERC to state commissions at least one issue that FERC is ill-equipped to resolve:²⁶⁵ rate treatment of excess capacity. Since FERC jurisdiction typically encompasses only a small portion of any utility's generating capacity,²⁶⁶ FERC is poorly positioned to determine whether additional generating capacity obtained through an interstate contract to purchase capacity from a multijurisdiction plant creates undesirable excess capacity on the system of each participating utility.

Despite these desirable results, however, granting state commissions total regulatory control over the rate implications of multijurisdiction plants must be rejected because it would create regulatory risks no utility or potential investor would be willing to assume. Adoption of such a regulatory scheme would almost certainly create powerful incentives *not* to use multijurisdiction plants. States would be free to disallow recovery of all investments in canceled multijurisdiction plants and in plants that result in excess capacity. A growing number of states are pursuing draconian policies in the case of plants sponsored solely by their own utilities,²⁶⁷ and one would expect that states would be even more likely to disallow contractually based investments in multijurisdiction plants of which their utilities are merely cosponsors.

First, any one of the several state commissions affected by the plant could force its cancellation prior to completion. The commission of the situs state could take this action directly through a cancellation order.²⁶⁸ Any commission of a non situs state whose utility is partici-

²⁶⁵ See *Butler Testimony*, *supra* note 56, at 17-18.

²⁶⁶ FERC regulates only 11% to 15% of the total amount of electricity sold in the United States. See *id.* at 10-11.

²⁶⁷ See, e.g., *supra* text accompanying notes 128-29.

²⁶⁸ See, e.g., *South Dakota Pub. Util. Comm'n v. FERC*, 690 F.2d 674, 676 (8th Cir. 1982).

pating in the plant could create pressure to cancel the plant by indicating its intention to disallow any or all of the costs of the plant in the rates of the utility subject to its jurisdiction.²⁶⁹ This pressure would be particularly effective in the typical case of a multijurisdiction plant that is owned by a corporate affiliate of the utilities that have committed to purchase the output of the plant. If the plant is canceled as a result of regulatory action by any one state, each of the other states is likely to exclude from the rates of its utility all contractual payments for the canceled plant.²⁷⁰

Second, as a matter of practical politics, the regulatory treatment of the entire multijurisdiction plant would be determined by the affected state with the most restrictive policy toward inclusion of investments in excess capacity or in canceled plants in utility rates.²⁷¹ Members of utility commissions are politicians. No prudent politician would burden his or her constituents with rate increases attributable to a plant that a politician in a neighboring state refused to include in rates.²⁷²

In short, a reallocation of regulatory authority over multijurisdiction plants from FERC to state commissions would expose potential sponsors of such plants to financial risks so great that no multijurisdiction plants would be built.

The third possible solution to the problem of multijurisdiction plants is to create a new regulatory scheme designed specifically to accommodate the combination of jurisdictional and regulatory impediments unique to this important category of plants. Such a customized approach would have to combine state and federal powers in ways not previously attempted. For instance, a set of binding federal standards for recovery of costs incurred by utilities in connection with a multijurisdiction plant could be combined with a requirement that each utility obtain prior approval from its state for participation in the plant.²⁷³

This proposed regulatory system responds to the needs of states

²⁶⁹ See, e.g., *Arizona Pub. Serv. Co.*, 38 Pub. Util. Rep. 4th (PUR) 547, 555-56 (Ariz. Corp. Comm'n 1980).

²⁷⁰ See, e.g., *id.*

²⁷¹ See *Utility Decides to Reduce Earnings to Make Up for Losses on Nuclear Plants*, 11 ENERGY USERS REP. (BNA) 529 (May 26, 1983) (detailing problems faced by a utility attempting to recover lost investments in canceled plants from the regulatory agencies of five different states).

²⁷² See, e.g., *State's High Court Allows Utility to Recover Costs for Abandoned Plant*, 11 ENERGY USERS REP. (BNA) 1188, 1189 (Dec. 22, 1983) (Commission had said that consumers in Minnesota should not face a rate increase because of an abandonment in Wisconsin).

²⁷³ A regulatory program reflecting this type of creative federalism probably would be held constitutional. See *FERC v. Mississippi*, 456 U.S. 742 (1982); *Hodel v. Virginia Surface Mining & Reclamation Ass'n*, 452 U.S. 264 (1981).

and utilities. The requirement of prior state approval of each utility's participation would eliminate much of the present state concern about the utilities' power to determine whether and to what extent to participate in a plant without the state's consent. Once a state commission approves a utility's participation in a multijurisdiction plant, however, the new regulatory scheme should preclude the state from withdrawing or modifying its approval without the consent of the other participants in the plant. By this means, plant sponsors could be assured that the change in heart of a single state would not result in the collapse of the whole project.

The situs state should retain authority to approve or disapprove the initial proposal to construct the plant in order to protect its obvious territorial interests. Its power to order cancellation of a previously approved multijurisdiction plant should be limited, however. Because cancellation of a partially completed multijurisdiction plant by the situs state could have adverse economic effects on utilities and consumers in other states,²⁷⁴ the traditional unilateral power of the situs state to order cancellation should be circumscribed. Yet, some government agency should have the power to order cancellation of a partially completed multijurisdiction plant, because circumstances can change dramatically during the often lengthy construction period.

Because of the interstate implications of cancellation, FERC is the most logical body to which to entrust the cancellation power. FERC could be directed to use a fixed, objective standard in deciding whether to order cancellation. One possible standard would be to cancel the plant if, but only if, the present value of its expected future benefits is less than the present value of its expected cost of completion. Alternatively, FERC could be directed to make the cancellation decision as a mechanical process derivative of the decisions of the affected states. For example, the plant might be canceled if, but only if, states whose utilities have committed to a given percentage of the plant's capacity find that the plant should be canceled. The second alternative seems far preferable. State commissions have superior access to data concerning their utilities' markets and total generating capacity,²⁷⁵ and they are usually able to resolve regulatory issues much more rapidly than FERC.²⁷⁶ Although the decision of one state to vote to cancel would

²⁷⁴ See *South Dakota Pub. Util. Comm'n v. FERC*, 690 F.2d 674, 676 (8th Cir. 1982) (after situs state ordered cancellation, allocation of costs pursuant to agreement resulted in a one percent increase in utility rates in four other states).

²⁷⁵ See *Butler Testimony*, *supra* note 56, at 17.

²⁷⁶ See *Pierce, The Choice Between Adjudicating and Rulemaking for Formulating and Implementing Energy Policy*, 31 *HASTINGS L.J.* 1, 3 (1979).

still have an effect on the other states, no one state's decision would whipsaw the others.

Finally, state and federal regulators should share the authority to determine the rate implications of multijurisdiction plants. States should have some power to assess financial penalties for mistakes in retrospect in order to provide their utilities with an appropriate incentive to avoid overinvestment in capacity. Yet, sponsors of multijurisdiction plants should be protected from the financial disaster that could result from the imposition of draconian penalties by one or more of the states affected by a multijurisdiction plant. State commissions, for instance, should not be permitted to retain the power to exclude all of a utility's investment in a canceled multijurisdiction plant because of the powerful adverse effect that the fear of such potential regulatory action could have on utility decisions to participate in multijurisdiction plants and on utility decisions to complete such plants where changed circumstances indicate that completion would be uneconomic.²⁷⁷

FERC should be given the power to establish binding guidelines for recovery of investments in multijurisdiction plants. The analysis of rate treatment of canceled plants and excess capacity earlier in this Article indicates the nature of the appropriate ratemaking guidelines.²⁷⁸ In the case of canceled plants, each participating utility should be allowed to recover its investment subject to a penalty for any error in forecasting. The penalty should take the form of a disallowance of a portion of the utility's cost of capital associated with its investment in the plant. Where the plant creates undesirable excess capacity for some of the participating utilities, each such utility should be allowed to recover its investment in the plant subject to a financial penalty in the form of a reduction of the utility's allowed rate of return proportionate to the amount of undesirable excess capacity on the utility's system resulting from its participation in the plant.²⁷⁹

A FERC guideline on recovery of investments in canceled multijurisdiction plants would be relatively easy to draft and implement. Indeed, FERC's present policy could provide a starting point for developing such a guideline.²⁸⁰ Drafting an appropriate guideline for the

²⁷⁷ See generally *supra* text accompanying notes 135-60.

²⁷⁸ See *supra* text accompanying notes 84-134.

²⁷⁹ See *supra* text accompanying notes 221-25.

²⁸⁰ In a case arising out of the cancellation of the Tyrone generating plant, FERC policy was described. After allocating the costs of cancellation among the parties in the manner prescribed by the parties' agreement, FERC allocated the "carrying costs accruing prior to abandonment to the ratepayers and those pertaining to the amortization period to the utility." *South Dakota Pub. Util. Comm'n v. FERC*, 690 F.2d 674, 677 (8th Cir. 1982). FERC also adopted a "variable amortization period targeted at ten

rate treatment of excess capacity resulting from participation in a multijurisdiction plant would present a considerable challenge, however. The excess capacity determination requires a detailed analysis of facts uniquely accessible to utilities and the state commissions that regulate them.²⁸¹ Thus, any guideline for the rate treatment of excess capacity should allocate to each state commission the primary responsibility for finding the many facts that are necessary for a proper rate determination. Yet, predictable and uniform rate treatment of excess capacity resulting from participation in multijurisdiction plants is critical to the viability of the multijurisdiction option. Therefore, the FERC excess capacity guideline should treat in detail such issues as the appropriate definition of excess capacity in this context and the permissible financial penalty corresponding to a range of potential amounts of excess capacity.

Finally, the system for regulating multijurisdiction plants should allow all affected parties—states, sponsors and potential investors—to know the rules applicable to the plant at the time each makes its decision to participate in the plant. Thus, the federal guidelines should be established prior to the decision of each party to participate in a plant and should be binding on the parties for the life of the plant. FERC should have the power to change the guidelines based on experience with the prior guidelines, but any such change should be applicable only to plants initiated after the change.

It is difficult to be confident that such a revolutionary proposal would function well. Even if this proposal or some variation would permit effective regulation of multijurisdiction plants, there is absolutely no reason to expect Congress to enact legislation creating such a regula-

years.” *Id.*

The FERC opinion reasoned:

We think it entirely appropriate to allocate the carrying costs accruing prior to abandonment to the ratepayers and those pertaining to the amortization period to the utility. Prior to when a project is abandoned, it is clear that the carrying costs on investment are as much a legitimate expense of the project as are the more tangible costs such as parts and materials. After abandonment, all prudent expenses associated with the project, regardless of their nature, can be calculated and amortized in cost-of-service. The carrying costs which arise during the amortization period, however, are not, properly viewed, related to the project, but are part of the utility's overall financing costs. . . . Were we to . . . require the shareholder to shoulder part of the AFDUC, it is clear that the risk of investing in electric utilities would be increased and the cost of capital would increase to the extent necessary to compensate for the additional risk.

Northern States Power Co., [1979-1982 Transfer Binder] UTIL. L. REP. ¶ 12,516, at 15,987 (F.E.R.C. 1981).

²⁸¹ See Franklin, *supra* note 175, at 17.

tory system. Only two conclusions can be drawn today with confidence. First, the multijurisdiction plant option can save the electricity industry and consumers of electricity billions of dollars. Second, the multijurisdiction plant option will not remain viable without major changes in regulatory control of multijurisdiction plants.

V. SUMMARY AND POSTSCRIPT

The five major regulatory dilemmas that arise repeatedly with respect to new plants proposed by individual utilities are certification, cancellation, rate treatment of investments in canceled plants, rate treatment of completed plants that result in uneconomic levels of excess capacity, and regulatory power over multijurisdiction plants. These regulatory questions are interrelated and are critically important to the creation of appropriate incentives to invest in new plants and to complete or to cancel partially completed plants. Moreover, the very complexity of the questions and the difficulty of resolving them in a coherent fashion suggests the need for a reevaluation of the regulatory process itself.

Some commissions have the power to certify new plants; some do not. The presence or absence of certification power may have important legal implications for the rate treatment of completed or canceled plants, but the overall operation of the regulatory system is affected very little by the existence of certification powers. The resources available to state commissions are simply inadequate to expect them to conduct reliable forecasts of market conditions twelve to fourteen years in the future. Thus, state commissions should not be expected to exercise certification power in a manner that effectively limits the ability of utilities to respond to the regulatory incentive to overinvest in capital assets.

Most commissions that have certification power also have the power to order cancellation of a previously certified plant. In some cases, however, courts have greatly limited the power of a commission to cancel a certified plant because of the potentially adverse financial effects of cancellation on the utility. Any commission with certification power should also have cancellation power. The cancellation decision requires the same analytical process as the certification decision. Ratepayers will sometimes benefit from the cancellation of a partially completed plant based on changed circumstances even if they have to pay higher rates to allow the utility to recover its investment in the canceled plant. Concern about the potential financial implications of cancellation on the utility can be met through judicial review of the commission's rate treatment of the utility's investment in the canceled plant. A com-

mission decision disallowing the utility's investment in the plant can be reversed as an abuse of discretion or, if such rate treatment is required by statute, as an unconstitutional taking of property without just compensation.

State commissions frequently must determine the appropriate rate treatment of utility investments in plants whose completion creates excess capacity because of differences between forecast and actual market conditions. Treatment of such excess capacity cases varies greatly among commissions. Most commissions include all excess capacity in rate base, but a few exclude investments in plants that result in excess capacity, and others attach a more modest financial penalty to excess capacity through some other means. Both total inclusion and total exclusion, however, have critical defects. Inclusion of all excess capacity in rate base fails to provide any check on the regulatory incentive to overinvest in capital assets. In some circumstances, this rate treatment also creates an incentive to complete plants when changed conditions make completion uneconomic. Thus, inclusion of all excess capacity in rate base is unsound as a matter of policy. Excluding all excess capacity from rate base is equally bad from a policy perspective because it creates a powerful incentive to underinvest in capacity and, in some circumstances, it also creates an incentive to cancel plants that should be completed even if excess capacity results from the completion. The optimum regulatory treatment of excess capacity would impose a financial penalty on excess capacity precisely equal to the regulatory incentive to overinvest in capacity. Unfortunately, it is impossible to determine the magnitude of a regulated utility's incentive to overinvest.²⁸² The Iowa Commission's rate treatment²⁸³ of excess capacity provides the most promising approach to the problem. By reducing a utility's rate of return by an amount proportionate to the amount of uneconomic excess capacity on the utility's system,²⁸⁴ the Iowa Commission assesses a financial penalty that may be a reasonably accurate approximation of the penalty necessary to offset the regulatory incentive to overinvest.

State commissions also must determine the proper rate treatment of canceled plants. A few commissions allow utilities to recover through multi-year amortization their complete investment in a canceled plant, including all cost of capital associated with that investment. Most commissions permit recovery of the out-of-pocket costs of the investment but exclude all or a portion of the utility's associated cost of capital. Depending on the length of the amortization period, this typical policy

²⁸² See *supra* note 56 and accompanying text.

²⁸³ See *supra* notes 221-25 and accompanying text.

²⁸⁴ See *supra* note 222.

allocates a high proportion of the cost of the canceled plant to the utility. A growing minority of commissions allow no recovery of any portion of a utility's investment in canceled plants. Allowing full recovery of investments in canceled plants, including full recovery of the related cost of capital, is a poor choice from the perspective of public policy because it does not limit the ability of a utility to respond to the regulatory incentive to overinvest. In some circumstances, it also creates an incentive to cancel plants that should be completed. On the other hand, disallowing all investment in canceled plants is an even worse policy choice because it creates an incentive to underinvest in capacity and, in some circumstances, an incentive to complete plants that should be canceled. Again, the optimal solution is to attach a financial penalty to plant cancellation that is precisely equivalent to both the regulatory incentive to overinvest and to the financial penalty for excess capacity. Despite the uncertain quantum of the incentive to overinvest, commissions that permit recovery of the out-of-pocket costs of investments in canceled plants but preclude recovery of a portion of the associated cost of capital may be imposing a penalty that is a reasonable approximation of the optimal penalty for forecasting errors that result in cancellation of partially completed plants.

Regulatory disputes concerning multijurisdiction plants present policy issues that are particularly important and particularly difficult to resolve. Under the present regulatory system, state commissions have no control over the rate implications of multijurisdiction plants whose cost and capacity are allocated contractually. At present, FERC has exclusive jurisdiction over such rates and frequently applies policies that require consumers to bear both the full cost of participation in multijurisdiction plants that create excess capacity and a high proportion of the cost of plants that are canceled. FERC's approach encourages utilities to sponsor multijurisdiction plants. At the same time, however, present regulatory treatment creates an incentive for states to prevent their utilities from participating in multijurisdiction plants. States have the power to forbid their utilities from executing contracts to participate in multijurisdiction plants, and many states can be expected to exercise this power in the future. Thus, the present allocation of regulatory power over multijurisdiction plants threatens the very viability of the option. This is extremely unfortunate because the multijurisdiction plant option has the potential to reduce the total cost of providing electric service by many billions of dollars.

Solutions to the multijurisdiction plant problem are hard to find. The two easiest solutions—increased or decreased federal preemption of state regulatory power over multijurisdiction plants—do not seem

promising. The first is not only politically unrealistic, but also merely shifts the ability to make mistakes from state commissions to FERC.²⁸⁵ The second alternative would create regulatory risks so great that utilities would not be willing to participate in multijurisdiction plants.²⁸⁶ It appears that the difficult regulatory questions posed by multijurisdiction plants will not be resolved simply by a difference in FERC or state policies. Rather, the valuable multijurisdiction plant option will be viable only if Congress passes legislation creating a complicated new regulatory system for multijurisdiction plants that reallocates regulatory power between federal and state commissions in a manner never previously attempted.

Several broader inferences can be drawn from the foregoing analysis of specific regulatory problems. First, the present regulatory system functions poorly. Regulated utilities apparently have responded to the artificial regulatory incentive to overinvest in capital assets. These past investment decisions are costing consumers tens of billions of dollars. Generally, regulators have reacted either by allowing utilities to profit from their erroneous investment decisions or by imposing sanctions on investment decisions so draconian that the artificial regulatory incentive to overinvest in capacity has been replaced in some jurisdictions by an even more powerful regulatory incentive to underinvest. In addition, some commissions have chosen a combination of regulatory policies that creates incentives to cancel partially completed plants that should be completed, while other commissions have chosen policies that create incentives to complete plants that should be canceled. At the same time, the tension between federal and state regulation may eliminate one of the most promising approaches to investing in new capacity: jointly sponsored multijurisdiction plants.

Second, while it is relatively easy to identify examples of clearly erroneous regulatory policies, it is far more difficult to devise policies that will remove all regulatory sources of distortion from critical decisions such as whether and when to build a new plant, what type and size plant to build, and whether to cancel or complete a partially completed plant. Similarly, a reallocation of regulatory jurisdiction over multijurisdiction plants that will retain the viability of this efficient method of adding generating capacity would be cumbersome and would require a large intrusion of federal power into areas of traditional state concern. The primary goal of this Article has been to suggest policies that will improve to some extent the performance of the electricity in-

²⁸⁵ See *supra* text accompanying notes 262-64.

²⁸⁶ See *supra* text accompanying notes 264-66.

dustry. The policies proposed would accomplish that modest goal. It is highly unlikely, however, that the gradual alteration of regulatory policy will eliminate what appear to be substantial distortions of investment incentives inherent in the current method of regulating the electricity industry. The root of the problem of mistakes in retrospect lies in the nature of regulation itself. Despite the pessimistic conclusions reached in recent studies of the feasibility of deregulation of electric generation,²⁸⁷ researchers should continue the search for ways to achieve this goal. The very difficulty of finding correct regulatory responses to the problem of mistakes in retrospect suggests that the regulatory system itself is ill-suited to meet the needs of the electricity industry. Deregulation would eliminate the gross distortion of investment decisions that is inherent in the present regulatory system. It is hard to quarrel with advice to be cautious when confronted with the major uncertainties of deregulation of electric generation. It may well be, however, that deregulation would not produce an industry that performs as poorly as the present heavily regulated electricity industry. The costs of continued regulation of electricity generation are so great that policymakers at least should take the initial experimental steps toward deregulation that even those pessimistic about the benefits of deregulation recommend.²⁸⁸

²⁸⁷ The latest and most comprehensive study of deregulation of the electricity industry was completed by Paul Joskow and Richard Schmalensee last year. P.L. JOSKOW & R. SCHMALENSEE, *MARKETS FOR POWER: AN ANALYSIS OF ELECTRICAL UTILITY DEREGULATION* (1983). Their painstaking analysis of four possible approaches to deregulation—complete deregulation, deregulation of wholesale transactions, separation of distribution and deregulation of wholesale power transactions, and complete vertical disintegration and deregulation of wholesale power transactions—identified the many uncertainties and potentially serious drawbacks in a deregulated industry. *Id.* at 118-254. As a result, they recommended that government respond with skepticism to the many proposals made for deregulation. *Id.* at 249-51, 252-59.

This Article suggests, however, that Joskow and Schmalensee may have underestimated the magnitude of the regulatory distortion to which the electricity industry is subject. They focused their attention on distortions created by irrational retail rate designs. *Id.* at 7, 79-90. They concluded that immediate deregulation would be neither economically efficient nor politically feasible and that the industry could never be entirely deregulated. They found that "deregulation is not likely to improve significantly the efficiency properties of retail rate standards." Distortion could be eliminated through changes in retail rate design consistent with continued regulation of electric generation. *Id.* at 183-89. Conceding this important point, however, deregulation still has the potential to eliminate other sources of distortion that are far more harmful than irrational rate design.

²⁸⁸ *Id.* at 252-59; see also Meyer, *A Modest Proposal for the Partial Deregulation of Electric Utilities*, 111 PUB. UTIL. FORT., Apr. 14, 1983, at 23.