

**THE ACADEMIC/PRACTITIONER
IN PUBLIC UTILITY REGULATION**

remarks by

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FOREWORD

At the 90th Annual Convention of the National Association of Regulatory Utility Commissioners, (NARUC), held in Las Vegas, Nevada on November 13-16, 1978 a discussion panel was convened to discuss the subject of the Academic/Practitioner in Public Utility Regulation. The moderator of this panel was the Honorable William S. Newcomb, Jr., commissioner of the Public Utilities Commission of Ohio.

This publication records the proceedings of that meeting and the remarks of the four prominent panelists who participated:

Dr. Douglas N. Jones

Director, National Regulatory Research Institute
Professor of Economics, The Ohio State University

Dr. David S. Schwartz

Regulatory Economics Consultant

Prof. William H. Melody

Chairman, Department of Communications
Simon Fraser University

Dr. Harry M. Trebing

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The NRRI is making this publication available to those concerned with state regulatory issues since the subject matter presented here is believed to be of timely interest to regulatory agencies and to others concerned with utility regulation.

THE ACADEMIC/PRACTITIONER IN PUBLIC UTILITY REGULATION

Moderator: The Honorable William S. Newcomb, Jr., of Ohio

Panel Members: Dr. Douglas Jones, Director, The National Regulatory Research Institute, Columbus, Ohio; Dr. David S. Schwartz, Public Interest/Regulatory Economic Consultant, Washington, D.C.; Dr. William H. Melody, Professor and Chairman, Department of Communication Studies, Simon Fraser University, Burnaby, British Columbia, Canada; Dr. Harry M. Trebing, Director, Institute of Public Utilities, Michigan State University, East Lansing, Michigan

MODERATOR NEWCOMB: It is indeed an honor for me to introduce the distinguished members of this panel. They will be addressing the topic of "The Academic/Practitioner in Public Utility Regulation". I'm sure you're as eager as I am to hear what they have to say.

Our first panelist is Dr. Douglas Jones, who was named Director of NARUC's National Regulatory Research Institute at The Ohio State University earlier this year. Dr. Jones was previously a specialist in public utility and natural resource economics with the Congressional Research Service of the Library of Congress. Dr. Jones, a 1955 magna cum laude graduate of the University of New Hampshire, holds M.A. and Ph.D. degrees in economics from The Ohio State University.

A former Assistant Chief of the Congressional Research Service's Economics Division, Dr. Jones' experience includes three years as an economist and legislative assistant to U.S. Senator Mike Gravel (D-Alaska), two years as Special Assistant to the Secretary of Commerce for Regional Development, and another three years as the Chief Economist and Research Director of the President's Committee for Developing Alaska.

Dr. Jones' fields of specialization comprise regulatory economics, regional development, public finance, and international economics. He has published extensively in professional journals on current issues in public utility regulation, energy conservation, and tax policy formulation.

Remarks by

DR. DOUGLAS N. JONES

*Professor of Regulatory Economics and
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I. Introduction. There is some burden on any panel (and each panelist) to tie the presentation to the overall conference theme. This requires no straining in this case. Our panel thesis is (dangerously) the role of the academic/practitioner in public utility regulation, and my remarks (unabashedly) go to the general usefulness and particular appropriateness of such persons to the "firing line" mentioned in the convention topic.

As to the "regulatory revolution" phrase in that topic, my own choice of title - "Toward Reregulation" - suggests a different view, i.e. that the current substantial turmoil and ferment in our field can still be described as evolution.

As to the topical emphasis on "consumer satisfaction," while I prefer the more specific terms "customer" or "ratepayer" satisfaction, we can never too often remind ourselves that regulation - like the economy - does not exist for the beauty of the apparatus nor for the personal or pecuniary rewards of running something, but rather for the satisfaction of consumer needs.

I am aware, of course, that it's hard to talk about the contribution of the academic/practitioner in utility regulation without sounding self-serving, and yet any decent presentation always walks the narrow line between the candid and the indiscreet. However that may be, the thrust of my remarks is that whatever the contribution the academic/practitioner has made along the way in more quiet times, his role is more crucial during times of upheaval and re-examination. Like now.

There are reasons for this.

II. The Mix. What the *academic* at his best brings to the regulatory task is a helpful habit of mind; a certain dispassionateness of approach; a readiness for re-thinking. He uses the clash of doctrines as an opportunity, and dissent is his native activity. He knows that the feeling of certainty is no guarantee of truth.

The *academic at his best* is comfortable with intellectual ferment; congenial to subtleties of distinction; cares about information and

analysis; prefers rationality to romance; and knows the importance of devising a way to think about a problem.

What then of the practitioner? At *his* best the practitioner brings to the task of regulation a toughness of mind; a keen sense of what is possible; and a willingness to cope with imperfect institutions. He knows that ways must be found to balance the biases of experts; that hunting for first principles is an unrewarding pursuit; and that not much should be expected from social science in solving value conflicts.

The practitioner *at his best* is used to keeping his eye on the ball and is predisposed to timely decision making if not problem solving. He knows that a few clear ideas are worth more than many confused ones and that when a regulator tries to reopen an old question he usually finds that the question has changed.

The composite of these (perhaps somewhat idealized) skills and inclinations can be, *at its best*, the academic/practitioner. A not inconsiderable advantage for him is that he cannot be dismissed out of hand by "either camp." That is, if you've "been there" and "done it," one can't be readily discounted by the practitioner as "never having met a payroll." On the other hand, if spurs have been won as well in the world of academics, that camp is deterred from writing off the composite regulator as a "mere bureaucrat." Few quarrels in our field are as unproductive or misguided as those between the academic and the practitioner.

Yet there are some good signs of enlightenment on all sides. Academics now have less of an aversion to applied research and "hands on" experience. Practitioners are less ideological, more analytical in their approach. Courses, faculty members, and students are reappearing in substantial numbers in the transportation and public utility fields on campus. Research products and technical assistance are more widely sought after and used by practitioners in their task of making more equal the weight of analysis and information on the side of the public as opposed to undue reliance on company sources. I see this in microcosm at the National Regulatory Research Institute and at Ohio State University.

III. Re-regulation and Regulatory Reasonableness. It is pretty clear that the present pluralism in regulation, that is, the expansion of the number of parties participating - Governors' offices, energy offices, attorneys general, consumers' offices and advocates, Federal counterpart offices - is a new force in regulation making for more sunshine and more democracy in the process. It is not yet clear that it makes for better policy.

Further, recalling the history of regulation it is interesting to note that we have in some degree come full circle as legislatures (State and Federal) once again are inserting themselves in very particular ways - prescribing (for example) that lifeline rates will be allowed or that FAC's will not. If earlier periods of regulation have been labeled the "legal phase" and the "engineering phase" and the "accounting phase" I think

the current phase is best described as the "political economy of commission regulation."

I have asserted that the academic/practitioner can be most helpful in a period of re-examination. Let me mention some of what needs to be done toward re-regulation and regulatory reasonableness.

The regulatory community (with more timeliness and seriousness than in most other years) has before it a whole host of arguments and proposals for changes in regulatory policy. I say "regulatory policy" rather than the more frequently heard phrase "regulatory reform", because the latter has in the course of the debate become almost synonymous with *deregulation*, and as mentioned, my conclusion is that the real need is for regulatory reasonableness. That is the proper quest.

I would not want to see those who, on ideological grounds or commercial interest, have always opposed virtually any government regulation get their way just because the forces for reviewing a wide range of regulatory policy and practice are now with us. Review must not become wholesale attack, and alteration should not become abolition. It is a misperception of the problem and a misconception of the solution to behave as if the obvious alternative to imperfect commission regulation is no regulation at all. All too often the level of discussion is allowed unfairly to turn on comparing the evils of bad regulation with the beauties of idealized and fictional free market structures. The debate must be better than that.

A. The Importance of Being Agnostic and Eclectic. Besides avoiding an all-or-nothing stance on the question of government regulation it is important that reform be approached with two casts of mind. In the first place we should be *agnostic* in the sense of acknowledging that, despite 90 years of regulation, what we actually know about the consequences of commission regulation - how far and in what way the real results (intended and unintended) differed from the hoped-for-outcomes - is very much tied to time and place and circumstance. What worked reasonably well at an earlier time may be quite unworkable now. An institutional arrangement successfully applied to one sector may be inapplicable to a similar sector. (Railroad regulation may be an example of the first and motor carrier regulation an example of the second.) Technological change may substantially alter the scope of regulation - I think of the telecommunications industry. Dramatic changes in non-regulated competing industries may bear sharply on a regulated one - the energy industry and the natural gas sector within it come to mind. The point is that we should be pretty modest about what we "know for sure" in the regulatory field.

Secondly, we should be *eclectic* in the sense of understanding the importance of picking and choosing occasions for and methods of regulation rather than taking a doctrinaire stance facing one direction or another. This means that where markets can again work we should deregulate, where they are not working we should regulate, and where both are failing we should reregulate. If an independent commission can

best do the job we should support it; if "yardstick" regulation can work in a particular case let's do that; if public/private joint ventures lend themselves to a public interest outcome then we should go that route; and if full public ownership is required we should not be put off by that prospect. In short, pragmatism and a healthy skepticism should prevail over theory and theology.

B. The Importance of Focusing on the Right Thing. For our purposes *primary* attention in review of regulatory institutions and policy at the Federal level should center on the traditional regulatory agencies - the Interstate Commerce Commission, Federal Energy Regulatory Commission, Civil Aeronautics Board, Federal Communications Commission, and the Federal Maritime Commission. Such an agency-by-agency examination is always needed, and the House of Representatives did so in 1976 and 1977 publishing useful documents along the way.

Another equally important approach adopted by the U.S. Senate over those same years is the generic one of taking up regulatory problems that cut across agency lines - regulatory delay, the cost of regulation, the introduction of innovation and technology in regulated industries, selection of commissioners, adequacy of staff and technical expertise, the "revolving door" problem, and so on. These lines of review were complementary, and I believe we can expect good things to come from them.

There is a further point to be made toward the proposition of focusing on the right thing. Most reviews and reforms of regulation have in the past dwelt on the *administrative*, *procedural*, and *litigious* aspects of regulation partly because the investigators were usually lawyers or public administration specialists and partly because these aspects are easiest to get at. Important as these are, I believe the major focus of reform should be on the *economic* aspects. These are relatively neglected, harder to appraise, and harder to change because they involve essential interests of the regulated sectors, but to me are the real point and purpose of it all.

In this sense the broadside attack on commission regulation has done a service in at least joining the issue where it should be joined - the economic consequences, both costs and gains, of public regulation. After all, regulatory lag *per se* is not really the question but rather how this translates into costs or benefits. Similarly, the ready encouragement and introduction of innovation is not a romantic imperative but a pricing and service requirement.

C. The Importance of Dispelling Myths. Commission regulation gets a "bum rap" when the problems of both inflation and recession are laid at its door. Similarly with blame-laying about alleged capital shortages in the regulated industries. On the first score, inflation, loose statements about regulation accounting for billions of dollars in additional prices to consumers are wildly speculative at best and just plain wrong at worst. At the very least there should be a netting out of savings. Is a rise in

electric power rates or freight rates attributable to fuel cost increases to be counted as a regulator's contribution to inflation? If so, then the \$2 billion of electric utility company proposed rate increases which were *denied* by commissions during 1977 should as well be counted on the other side as holding down inflation.

It is likely that lowering the barriers to entry in the trucking industry and allowing a band of rate-setting flexibility as recently done with the airlines would result in a lowering of rates at least in the short run. This hoped-for result merely underscores the need for a sector-by-sector examination of the regulated industries and the need for not confusing any *individual* price level change with the *general* problem of inflation.

Still less demonstrable is the argument that regulation has anything at all to do with the economic recession and the slowness of the recovery. It is true that all regulation is restrictive in some sense, but it is a big step from restriction of certain practices to contraction of the general economy. I just don't think the connection is there.

And on the matter of the availability of new finance capital in the regulated industries I believe the record of the regulatory commissions is a good one - some would say too good. In the case of the transport sectors we have given ample assistance in the form of grants, loans, and tax concessions. The investment tax credit now applies in equal generosity to the utilities sector as to the non-utility sector. For the last four years in the electric power industry if rate increases and revenues from Fuel Adjustment charges are added together, the average *annual* receipts are twice the amount (\$12B) of the \$6B in rate increases for the quarter century ending in 1973. As a result of this last I note that the market value of most electric utility stocks has converged rapidly on the book value of those stocks, suggesting that the market is valuing utility stocks fairly and in competition with other investments.

There is another old saw of which I'm quite suspicious, and that is "regulatory lag." In the first place it is always assumed by critics that any lag is inherently bad and begins from the date of filings. This conclusion forgets that delay can at times be helpful to certain parties - particularly consumers - and can even be helpful to the regulated companies as, for example, when regulatory commissions are slow in reducing earnings that exceed allowable returns.

But all that aside, the transport, power, and communications sectors have already largely gotten relief from the consequences of regulatory lag by securing the adoption of various practices and devices favorable to the companies. I have in mind, of course, automatic fuel adjustment clauses, the granting of interim rate proposals, the provision that rate schedules go into effect unless specifically struck down by a commission, abbreviated hearings and reviews, and the use of future test periods rather than actual operating results in determining revenue needs.

Finally on the theme of dispelling myths it is a great perversion of the original intent of commission regulation to pretend that the role of a commission is to be entirely neutral, sitting as impartial arbiter midway

between the public and the companies to be regulated. It is true, of course, that unhealthy financial conditions in a utility are not in the best interest of the public. But it is also true that in the unequal contenting between the interests of the unorganized many and those of the organized few, a regulatory commission should tilt toward the side of the public. When this is not the predisposition the initial zealous commitment to protection of the public interest too often becomes substantially eroded by the promulgation of rules and regulations unduly favorable to the regulated; by the "revolving door" phenomenon; by indifference to the recruitment and selection of regulators; and, I fear, by legislative ambiguity and neglect of the oversight and confirmation functions in seeing to it that the performance of the commissions measures up to what the citizenry intends and indeed requires.

The answer to the question, "Who regulates the regulators?" is a straightforward one—the legislature. Perfunctory and occasional looking-in on the regulatory process and its institutions is not enough. Nor are Executive Branch efforts like the Landis, Hoover Commission, Ash Council and Dowd Reports. Here is a clear case for the usefulness of a continuing oversight by legislatures, by informed journalists, and by the academic/practitioner.

IV. Concluding Commentary. Thoreau wrote, "Every walk is a sort of crusade." And so it is with the current re-examination. Regulation, like most institutions, is renewed from the bottom and not the top. In defending regulation we need not exalt it. The trick is to see to it that the concepts, the doctrine, the theory of regulatory affairs keeps pace with the dynamics of institutional change in this field. While I know my remarks have been of the "here-I-stand" variety, I do believe it is the academic/practitioner who has the best chance of helping us turn that trick.

MODERATOR NEWCOMB: Thank you Dr. Jones. Our next speaker is Dr. David S. Schwartz. He is a public interest/regulatory economic consultant in Washington, D.C.

Dr. Schwartz was previously a Visiting Professor at Michigan State University working on a National Science Foundation Grant on the role of competition in the regulated energy utilities. He has also served on the faculties of the University of Wisconsin and the University of Maryland.

Dr. Schwartz has also had extensive regulatory experience. He was formerly Assistant Chief in the Office of Economics for the Federal Power Commission. At another point in his distinguished career, he served as a Senior Economist and Public Utilities Specialist with the Federal Communications Commission.

Dr. Schwartz received the B.A. degree from the University of Maryland and the Ph.D. degree in Public Utility Economics from the University of Wisconsin. He has testified on the electric power and natural gas industries before various congressional committees.

Remarks by

DR. DAVID S. SCHWARTZ

*Public Interest/Regulatory Economic Consultant
Washington, D.C.*

I. Introduction. As a former academic, the virtue of competition for resource allocation and equity is deeply ingrained. Yet, in the many years as a practitioner with various regulatory agencies the need and efficacious nature of the control of prices and earnings of regulated monopoly firms was indicated beyond dispute. This tension between reliance upon market forces, in contrast to, the social control agency is an ever evolving institutional force. At times the pressure has resulted in public policy formulation calling for total deregulation of a regulated industry. At other times, public policy comes down on the side of expanded or new regulatory innovation. The essential question is whether competition and regulation are antithetical or whether they are organically related. It is the burden of this presentation to postulate the benefits of regulated competition in the public utility industry.

We are all aware of the efforts that have been made in the communications and transport sectors to open up new markets for competitive interplay, or toward total deregulation. What has not been assessed is the relevance of competition in the electric utility industry. In this sector regulation is considered an adequate control over the exercise of monopoly power. Therefore, those who dismiss the viability of competition in the electric industry reason that regulation has replaced the need for competition and the relevance of the antitrust laws are inapplicable or superfluous.

In effect, the reliance on the natural monopoly doctrine which postulates the potential loss of scale economies and the higher costs resulting from duplication and waste has led to the formulation of public policy that combines Federal and State regulation of rates, services, and other aspects of electric utility operation. The fundamental question that I wish to raise is whether the choice of competition or regulation are mutually exclusive. In other words, will the public interest be better served by a regulatory process that assimilates the traditional controls and, additionally, relies upon market forces.

II. Electric Utility Markets Where Competition is Viable. There are a number of significant discrete markets for actual and potential competition in the sale and purchase of electric power. It is rather strange that the public perception of the market relates to the residential pricing by regulatory commissions of power supply. In fact, only about 30% of total sales relate to the residential user. Of much greater significance is the retail market for large commercial and industrial loads. In this market there is competition among the electric utilities to attract new customers, as well as, the possibility of attracting existing

commercial and industrial loads from the present utility supplier to a new power supplier. This is usually thought of as interface (fringe area) competition for customers close to the borders of a franchised service area of two or more utilities. As will be discussed subsequently, the opportunity exists to modify the exclusive franchise so as to expand the potential for competition in this retail market beyond the interface market.

In the wholesale market competition for firm power, whether full or partial requirements, has been the predominant form of power sales for resale for many years. Recently the power exchange market has grown at a much more rapid rate than firm wholesale power or ultimate sales to customers. The power exchange market provides a significant opportunity for competition in such discrete service offerings as economy power, unit power, maintenance power, emergency power, and other short term or intermediate sales of capacity and energy. As will be discussed subsequently, if barriers to interconnection and coordination can be eliminated, then the power exchange market can become an important vehicle to promote competition. In addition, to the extent that general transmission service is available, it would provide the possibility of expanding the potential for competition among a greater number of buyers and sellers of firm power or power exchange service.

This discussion has focused on selective competitive markets in the electric utility field, and has not addressed the potential of private generation as an alternative to central station service. In addition, there is the potential entry associated with co-generation as a viable market force. Finally, there is the benefits of yardstick competition in the same retail markets which can include direct price comparisons, inter-firm comparisons, and institutional competition.

After having enumerated the various markets where competition can and does take place, a legitimate question can be raised what are the broad public benefits from such an arrangement? Why is competition superior to regulatory control? In order to answer these questions it is essential to examine the blockages to competition which has led to sub-optimal performance of the regulated firm.

III. Institutional Barriers to Competition. A. Territorial Allocation. In the electric utility industry there is the presumption that the exclusive franchise delineating a service area is a necessary prerequisite for providing service. This territorial allocation, which would be considered an antitrust violation in unregulated industry, is usually justified on the basis of the scale economies associated with a large supplier of electric service, and the existence of a regulatory commission to prevent exploitative prices.

This delineation of the need for territorial allocation fails to distinguish the local residential market from the larger retail commercial and industrial markets, as well as the variety of wholesale sales for resale. While the relatively low usage levels and the density of the residential

market may justify the monopoly franchise, the level and the nature of service in large retail commercial and industrial markets, as well as, the variety of wholesale sales for resale distinguish these markets as actual and potential competitive arenas. In fact, it is logical to assume that by promoting competition in these larger markets, that economies of scale and efficiencies in operation can be achieved which would be absent in a restrictive monopolistic market.

In a recent decision the Fifth Circuit Court of Appeals held that the territorial agreements between Florida Power Corporation and Florida Power and Light Company were part of a conspiracy to divide the wholesale power market in Florida. *Gainesville Utilities Department v. Florida Power and Light Co.*, No. 76-1542, May 22, 1978. The Court held that a horizontal market division is a *per se* violation of the Sherman Act. The Court dismissed the contention that because the electric power industry is regulated therefore territorial agreements are sanctioned. This Court decision has many important implications in attacking territorial agreements as illegal barriers to entry, and while it relates to the wholesale market, there are important considerations for retail sales as well.

B. Refusal to Deal. There are numerous instances where a large private electric utility has refused to provide power to a small municipal system. In addition, a large utility may refuse to provide firm wholesale service or terminate firm sales. At times the large utility will insist that the smaller purchaser take interchange service rather than firm power. In addition, there are many instances in which large private utilities have refused to provide interconnection and coordination, as well as, transmission service which has had an adverse effect on competition. These anticompetitive restrictions place the smaller utility in an untenable position of purchasing all their power from the large supplier, building more costly facilities, or selling their system to the larger utility, because they do not have access to alternative sources of bulk power supply.

For example, the Borough of Elwood City and the Borough of Grove City, Pennsylvania, filed a triple damage suit against Pennsylvania Power Company alleging anticompetitive restrictions as a basis for the refusal to deal. Elwood City contends that in order to obtain electric power from Pennsylvania Power it had to enter into a contract that prohibited them from reselling power to industrial customers. *Borough of Elwood City and Borough of Grove City, Pennsylvania, v. Pennsylvania Power Company*, Civil Action No. 77-1145, U.S. District Court for the Western District of Pennsylvania, October 3, 1977.

C. Refusal to Wheel. Access to transmission service is a critical link for access to bulk power supply. In effect, the refusal to provide wheeling, or general transmission service, should be seen in the context of a refusal to deal. The unbundling of wholesale power supply so that transmission service is provided on fair and nondiscriminatory terms is an essential requirement for promoting competition.

In a landmark decision, *Otter Tail*, when the Supreme Court ultimately affirmed the District Court they held there was nothing in the legislative history of the Federal Power Act that intended to insulate electric power companies from the antitrust laws. *U.S. v. Otter Tail Power*, 331 F. Supp. 54 (1971), aff'd. 410 U.S. 366. The District Court found that Otter Tail had protected its monopoly market by refusing to wheel Bureau of Reclamation power for the City of Elbow Lake. The United States District Court indicated the anticompetitive effects on the municipal system and its ability to survive and compete with Otter Tail when it said: "The bottleneck principle is applicable to Otter Tail. Its control over transmission facilities in much of its service area gives it substantial effective control over potential competition from municipal ownership. By its refusal to sell or wheel power, defendant prevents that competition from surfacing." 331 F. Supp. 54, 61 (1971).

D. Tying Arrangement. Another anticompetitive practice in the electric utility industry is the tying arrangements. One of the more generally used practices concerns a large utility providing a single rate for power supply which includes transmission service, as well as, energy or capacity. By tying together wholesale sales the smaller purchasing utility does not have access to the various specialized power services such as emergency power, maintenance power, and economy power. While the large utilities through coordination have access to these services individually, the smaller utilities are precluded from participation because of tying sales.

In various legal proceedings and court cases the smaller systems have objected to the tying arrangements requiring that they purchase wholesale power from one utility supplier exclusively. The smaller systems contend that tying together base load generation, a variety of exchange services, and transmission has prevented competition from potential rivals because the smaller system is unable to obtain any of these services individually, but is forced to rely upon a single supplier for all types of power supply.

E. The Price Squeeze. The price squeeze issue has become a serious problem for regulators because of its frequent occurrence and serious implications. The price squeeze should be seen as one facet of potential price discrimination. In the case of an electric utility it reflects a wholesale rate to a purchasing power company from an electric supplier that also competes with the purchaser at the retail level. Usually, the price at retail is lower than the price for the same or similar services charged by the large private utility to the wholesale purchaser. The effect of this practice is to weaken or eliminate the wholesale customer as a competitor in the retail market for large commercial and industrial sales. This price discrimination usually reflects a seller charging different prices for the same service, and the question arises whether the price differentials related to the wholesale and retail sales correspond to the cost differences in providing services.

The *Conway* case is a landmark decision concerning the "price squeeze" issue. When the District Court of Appeals remanded the case to the Federal Power Commission they explicitly pointed out that any "undue preference" or discrimination must be cured by the Commission in order to avoid a regulatory gap. The Court said: "The FPC's position would leave a regulatory gap—no institution would have authority to consider an undue preference between wholesale and retail rates, even where that preference was deliberately instituted for the purpose of clogging competition, and to reduce interstate wholesale rates."

In directing the Commission's attention to the importance of competition in the electric wholesale market the District Court explicitly charged the Commission with the consideration of the anticompetitive effects of a price squeeze. The Court said: ". . . The Act did not render antitrust policy irrelevant to the Commission's regulation of the electric power industry. Indeed, within the confines of a basic natural monopoly structure, limited competition of the sort protected by the antitrust laws seems to have been anticipated." *Conway Corporation v. FPC*, 510 F. 2d, 1264 (D.C. Cir. 1975).

The discussion up to this point of territorial allocation, refusal to deal, refusal to wheel, tying arrangements, and the price squeeze have focused on various forms of market foreclosure. Before turning our attention to the issue of anticompetitive arrangements in power pools, it is helpful to realize that the institutional barriers to rivalry and competition previously discussed usually occur as part of an integrated pattern. Similar restrictive arrangements will be discussed with reference to power pools.

F. Power Pools. The purpose of this discussion is to focus on the power pooling arrangements as they impact on the potential for competition. It is not to analyze the loose pools versus the tight pools, or the operational characteristics of power pools.

A review of the early history of the power pools indicates a desire on the part of the large private utilities, for example, in New England, to restrict pooling operations to the large private companies and exclude municipalities and smaller private systems. Over time, given the pressures that were exerted by the FPC and the municipal systems, membership was permitted but on terms and conditions which were less favorable to the smaller systems in contrast to the larger private utilities. Usually the control of the operating and management committees is predicated upon the amount of generation contributed to the pool. This has resulted in the larger systems controlling the operational and planning aspects of the pool, irrespective of the number of members in the pool. In addition, there are deficiency charges and penalty payments which relate to the size of the member that result in higher costs for smaller systems than for larger systems.

There are more subtle forms of exclusion than public as opposed to private ownership, such as a formula for establishing reserve require-

ments in relation to generating capacity which effectively blocked the municipal systems in Ohio from becoming members of the CAPCO pool. In Michigan, when the Michigan Power Pool was first established in 1962 it expressly excluded third parties (this pool consists of Consumers Power Company and Detroit Edison Company). In 1972 a new agreement permitting third parties to join the pool was filed with the FPC, after pressure was exerted by the Justice Department. One of the conditions was "the ability to participate in interconnection and grid line responsibilities." Because the transmission grid is defined as 345 k.v. in the pooling agreement, this provision effectively excludes smaller systems from joining the Michigan pool.

Finally, in the KIP Pool (Kentucky-Indiana Planning and Operating Agreements), MAPP Pool (Mid-Continent Area Power Pool Agreement), CAPCO Pool (Central Area Power Coordination Group), and Michigan Pool, smaller systems are excluded or membership is permitted on terms and conditions that make pooling uneconomic or impossible. In addition, a number of pooling agreements contain territorial restrictions that prohibit competition in the service area of a member by another pool member.

IV. The Use of Market Structure in a Regulatory Framework. There is no doubt that the strategy of the regulated firm is to use market structure for its advantage to restrict or eliminate competition. The question is whether regulatory commissions can overcome the institutional barriers and promote competition in those selected markets where it is appropriate.

The market structure of the electric utility industry is well suited to promulgate oligopolistic coordination. The high degree of interdependence because of interconnection and coordination, power pooling, membership in reliability councils, all work towards a high level of communication to reduce potential conflict, while at the same time each firm can enjoy a large degree of discretion in adjusting to local conditions. Although each utility operates in a discrete market, at the industry level it will seek to stabilize innovation, develop a common response to social and political pressures, and collectively resist hostile forces which may be destabilizing.

Furthermore, there are strong forces working to perpetuate oligopolistic coordination given the homogeneity of power supply, and the fact that prices and earnings are easily monitored. Therefore, the usual pressures to erode oligopolistic collusion are missing. In addition, new entrants will find it to their advantage to accommodate to the existing institutional arrangements.

Nonetheless, the solution is not deregulation which would permit unregulated private monopolies in an unbridled manner to exploit the market. This would permit the private monopolist to maintain a position of dominance through price discrimination, cross-subsidization, entry foreclosure, and the use of political power which would result in the type of abuses and distortions normally associated with the exercise of monopoly power.

What is required is that regulators distinguish their traditional role in the residential sector, in which they pursue the normal cost of service—rate base regulation for price and earnings control. In addition, the conventional aspects of certification, licensing, and other manifestation of service requirements. The other facet of a regulatory strategy which should be implemented is to promote competition in selective retail and wholesale markets. Regulatory commissions should seek to overcome the barriers to entry, the market foreclosure, and the elimination of rivalry which the public utility firm has successfully perpetuated by employing market structure through a set of strategies that minimize risk and maximize profits subject to regulatory constraint. Regulators must employ market structure to insure that the benefits of competitive pressure on the regulated firm will act as a spur for greater efficiency and innovation.

By promoting competition the regulators will have a number of options available which are absent in the traditional approach to regulation. In reviewing the need for additional power supply, the regulators should be able to determine the relative cost of bulk power supply available from competitive suppliers limited only by interconnection and coordination arrangements, in contrast to the cost of constructing new facilities. This should increase the number of choices for available power supply, and provide for lower cost alternatives.

The modification or elimination of territorial allocation as it concerns discrete markets for wholesale and retail competition should provide competitive pressures for the firm to lower costs and prices. To the extent that greater efficiencies are achieved, the regulators must be sensitive to the need to share these savings with the less elastic residential market. In addition, it may be advisable for the State commissions in cooperation with the Federal Energy Regulatory Commission (FERC) to jointly review the price squeeze issue when a specific proceeding is before either commission. Finally, it may be necessary for a joint effort by NARUC and FERC to examine the various institutional barriers to promoting competition such as refusal to deal, refusal to wheel, tying arrangements, and anticompetitive aspects of power pools.

As I see the choices, the only alternative to the use of market structure as a regulatory tool is to pursue the continued pass-through cost-of-service regulation that insulates the firm from risk and in many instances, passes operating and financial risk forward to the consumer. Regulators on the other hand can employ market structure to assure flexibility and adoption to change. They can utilize selective competitive pressures to promote improved performance in the electric industry, lower costs, and provide an alternative to ever escalating rates.

MODERATOR NEWCOMB: Thank you Dr. Schwartz.

The third member of our outstanding panel is William H. Melody, Professor and Chairman of Simon Fraser University's Department of

Communications. He was formerly professor of communications economics in the Annenberg School of Communications, University of Pennsylvania. He is a former Senior Economist with the Federal Communications Commission and has previously taught at Iowa State University and the University of Nebraska.

Dr. Melody has been active in the field of public utility regulation in general and, in particular, communications regulation. He has testified as an expert witness before Congress and various regulatory agencies on matters affecting costing, pricing, and public policy in the telecommunications, electric power and natural gas industries.

Among his many publications are *Communications Technology and Social Policy* (co-editor), *Relations Between Public Policy Issues and Economics of Scale, Interconnection: Impact on Competition, Carriers and Regulation*, *Interservice Subsidy: Regulatory Standards and Applied Economics*, and *Telecommunications Regulation: The U.S. Experience as a Guide to Canadian Policy*.

Remarks by

DR. WILLIAM H. MELODY

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In my comments today, I wish to address two major themes. One is the academic/practitioner relationship, as I assess it, and secondly the specific implications of that relationship in the area of ratemaking, rate design and costing. I think the academic/practitioner is a unique form of schizophrenia in that it reflects those who are not at home either in academia or in practice. This makes you a member of a very high community in that you must put up with the sneers from both sides from time-to-time. Therefore, it requires that you have a thick skin. However, I think the virtues of attempting to bridge the two fields are provided in that you eventually can see that—assuming you can maintain some creditability with both academics and practitioners—you can show that practice has some usefulness for academics and also that academic theories, models and ideas have some usefulness for practice.

One can usefully approach this topic from several perspectives. You could examine the role and contribution that academics have made to the regulatory process and the role and contribution they are making now. We might forecast what it might be in the future or perhaps prescribe what it ought to be. By the same token, we could ask what role in contribution have regulatory practitioners made in the development of new insights and new explanations, new understandings of the effects of public utility regulation in modern society. Here also one could examine what the role in contributions of practitioners has been, is now, will be, and optimally might be. I think general assessments of these questions would yield readily predictable answers, depending upon, of course, who

the assessor was. Academics have not been terribly useful to regulatory practitioners in implementing their responsibilities. Practitioners have not been terribly useful to academics in their pursuit of a better understanding of the regulatory process. To practitioners, academics generally are naive, unrealistic, unable to operationalize their ideas, or especially when you look at current hearings before many commissions, incomprehensible. To academics, practitioners are engaged in short-sighted processes of ad hoc decision making on only short run problems, and employing arbitrary or incomplete decision criteria. They fail to consider the interrelationships of their decisions and are subject to undue political influences.

In a sense, both sets of criticisms are right. Academics do not exist for the sole purpose of assisting regulators to implement their responsibilities and practitioners do not exist to facilitate the desires of academics to better understand the workings of society. The respective roles in society are quite different. Yet their interests are directed to similar problems and the success of each is very much dependent on the other. There is much to be gained from one another. In the past, academics and practitioners have acted principally in the role of critics of one another. Although this role is often viewed as a negative one, it can be, and often is, constructive. We all need and can benefit from detached substance criticism of our work. Without it, we would improve at a much slower rate and can often be led along false paths. In this role the academic has the advantage. This is the traditional academic role in which academics are supposed to excel by education and day-to-day work. The academic is a good critic. He is often not so hot, however, in coming up with better solutions. But this does not mean that the role of the critic should be abandoned. Regulators' criticisms of the activity of academics in the regulatory process generally have not sprung from deep analysis, rather from the frustrations of finding many academic contributions disappointingly vacuous in addressing important policy issues. But this criticism too is valid. It is important feedback to the academic community on the usefulness of its work to actual regulation.

What I see as the academic practitioner is in a sense the development of a hybrid. The loyalties are not entirely with academia, the loyalties are not entirely with practice. Although the role of critic is valid and useful, it is an extremely limited contribution. If academic theories and models relating to regulation are to be something more than "academic", academics must understand the practical and operational limitations. Most theories flounder, not on logic, not on theory, not on reason, and not on precision. They flounder on two basic criteria. One is relevance, and two is implementability. Very often academic theories optimize solutions to oversimplifications of nonexistent problems. There is a need of this recognition by academics. There is a need for some involvement in the practical "real world" regulatory process. And so it has been traditional for many academics to dabble in the sense of taking short leaps from academia into the real world to gain some experience. However, the

commitment is really to academia and it is, as I have classified it, dabbling. By the same token, it is generally viewed as good for practitioners to be able to step away from the day-to-day hustle of their responsibilities and go to academia for a week or two, maybe even a year.

I would like to emphasize that if one examines the history of both theories from academia and policy as developed in practice, they have benefited from one another. Theory has improved as a result of observations of practice. Practice has improved as a result of the operational implementation of some theories. In fact, a famous economist, in one of the more famous books of this century, observed that all policy is the result of the implementation of the ideas of some defunct economist. Looking at some of the hearings these days I think you are getting a lot of defunct economists. (Laughter.)

So given this as background, what can the academic practitioner contribute to the process? Specifically, I think it is a merger of the strengths of both. And I would pinpoint the following as the major areas.

First, a recognition of the longer range effects of current issues. Given the pressures of case-to-case decisions, many commissions are simply not in the position to consider or even to be aware of the longer range consequences of the decision. They are not able to extend analysis into the consideration of longer range policies on practices which otherwise get determined on an ad hoc case-by-case decision basis.

Secondly, it is necessary to note the interrelationships between issues. Academics, particularly, should be in position to provide a perspective on a total regulatory process with an involvement in the process to note and emphasize the interrelationships of specific issues. Let me give you an example. It is traditional to look at such things as the appropriate costs for consideration in rate design as one element for consideration. And then to consider the matter of competition as something involving a completely different policy. Well, if one stops to think, it is apparent that the ultimate policy with regard to costs will determine what the policy is with regard to competition. The best illustration of this is of course the American Telephone and Telegraph Company's advocacy of marginal cost before the Federal Communications Commission. The particular brand of marginal cost that has been proposed is one that eliminates most of the costs and clearly, if it were accepted, no competitor could possibly survive and compete under that cost standard. Recognition of the interrelationships of these issues is crucial.

A third area where the academic practitioner can make a substantial contribution is in the examination of history to prevent regulation from repeating a process which has gone on before. In particular with regard to issues that are before commissions today, I submit that if you look back to the history of regulation you will find that a great majority of these issues have been examined very thoroughly throughout regulatory history. They are simply appearing again in a new guise and a new terminology. You will find for example a great similarity between the debates on marginal costs or LRIC, as being defined in electricity these days, and the old debates on reproduction costs for the rate base. In these arguments the issues run directly parallel.

A fourth area is the consideration and evaluation of alternatives that would not otherwise be considered. The normal day-to-day regulatory process takes place within a fairly constrained set of operations, and clearly the academic practitioner should be in a position to provide the imagination for the consideration and evaluation of alternatives that do not normally become considered in the process.

A fifth area where the academic practitioner should be able to make a contribution is in the conceptual formulation of the issues for analysis. This I think follows directly from the critics role. In many cases, whether particular issues can be resolved with ease or great difficulty, depends upon the formulation of the issues. Here, I must admit in many cases academics, and particularly those active in consulting, would find their best interest going in the opposite direction since the income is a direct function of the implementation of complicated methods and not simple ones.

Another area would be the examination of implications of alternative regulatory policies in the regulatory process. One of the things that has clearly been lacking in regulation is the ability of commissioners to be able to have full assessments of what the implications of alternatives are. This then results in the elimination of all but the most familiar ones.

Finally, I think the most particular area where academic practitioners must make their contribution is in the operationalization of theories and concepts, taking what is valid from theories, the fundamental ideas and concepts, and making them operational. The question of ideals and assumptions is nice when one is working out mathematical models. It is extremely limited when we are talking about workable applications.

Now for some illustrations. In particular, I would like to emphasize the consideration of cost in the regulatory process with specific reference to problems before most commissions today. Perhaps the cornerstone of regulation is the definition and application of costs. Costs provide the fundamental benchmark upon which rates are determined. Today, I think we can classify the current cost issues being brought before commissions in three categories.

First, those revolving around the rate base, and rate base valuation. Before many commissions with the current concern about our scarce energy resources, we are seeing the renewal of the traditional debate on the applicability of original cost versus reproduction cost. In this sense, it is a return to the historical debate which I think should have been pursued to conclusion many years ago. Despite this renewal of the debate on the original cost versus reproduction cost, the arguments brought forward are essentially arguments which are not addressed to the fundamental tests of whether reproduction cost or original cost is the most appropriate standard in reality. Any cost standard which proposes a measure which can only be implemented by someone's personal subjective evaluation, whether that is an engineer climbing all over the plant or an economist contemplating his navel to determine the LRIC, is likely to be a non-operational standard for regulation.

The second area arriving from rate base considerations is construction work in progress. Construction work in progress now is included in the rate base by many commissions. Many commissions have had hearings. Some are having hearings now. What is interesting is that when one examines construction work in progress, the emphasis is on the calculation effects. What is the difference between including it in the rate base or excluding it from the rate base and then capitalizing a return on the construction work in progress amounts. If one examines that question, you can then ask whether a consumer would prefer to pay now or pay later and whether the consumer's cost of capital is any different from the company's or the banker's. But that is not the significant issue in terms of the real implications for regulation. Construction work in progress raises two crucial issues with regard to the effects on the regulatory process. Is the process to continue as one in which investors supply the capital and consumers pay service charges on the use that capital, or is it to be modified into one in which investors will be supplying a portion of the capital? The implications of this are rather significant in terms of the traditional exercise of the private supply of public utility services.

The second aspect of this is the effect on rate base regulation. If one examines the implications for the ratemaking process of including construction work in progress, in essence it is an abandonment of the prudent investment standard of rate base measurement. It takes us back to the time that preceded the famous case of *Smyth v. Ames*, 169 U.S. 466 (1898). The rate base is now measured by capital supply to the company without regard to how the company spends that capital and whether the investment is efficient, or perhaps even used, in its public utility operations. These are implications of the longer term implications upon the regulatory process, which in my judgement, should be the basis for decisions rather than the narrow calculations. These are items which I think the academic practitioner should be emphasizing in these regulatory proceedings.

The third area is in the treatment of joint costs in the regulated industries where there are substantial amounts of joint costs, with joint costs being defined in the economic sense. They can not be allocated on any sound economic basis. Here I do not mean to include the classification of common costs when plant is used in common by different services. Of course those costs can be allocated. I am talking about joint costs, the traditional peak versus off peak question. When you create capacity for peak service you have automatically created capacity for off peak service. The allocation of costs between peak and off peak service is an arbitrary decision. Under conditions of joint costs, the cost allocations become not matters in which there can be an economic determination but the allocations are matters which reflect the implementation of policy. Costs do not determine rates. The social policy determines what the cost allocations will be.

The best example of this, of course, is telecommunication jurisdictional cost separations which has always been a matter of implementing national social policy. This is currently an issue before the FCC, the joint board and several State commissions, including Alaska and Hawaii. What I think should be emphasized is whether the joint cost allocations in the separations process are implementing the appropriate social policy? The question of sitting down and determining mechanical allocations to determine an optimal Ozark Formula is certainly a diversion from the real issue.

The other area of cost emphasis is that dealing specifically with rate design. In rate design I think again we can classify the problems into a couple of areas.

The first is the cross subsidy question in competition. Are utilities using their monopoly service to subsidize their competitive service? This is an issue which is prevalent in many industries, perhaps the most significant in communications. Here again the cost standard will determine what the competition policy will be. What is particularly interesting is that in the applications of the marginal cost concept, which is central to all these debates, the marginal cost of course depends upon the marginal coster. In communications, the marginal costs are extremely low, way below fully distributed costs. That is because it is being used as an anticompetitive weapon. You may be interested to know that even the Post Office is characterized by continuing and endless economies of scale, if one were to believe its marginal cost calculations. In electricity, however, the concern is getting high rates to conserve and so the marginal costs are extremely high. That is of course if there is competition when they become extremely low. When one is dealing with this kind of concept, it is clearly not operational insofar as the effect of regulation is concerned.

The other matter is the current concern in the energy industries with regard to rate design and the application of time-of-day pricing and the peak-off-peak formulation. What I find surprising is that the peak-off-peak issue has been around for at least a hundred years. There has been various kinds of peak-off-peak pricing and one can pursue the time-of-day problems with regard to any set of costs concepts. Unfortunately, I think the pursuit of time-of-day pricing analysis through most of the marginal costs that have been proposed will be to the benefit of the lawyers and the consultants, and not much to the regulatory process.

I would like to comment just very briefly on the applicability of marginal costs because it does cut across all these areas. Some of you may know I have been a critic of marginal costs and particularly the theory of marginal costs. I would like to emphasize that I have criticized the application of marginal costs on two grounds. One is the relevance of the theory. The theory is a beautiful theory, it is a logically perfect one you can optimize. The only problem is that it assumes reality away. That makes it beautiful as a logical deductive exercise for manipulating the

minds of students in school. When it comes to applying it to a real world problem, it has substantial deficiencies. In addition to that, of course, most of the studies that attempt to implement marginal costs are not faithful to the theory in any event. This makes my criticism a little bit schizophrenic, which I guess classifies me as an academic practitioner in that I criticize the applications of the theory because they are not valid interpretations of the theory. Therefore, the consultants go back and do better-and-better applications of studies to this irrelevant theory.

But despite that criticism, I would like to emphasize that the theory is not devoid of contribution to the regulatory process. The theory has some very important economic ideas which should be central to the regulatory process. Out of the theory comes the underlying logic of opportunity costs, namely one should assess the costs of doing one action in terms of the best alternative. This notion can be applied within the framework of a real cost of a utility. Here I am somewhat encouraged by the activity of the Federal Communications Commission in applying sensible economic costing within the framework of a full distribution of actual costs. Academic practitioners, I think, can shed considerable light on this issue.

By the same token, the peak-off-peak issue, which is raised in both communications and electricity, is something in which the economic concept of joint costs can be made applicable if academic practitioners put their minds to it. The key issue here is that if any academic theory model cost concept, or whatever, is going to be made operational, it is going to have to have accountability with it. It is going to have to be a standard that someone other than the witch doctor, who does it, can determine whether or not it is right or wrong. Also it is going to have to be applied in a reasonably rapid efficient manner. If we look at most of the proposals, with regard to the application of marginal cost in both electricity and communication, what we are talking about is institutionalizing in the regulatory process million dollar cost and demand elasticity studies as a necessary part of regulation, in which regulators of course will simply sit there and be buffaloes by these enormous studies and accept the words of the consultant witch doctors. That I believe is not a useful contribution to the regulatory process.

The same thing I think applies to the application of demand theory. A lot of the proposals relating to demand theory attempt to get at differences in the demand elasticities between different users and different hours of the day and different classes of service. The economic concepts of demand are important for consideration in the regulatory process, but certainly not at this level of theorization.

I would like to emphasize that the academic theories do have something very positive to contribute to the process, but unfortunately they generally are not within the framework of the traditional academic theories themselves. Hopefully, the academic practitioner can play the crucial role in bridging the gap between academic theories and the

implementation of operational concepts for regulation. If so, both can benefit.

MODERATOR NEWCOMB: Thank you Dr. Melody.

Our final panel member is Dr. Harry M. Trebing, Director of the Institute of Public Utilities and Professor of Economics at Michigan State University.

Dr. Trebing is a past chairman of the Transportation and Public Utilities Group of the American Economic Association and a past president of the Association for Evolutionary Economics.

Professor Trebing served as Chief Economist with the U.S. Postal Rate Commission and as Chief of the Economic Studies Division of the Federal Communications Commission. Aside from his responsibilities with Michigan State University, he also presently serves as Principal Investigator for a two-year National Science Foundation funded project concerning regulatory reform in the energy utilities.

Dr. Trebing received the B.A. and M.A. degrees from the University of Maryland and the Ph.D. degree from the University of Wisconsin. His publications include *New Dimensions in Public Utility Pricing* (editor); *Realism and Relevance in Public Utility Regulation*, and *Market Structure and Regulatory Reform in the Electric and Gas Utility Industries*.

Dr. Trebing is also a member of the National Research Council's Committee on Telecommunications, a consultant to the Federal Communications Commission, and a public member of the Board of the NARUC National Regulatory Research Institute.

Remarks by

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As we know regulation is 91 years old. This should be a time when the commission system sits back and basks in the joys of senility. It is denied that opportunity by all its critics—those coming from the University of Chicago which provide an intellectual attack on the system, the American Enterprise Institute which supplies a monetary attack on the system. So the commission system is certainly being bedraggled and berated. In fact the draconian measures that are advocated are really awesome. As you read the critics you get the impression they all belong to the General Philip Sheridan School, "the only good regulator is a dead one." Now, for those of us who believe, however, that there is a purpose for the role of regulation, one of the really crucial issues is this question about the focus of commission regulation. Can you introduce regulatory reform if you have the focus of regulation drawn along traditional narrow

terms? In order to make regulation a more viable institution you have to broaden the focus of regulation. And that is the thing I would like to look at this morning.

Traditionally, what regulation has looked at essentially is this. The first is control of operating revenues. The operating revenue covers the cost of service plus a fair rate of return. The second is what we have always assumed which is that price structures have got to be nondiscriminatory and promote efficiency. Even the block rate in the period of its heyday was viewed as a means of promoting efficiency. The third alternative or the third objective is that regulation has got to assure adequate service. Now, given these objectives in this fairly narrow focus of regulation, the assumption is, if regulation is successful, what you are going to do then is minimize income distribution from the consumer to the monopoly firm, the prices are going to be reasonably tied to the price of service so you are not going to get distortions in resource allocation and income redistribution. Now, if there are equity considerations in this kind of setting, what you will find is that the equity consideration is always passed on after the fact.

Now, if you accept this narrow definition of regulation, where can you go in terms of the future for improvement. Well, my problem with the narrow focus of regulation is that it limits your opportunities for improvement. The first thing that you are inclined to do is to emphasize new analytical techniques so that your techniques for measuring the rate of return, new pricing concepts, will be more and more precise. This is true in rate of return, and it is true in pricing. The second thing you are inclined to do under these circumstances is to become enamored with the new kind of operations research models which are very popular now. As short cuts for arithmetic—they are great—but in terms of broadening the perspective of regulation—they have very severe terms of limitation.

Now, let us now look at the shortcomings of adhering to this narrow approach to regulation. It seems to me there are four principal shortcomings that we should be aware of. The first one is that we focus again on the question that the objective of regulation is to control revenue requirements and earnings, second, to establish pricing guidelines, and, third, to assure adequate service. If you take that as the objective of regulation the first problem you are going to have is that it is extremely difficult to establish generally acceptable principles or guidelines for assessing either price or revenue requirements. We have had a good deal of experience in this area and what most commissions find themselves confronted with is not a generally accepted set of principles they can deal with, but conflicting principles. This is true if you look at almost all the major areas.

For example if you look first at forecasting, you do not find a clearly acceptable forecasting model. What you find are forecasts which tend to support the objective of the person making the forecast. I can give you a concrete illustration of this in the case of the American Gas Association. The American Gas Association for a number of years cried "wolf." They

said there was no gas. The Carter Administration believed them and they wrote gas out of the National Energy Bill. They had to get it back in so what did they do. Well, AGA is delighted to endorse a system on set of forecasts which compares gas supplies under regulation and gas supplies with deregulation. And suddenly gas appears! What they find is that in 1980 there will be 8% more gas with deregulation. In 1985 there will be 33% more gas with deregulation. In 1990 there will be 43% more gas with deregulation. Well I am sure that this is a fairly controversial concept and it does tend to show one thing—forecasting tends to suit the objective of the person making the forecast.

Another area where we have been unsuccessful in developing concepts that give us precise regulatory tools is the question of how to evaluate new investment. Closely tied to the question of investment is the need for new investment. And we are stuck here with the problem “How do we measure sufficient reserve margins?” Well, as Dr. Schwartz mentioned, you find a very interesting phenomenon. In the winter of 1978-79 we find that reserve margins are 31½% of peak capacity. That is a tremendous reserve margin. They have spread all over the country.

Now, the regulator is confronted with a difficult problem. What does he do now when he has to make a decision or she has to make a decision about new investment. We have been unsuccessful in developing an analytical framework to measure the economic costs of whether reserves are excessive or not. We have no adequate tools for determining what constitute adequate reserves. We do not know whether simple percentages are adequate, whether loss of load probability is adequate, or whether loss of load probability tied into interconnection is adequate. Finally, we find that one of the principle institutions for making the reserve estimate, which is the National Economic Reliability Council, tends to be a politicized body.

So again what the regulator is stuck with if he takes a narrow view is the great difficulty of trying to develop precise tools. In the area of rate of return, for example, we have been studying this thing now for some 30 years, and about all we can conclude probably is that the capital structure has some impact on the overall cost of capital and that the stock price measures are not very good when the market and book values are out of wack. What about the DCF model? Well, we have got that. We have got the Gordian model. Now we have the newest which is the capital asset pricing model. And what is happening now is that the capital asset pricing model is being introduced at the regulatory level at the very time it is being discredited at the academic level, which is a discouraging process to say the least. Again the regulator, if he is going to try to narrow his objectives, pluck out precise tools, is really in a dilemma.

Finally, we come to the great enigma—pricing guidelines. No longer is it simply a fight between fully distributed costs and marginal cost, we now have a whole group pushing their own concepts of marginal cost. We now find that we have got the NERA model for marginal costing. We

have got the Gordian model. We have got the Ernst & Ernst model. And I am sure there are a lot of others who are out there hustling, trying to sell models. And how can the regulator pick from among these with some degree of objectivity. Well, I think it is an extremely difficult task. So that is my first major objection to believing in the narrow approach, or to holding to the narrow approach. It is a very difficult thing to try to develop tools that are going to give you this precision and objectivity. But there is a second major problem that I have with the narrow approach and that is that it does not give the regulator a full grasp of the role of price in these public utility industries.

No simple pricing guideline is going to give you a precise or good insight into the role of price into the area of the public utility industry. For example, price is used in the public utility industries as a form of limit entry pricing. What you will find is that the established firm will use price to preclude new entries. We had that in the case of DATRAN. DATRAN was an outsider that wanted to provide a switched data service for 35 cities. They offered this service for 35 cities, the Bell System retaliated with data phone digital service for 24 cities. The Bell rate was substantially below the DATRAN rate. By the time the administrative law judge found that the Bell data phone service was a competitive response that was not cost justified or was not based on adequate costs, what had happened, DATRAN had gone bankrupt. So what you find is that price is a limited tool.

You also have the price squeeze which Dr. Schwartz talked about, in which price is used in effect as a device to share the electric utility market. In effect what happens under the price squeeze is that a utility which supplies electricity to a municipal system or to a co-op sells at one price, it sells to its own industrial customers at a lower price, therefore, it precludes the municipal from attracting what—the industrial customer.

Also another crucial area where price plays an extremely important role is in the question of transmission rates. This is going to be an extremely important and growing role as time goes on. What you have, of course, is the Otter Tail case. There you had, as Dr. Schwartz mentioned, a question of whether this co-op could get the Otter Tail Power Company to wheel power. There was a court decision in 1973. Since that time the fight has been over one thing, and that is the rates that will be charged for transmission. That issue is still to be resolved. The net result of course is that I doubt the Bureau of Reclamation power will be there by the time the decision is resolved.

Another area where transmission pricing plays a tremendously crucial role is in network access pricing. What rate do you fix for access to the telephone plant. But if that is one dimension of pricing, where you have limit entry pricing, there is also a tactic on the part of firms in this field to use pricing as an umbrella. What you will find is that the firm that wants to get into the industry will try to get a high price. And what you will find then of course is this. The established firm wants to use incremental costs to keep out the new entry. The person who wants to

become the new entrant, will try to get the price up and he will use fully distributed costs to promote the umbrella.

But there is another dimension beyond that where pricing strategies are used. What you will find is that pricing strategies are a way of keeping a community of interests, for example, within a power pool. The power pool's pricing policies become a way of solidifying the pool and keeping people from going outside that pool. Also pricing in the field of communications is a way to promote a community of interest through telephone settlements and separations.

Now a third area where I think this narrow focus of regulation comes into real difficulty, is that it does not come to grips with the problem, which is becoming increasingly important, namely that of equity income distribution. In the past, as I mentioned, the typical approach was to look at revenue requirements, prices and then pose the question of equity as a kind of afterthought. We still have an awful lot of that. You find, for example, public utility management saying that the demand for residential service is inelastic, therefore, what will happen is that the residential user is always dumped on. He gets all the common costs.

But I would like to go beyond that one for just a minute and consider what to me is a much more critical area. As we run into these three phenomenon—first, the imbalance between current costs and historic costs, second, the curtailment of gas and the emergence of redundant plant, and, third, the emergence of new high risk technology—you have a very critical problem. Who is going to bear the risk of all of this? This is something that regulation, if it is going to be successful, has got to come to grips with.

Let me give you the first example. You have hydro power, which is low cost, and thermal power which is high cost. You have got flowing gas which is low cost, new gas supplements which are high cost. And you have old plant which in many cases is cheap, new plant which is high cost. You have a very critical question of how you are going to apportion those benefits and that has an enormous implication for income distribution. The purely academic economist would say set the rates on the basis of marginal costs and then we will let revenues go up and we will tax away the monopoly profit. But for the academic practitioner this is not really very much of a solution. He has to pick between vintage rates, the inverse elasticity rule, inverted block rates, lifeline rates and a host of other alternatives in trying to come to grips with this imbalance between high current costs and low historic costs.

There is another area too where I think we should recognize this risk problem and that happens when you have redundant capacity. For example, lets say the pipelines. If you pursue conventional rate making, and that is one of your major objectives, you are going to be assured that what you will do is to take the cost of redundant capacity and pass it forward to the high priority jurisdictional customers. The rate making process brings that about. You do not need to have a volume variation adjustment clause simply by pursuing traditional ratemaking techniques.

The cost of redundancy is going to be dumped on the residual customers. If you want to do it, you should make that a conscious decision. It should not be something that comes to pass simply because you do not recognize this risk element.

Thirdly, with respect to this question of risk, we have a question which is crucial. What about the new high cost technology? I am thinking now, primarily, lets say of coal gasification plants and nuclear plants that are built on fault lines. Lets take a coal gasification plant like the one proposed out in the Dakotas by the Great Plains Gasification Association, which is a consortium of pipelines. They are talking about natural gas that will sell from five to seven dollars per thousand cubic feet. Now that is the equivalent of having oil in the 35 to 40 dollar barrel range. What will happen? Well the regulator has got to make a decision. If he rolls in the price of the new high cost seven dollar gas with the old gas and puts construction work in progress in the rate base, he will shift that high cost project and all of its risk forward to the consumer. On the other hand, if the regulator gets himself involved with applying incremental pricing, and he uses AFUDC, then a portion of that risk is going to be shifted back on the investor. So my point is, unless you explicitly recognize this risk factor, what is going to happen is that the regular ratemaking tools will make the decision for you and you will not perceive these broader objectives of regulation.

There is a fourth area where I think traditional narrowly focused regulation runs into real problems and that is the one that Dr. Schwartz talked about. That is the question of industry structure. The problem really is that if you follow the narrow objective of saying that regulation must look at revenue requirements and pricing, you tend to take a very passive view of industry structure and new technology. The result is that you make no real judgments and in fact, by taking no action, the regulators are planning. They are planning by letting those forces that will normally shape the industry structure dominate. So in effect by taking no action you do make a form of plan. And so a structure will emerge and the regulator will not come directly to grips with it.

Also, another factor is that by not looking at industry structure, and by that I mean a concentration of firms, cost, technology and so forth, what you find is that you have a situation where you do not know what market structure is conducive to innovation. Also, no matter what pricing guideline you employ, whether it is fully distributed or average cost, or marginal cost, that guideline of making price equal to marginal cost says nothing about the underlying cost structure and whether that cost structure embodies a high rate of technological innovation.

Finally, by applying these pricing guidelines, you are making implicit judgements as to who participates in the benefits of technology. Let me give you a good concrete example. If you have telecommunications, especially on the long haul end of it, where technology lowers costs, and if you decide that through your pricing guidelines the competitive markets will be charged a low price and the monopoly markets will be

charged a high price, in effect you are distributing the gains of technology primarily to the competitive market. You may not recognize that this is what you are doing, but by applying the guidelines in a narrow context, that is what you are ending up with.

Now I guess you can draw from this that I am not overly enthusiastic about the prospects of continuing regulation within a narrow context. It seems to me that you must broaden the framework of regulation. At this point you may think, "Oh my God, this is one of the problems with an academic practitioner. We can not do what he wants to do now." How can we broaden the perspective? Well the only thing I can say, by way of adding to my side is this. I would point out that if you look at the bills before Congress, like the Bell Bill, or the Van Deerlin Bill, which are two opposites, those bills were focused on this very question of industry structure; if you look at the reforms that were directed in the 4-R Act against the ICC, where they made them look at market dominance, they were trying to broaden the ICC and make them take cognizance of these broader issues; and if you look at a whole string of court decisions, the *Gulf States case*, *Otter Tail*, *Conway*, *Hawaiian Telephone*, even *Execunet*, and most recently - *Central Power and Light*, invariably the courts are taking the view I did and that is they tell the commission time-and-time again, primarily the Federal Power Commission, and to a lesser degree the FCC, that you can not consider these issues in a vacuum.

If you read these cases you will find that the Federal Power Commission invariably hangs on the argument that they do not have the jurisdiction. We can not do this. But I have never seen people who could ride forward looking backwards with such a degree of comfort. What they always find is: "We do not have the authority, we do not have the responsibility. The house is on fire but we are not authorized to take out the hose." What the court says again-and-again, the court of appeals and the Supreme Court, is that you must not look at the issues in a vacuum. Antitrust, market structure, broad social issues, environmental issues, must be addressed directly and it is not sufficient to take an environmental impact statement prepared by an intervenor and paste that on the back of a decision.

With that support on my side, lets go now to the question of a broad focus for regulation. I think here we really have a problem because you are getting regulation into a new area. I would hope that this is where the academic practitioner could make a real contribution. We do not have an awful lot to go on here. We have got the limited experience of the FCC. And all the FCC did by trying to broaden the issue was essentially to liberalize entry. We can draw some conclusions from that. We can show, for example, that in that whole period beginning with the old *890 Case* in 1959, this policy of liberalizing entry has done one thing and that is it has made the market structure a very crucial regulatory factor by liberalizing entry. You have increased consumer choice and you have tended to stimulate innovation in marketing new products. Also you have

been able to show that by liberalizing entry there are retaliatory tactics on the part of the established firm. The firm will use restriction on transmission and the firm will use pricing strategy.

I think we can also learn, by the DATRAN example I gave you, that one of the things the FCC did wrong was to first liberalize entry without having pricing guidelines. It took to liberalized entry fairly early on, but it took them 15 years to try to figure out what was a pricing guideline? So you can well expect the DATRAN type of situation to emerge under those circumstances. I think you can also see from the FCC experience that if you have got a market structure policy in which you are trying to broaden the goal of regulation, you have got to look at the impact of the regulatory process itself. For example, you can hang these things in an administrative proceeding to the point where the intervenors die. And instead of holding a hearing you are holding an autopsy as in the case of DATRAN. You have got another problem too and that is if you have got giant firms coexisting with small firms, what kind of market structure policy are you going to have? The FCC did adopt restrictions on AT&T's use of the satellites. But that in effect is also a market structure policy. You better watch what you are doing there.

There is a final point in trying to draw experiences from what the FCC did and that is that structural pluralism does seem to have substantial benefits when there are periods of rapid technological change. I would cite for you the experience or the reaction to the liberalized entry of the Rochester Telephone Company. What Rochester Telephone did was to unbundle services. They offered service sales in place, and they offered network access pricing. And they seem to be prospering with this.

There are other areas where the FCC experience does not give us much insight into this broadened perspective of regulation. For example, despite this very involved economic impact inquiry in Docket No. 20003, we still do not know very much about the social costs of liberalized entry. It is a whole area that still remains to be explored. And I mean sophisticated social costs, not diverting revenues from one company to another, but what are the net social costs to society. Also, another thing down the road is this. If we liberalize entry, we do not know very much about the behavior of these firms. It clearly is not competition. I can never swallow Paul MacAvoy's point of view that as long as you have got more than two firms, you have workable competition. That is nonsense. What you do have is IBM and AT&T coexisting in the same market. It should make a fascinating study to see how viable competition is going to be in that kind of a setting.

Also, there is a question whether the forces for perpetuating competition will continue if there is a deceleration of the rate of innovation. That is another problem for regulators insofar as the FCC experience is concerned. We also have very little insight into the question of equity. The only equity factor coming from the FCC experience is the question of burdening the basic services and this issue of revenue diversion. So there is still an enormous amount to do. It seems to me that

this is where the academic practitioner ought to be able to make a really good contribution.

I would say that the final analysis in broadening the perspective is this. Regulation must consider directly and head on the question of industry performance, the question of equity income distribution, and the question of social benefits and costs. Within those three major areas, that is performance, equity income distribution and social benefits and costs, all of the major regulatory tools should be evaluated. Revenue requirements, pricing, licensing, approval of new investment, approval of new financing and a host of all the other regulatory responsibilities, in other words, all of the regulatory tools and actions which are taken, should be viewed within this context of industry performance, equity income distribution, public benefits and cost. I would think that is the objective of the type of economists or practitioners that we have talked about here. Hopefully, with that type of person, maybe the 95th birthday of regulation can be more auspicious. Thank you. (Applause.)

MODERATOR NEWCOMB: Thank you Dr. Trebing. I think the panel today has provided some very interesting food for thought.