RE-ESTABLISHING THE REGULATORY BARGAIN IN THE ELECTRIC UTILITY INDUSTRY

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EXECUTIVE SUMMARY

> "[T]he prudence of a decision to continue building a plant has no bearing on whether (a) company is permitted to charge rates that include a return on the investment in the plant upon its completion. Therefore, at the time the company seeks to earn a return on the investment, the department will determine the portion of the plant that is used and useful. For plants whose construction has commenced after this date, we will not allow recovery of plant which is not used and useful."[1]

This 1984 statement, made by the Massachusetts Department of Public Utilities (DPU) in the Western Massachusetts Electric rate case, marked a major change from the traditional distribution of risk between utility stockholders and electricity consumers. Historically utilities agreed to forego rates of return on their investment in excess of the cost of capital, in return for a reasonable expectation that they would be allowed to earn a fair rate of return on their projects as long as they were reasonably well managed. Cost overruns due to factors outside the control of the companies were routinely allowed into the rate base.

The decision by the Massachusetts DPU, now echoed in several other states, clearly stated that simply being prudent was not sufficient. If capacity was unneeded or its costs above the price of power from alternative sources, it would not be included in the rate base. Investments would be judged against their value in the competitive market as they came on line.

From the perspective of the utility companies, the Massachusetts decision appeared to penalize investors for unavoidable errors in projecting demand, in order to keep rates from piercing some perceived ceiling of political acceptability. Further, by changing the rules in mid-stream, the DPU had raised the possibility that future regulatory commissions would do the same. Finally, the requirement that future investments meet a market test introduced what the utilities consider a no-win proposition. If they misjudge demand they will lose; but if they make good investments, future regulators will allow them to do no more than break even. Thus, companies on average will face losses on their investments. This perceived assymetry in financial returns is at the heart of the breakdown in the regulatory bargain.

In June of 1986, the Board of Boston Edison established a three-member panel to look at the management of the company. This panel asked Harvard's Energy and Environmental Policy Center to assess the empirical and theoretical issues underlying the use of market-oriented tests to determine allowable cost recovery, and to give the panel its recommendations. Hence, this study.

THE PROBLEM

The failure of regulation can be considered either a transient problem or a permanent one. Those who argue that the regulatory system is sound and unneedful of fundamental revision see the turmoil of recent years as the result of two forces. The first of these is the sudden decline in demand growth, creating large amounts of unused (and, hence, to some "unuseful") capacity, for which regulators are reluctant to charge consumers. The second phenomenon is the large nuclear plant cost overruns associated with "imprudent" managers and/or unanticipated, but mandated, regulatory changes in equipment and design standards.

Others take a contrary view. They hold that the recent use of the prudency test to exclude billions of dollars of construction costs is more than a mere application of a long-established doctrine. Rather it represents a collapse of the traditional regulatory bargain. In particular, the recent spate of cost disallowances has permanently damaged the credibility of public utility commissions. Once burned, private investors will be twice shy about returning to the bargaining table with their capital.

It matters little which side wins this debate. There is blame in these characterizations; but assigning blame after the fact is useless. Nothing can change the reality that financial

markets now distinguish sharply between companies with construction programs and those without. The utility industry throughout the United States has had billions of dollars in new investment wiped from the books. The financial markets now fear that the hostility to nuclear power in the 1980s could be transformed, in the 1990s, into hostility to coal plants (because of costs related to air pollution control), or to gas and oil facilities (because of future upward pressures on fossil fuel prices).

While there is presently a surplus of electricity in most regions, this will not always be the case. New capacity will be required sooner or later. At that time one of three things will have to happen:

1) Regulatory commissions will be forced to set allowed rates of return in excess of utilities' costs of capital in order that the returns on investments which are approved for recovery can compensate for the risk that PUCs will disallow prudently developed projects.

2) Greater reliance will have to be placed on power from unregulated suppliers. The result will be higher prices and more dependence on smaller oil- and gas-fired generation. The associated transmission and distribution network will, in turn, be structured to match the hodgepodge of generation facilities. Benefits inherent in efficient system integration and economies of scale will be lost.

3) A new regulatory framework which can credibly attract capital will have to be created.

The first of these may seem appealing on the surface, since while utilities would be given higher rates of return on successful investments, consumers would not be forced to bail

them out when they made poor investments. The drawback is that regulators have found no ways to guarantee that future regulators will allow higher rates of return on successful projects, nor have they been willing to entertain the prospect of allowing utilities to earn market based rates on older low-cost capacity. Given the experience of the past sixty years, it is not surprising that utilities are skeptical that consumers, politicians, and regulators will allow them to reap windfalls on their successful investments.

The second option will certainly be embraced to some degree by every utility. Purchasing power from third party generators, along with investments in load management and conservation, are attractive alternatives. At some point in the future -- when oil and gas prices once again jump upward -- the price and availability of these alternatives will force regulators and utilities alike to consider constructing new generating facilities. The issue is not whether this will happen, but when.

The third alternative, restoring the regulatory bargain, remains the best option for insuring that future consumers will receive reliable power supplies at reasonable prices. The problem, however, lies in restoring confidence to the bargaining process: what can bind regulators to credible rules of the game over the horizons of a project's life?

When consumers have a strong interest in insuring that a facility (or service) is available at a future date, they are willing to pay a price for that insurance. They enter into contracts guaranteeing that they will purchase a percentage of the output at a certain price. In the case of electricity, consumers have previously insisted on a 100 percent guarantee that sufficient generating facilities will be built. Yesterday's 100 percent "take-or-pay" contracts, however, are no longer perceived as desirable. Most regions enjoy large surpluses of capacity and consumers, if surveyed, would probably not be willing to enter into high take-or-pay contracts. Three or four years from now, the surplus will begin to erode and the willingness of consumers to make guarantees will increase. At some point these guarantees will be sufficient to attract investors to commit capital for new facilities.

Since PUCs are both parties to and the enforcers of the regulatory bargain, they must take the initiative to restore that bargain. PUCs must develop proposals sufficiently attractive to the utilities, not vice versa. As a first step in this direction, this report recommends the adoption of a preapproval process to be used prior to the commitment of funds for new generating facilities. Such a process is intended to give all parties the opportunity to explicitly put on record their expectations as to the magnitude of various risks and

their eventual allocation. The locus of this preapproval process should be the PUC, with other state offices such as the energy office or the consumer council having the option of intervening (in the instance that this proceeding is a formal rulemaking process) or participating (if a mediation-type process is adopted).

Preapproval minimum recovery standards may provide regulators with a useful framework for committing themselves to a restored bargain. To the extent they can reward good decisions and penalize poor ones, standards provide utilities with some insurance against arbitrary action by future regulators, while providing incentives for greater efficiency on the part of management. Under the proposal we consider, the PUC and the utility would negotiate a minimum recovery level equal to a percentage of the expected total cost of the plant (i.e., less than 100 percent). For costs above the minimum up to the full expected cost, the utilities would be allowed to put into the rate base the actual cost, plus a share of the difference between the expected and actual costs (i.e., they would be rewarded). For costs above the expected cost, they would be penalized at a graduated rate. These caps would be indexed to inflation and would not penalize the company for delays caused by unanticipated regulatory actions. Companies would still have to meet a narrow prudency challenge for all of their expenditures.

Making expectations explicit before funds are committed, rather than relying on "implicit understanding," represents an incremental change. To those who expect guarantees and ironclad solutions, we point out that regulators will always be subject to political pressure. The length of their terms in office -- rarely more than four years -- almost dictates that they respond to short-term incentives. Furthermore, there is no regulatory framework which will guarantee the consumer that utility managers will never make investments which in the end turn out to be too costly or unneeded. We do claim, however, that a well-structured preapproval process which explicitly allocates investment risks and clarifies expectations will, at the margin, improve the present regulatory system. The extent of the improvement will depend on the credibility of the parties and their willingness to once again enter into a working relationship.

RE-ESTABLISHING THE REGULATORY BARGAIN IN THE ELECTRIC POWER INDUSTRY

INTRODUCTION

If the goal of regulation is to produce an efficient electric supply system in the United States -- one that produces adequate supplies of electrical energy efficiently and at prices deemed fair by consumers and remunerative by investors -- regulation as now practiced leaves much to be desired. Consumers feel ripped off and investors betrayed, despite regulators' ad hoc efforts to cope with problems created for them by the inflation of the 1970s, OPEC, and the increased unpredictability of costs and demand.

The problems of regulation can be considered either transient or permanent. Those who argue that the regulatory system is sound and does not need fundamental revision see the turmoil of recent years as the result of two forces. The first of these is the sudden decline in demand growth, creating large amounts of unused (and, hence, to some "unuseful") capacity, for which regulators are reluctant to charge consumers. The second, and equally transient phenomenon, according to this

school of thought, is the large cost overruns associated with nuclear plant construction by "imprudent" managers.

Since demand growth has stabilized at relatively low levels, and no more nuclear plants are likely to be built, regulators' imposition of the costs of excess capacity and overruns on utilities is an almost-completed phenomenon. Thereafter, this argument continues, it will be business as usual.

Others take a contrary view. They hold that the recent use of the prudency test to exclude billions of dollars of construction costs actually incurred is more than a mere application of a long-established doctrine.[1] Rather, it represents regulators' discovery of an apparently respectable way of keeping rates from piercing some perceived politically acceptable ceiling. Furthermore, ex post regulatory findings that portions of new capacity are not "used and useful," even if prudent, represent an added attempt to penalize investors for unavoidable errors in projecting demand.

It matters little which side wins this unfortunate debate, for nothing can change the fact that utility managements and investors feel -- and will act on the feeling -- that the traditional regulatory bargain has collapsed. The financial markets now distinguish sharply between companies with construction programs and those committing no new capital to the electric business. Boards of directors might agree to

small additions to capacity, and then only reluctantly, when demonstrable needs emerge. But they have had billions of dollars of their investment wiped from the books, and know that some of those billions represented money spent on coal, not nuclear plants. They fear, too, that the hostility to nuclear power in the 1980s may become pollution-induced hostility to coal plants in the 1990s, forcing regulators to renew ex post consideration of those investments, in the manner of recent years.

In short, utilities and investors understand quite well that risks previously born by consumers have been shifted to utilities. As long as there is excess capacity, this realization may matter little. But new and/or replacement capacity will be required, sooner or later. And by that time, one of three things will have to happen:

(1) The increase in the perception that investors now run a larger risk of having their investment expropriated will have to be compensated for by higher allowed rates of return on their capital, or

(2) Greater reliance will have to be placed on power from unregulated suppliers, either independent producers or restructured utilities; or

(3) A new regulatory framework, somehow reducing the risk of ex post regulatory disallowance of investments in the industry, will have to be developed.

The first of these alternatives is, in our view, unlikely to suffice. Utility managers now know that, absent some reform of the current regulatory system, a promised level of

reward can be withdrawn by successors to the regulators making those promises. Investors agree: regulators' IOUs, which take the form of allowances for funds used during construction, are discounted to 70 percent of face value -- about the rate applied to Latin American debt.

The second of the above-listed alternatives will, in almost any event, be explored by utilities and their emerging competitors. But we doubt -- further empirical work would be required to raise this doubt to a certainty -- that sufficient capacity will materialize in unregulated markets to meet the nation's need for a maximally efficient, integrated power supply system.

Consequently, we conclude that unless some new regulatory system is developed, one which provides investors with new assurance that capital prudently committed to the business will be fairly compensated, the United States will find itself with a costlier, expense-intensive, capital-starved power system, to the disadvantage of the consumers whom regulation is designed to protect. Regulators can determine what returns to allow on sunk capital; they cannot conscript new funds.

Regulators find it politically difficult to justify sanctioning a situation in which the consumer pays a price for electricity from a new facility that is substantially higher than the present average cost of power. One option for handling this problem is to defer putting a portion of the

costs of new capacity into the rate base until the economic value of that power is closer in line with the book value of the additional capacity. Many utility commissions have adopted proposals of this type, some of which are structured to ensure that the company breaks even, while other proposals force investors to take a net present value loss. In most states, the cost of the new capacity has either been allowed into the rate base, been disallowed on the grounds of imprudence, or deferred. Many public utility commissions embraced all three options by allowing a portion of a new facility into the rate base, disallowing another portion, and establishing a schedule by which the remaining costs would eventually be phased into the rate base.

In a small number of states, public utility commissions have gone a step further and disallowed costs on the grounds that the consumer should only have to pay for capacity that is both used and useful. Under this interpretation, used and useful can mean either that capacity is needed to meet demand or that the economic value of that capacity is equal to the cost of power from available alternative sources. Justification for these actions is fairly ambiguous but seems to rest on two premises. The first is that market tests are perceived by these regulators as the most equitable means of allocating the costs of excess capacity between the consumer and the utility.

The second premise is that tying utilities to market risks is not only a fair way of valuing new capacity, but also provides a basis for adjusting the regulatory bargain in the future. Taking this solution to its logical conclusion, utilities would be expected not only to build their facilities prudently, but also shoulder the risk that the power from these facilities will be unmarketable.

While the general purpose of this report is to examine the response by public utility commissions to this regulatory dilemma, its emphasis will be on decisions by a limited number of PUCs to move beyond the limits of the traditional prudency criteria and deferral strategies and adopt market tests under the heading of an expanded "used and useful" standards. Three of the states that have embraced such standards are Kansas, Massachusetts, and Pennsylvania. While there are others actively debating this concept, these states stand out as forerunners. Both Massachusetts and Kansas disallowed imprudently incurred capacity costs on the ground that these costs were significantly higher than the cost of power available from other facilities. In the case of Pennsylvania and Kansas, prudently incurred capacity costs were also disallowed on the grounds that the capacity was unneeded. This study examines the rationale provided by the regulators for adopting market tests and the consequences of retroactively changing the terms and conditions of the regulatory bargain.

It also lays out options for re-establishing fair and sustainable "contract" between investors and consumers which would encourage utilities to invest in needed capacity additions. Finally the paper lays out generic approaches to the problems of allowed rate of return and rate base determination and critiques the incentives that these approaches carry with them.