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CASE NO. EC-2002-1

REBUTTAL TESTIMONY

OF

DENNIS L. WEISMAN

ON

BEHALF OF

**UNION ELECTRIC COMPANY
d/b/a AmerenUE**

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1 REBUTTAL TESTIMONY

2
3 OF

4 DENNIS L. WEISMAN, Ph.D

5 CASE NO. EC-2002-1
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7

8 I. INTRODUCTION
9

10 Q. Please state your name and business address.

11 A. My name is Dennis L. Weisman. My business address is Department of
12 Economics, Waters Halls, Kansas State University, Manhattan, KS 66506-4001.

13 Q. By whom and in what capacity are you employed?

14 A. I am employed by Kansas State University as a Professor of Economics.

15 Q. Please describe your education.

16 A. I received a B.A. in economics and mathematics from the University of
17 Colorado; an M.A. in economics from the University of Colorado; and a Ph.D. in
18 economics from the University of Florida with a specialization in industrial organization
19 and regulation.

20 Q. Please describe your qualifications.

21 A. I have authored or co-authored more than 60 professional articles, books,
22 and manuscripts, including a book entitled DESIGNING INCENTIVE REGULATION FOR THE
23 TELECOMMUNICATIONS INDUSTRY, co-published by the MIT Press and the AEI Press. I
24 currently serve on the editorial boards of the *Journal of Regulatory Economics* and
25 *Information Economics and Policy*. My principal research interests are in the area of
26 strategic behavior and government regulation, with an emphasis on incentive regulation

1 issues. I have been the recipient of national and university awards for my academic
2 research and have been recognized for my contributions to college teaching. I have
3 testified in numerous regulatory proceedings to the economic and social impacts of
4 regulatory policies and have served as a consultant to telecommunications firms, electric
5 power companies, and regulatory commissions on economic pricing principles, the
6 design of incentive regulation plans, and public policy. On December 17, 2001, I
7 discussed incentive regulation issues at the Missouri Public Service Commission's
8 Electric Roundtable Discussion Group. I have attached my curriculum vita as Schedule 1
9 to this testimony.

10 **Q. What is the purpose of your testimony?**

11 A. The purpose of my rebuttal testimony is four-fold. First, I discuss the
12 evolution of incentive regulation in regulated industries, the economic benefits of
13 incentive regulation and why it represents sound regulatory policy. Second, I respond
14 directly to a number of issues raised by Staff concerning the purpose, performance and
15 objectives of the experimental alternative regulation plans (EARPs). Third, I discuss the
16 incentive properties of Union Electric's proposed Alternative Regulation Plan (Alt Reg
17 Plan) and why its adoption by this Commission will serve the public interest. Finally, I
18 develop a set of principles that I believe the Commission should consider if it decides to
19 return Union Electric to traditional, cost-of-service regulation. Before addressing these
20 issues in depth, however, I provide an overview of my conclusions in the following
21 section.

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II. SUMMARY AND OVERVIEW

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Q. Please discuss the primary purpose and principal conclusions of your testimony.

A. The primary purpose of my testimony in this proceeding is to discuss the role of incentive regulation¹ in an increasingly competitive and changing electric power industry and the benefits that incentive regulation offers over traditional, cost-of-service regulation. A key objective of my testimony is to provide the Commission with a principled, objective and comprehensive analysis of incentive regulation and its increasingly prominent role in the regulation of the electric power industry in the U.S. There has been a rapid and pervasive adoption of incentive regulation in the telecommunications industry, and the electric power industry appears to be following a similar trend. These observations notwithstanding, I do not wish to suggest that the Commission should necessarily adopt incentive regulation for the long term merely because other commissions have decided to do so. Rather, my interest is primarily one of assisting the Commission in making an informed decision on the merits as to whether incentive regulation best serves the public interest or a return to traditional, cost-of-service regulation is warranted. I hope that the Commission will accept my testimony on these important issues in the spirit in which it is offered—as someone who has studied, published and taught the economic principles of regulation and also someone with

¹ Incentive regulation can be defined as the implementation of rules that encourage a regulated firm to achieve desired goals by granting some, but not unlimited, discretion to the firm. In some sense, all types of regulation, including traditional cost-of-service regulation, constitute a form of incentive regulation. The common practice has been to limit the definition of incentive regulation to alternative forms of regulation that satisfy the above definition. These include price cap regulation, rate moratoria or rate freezes which are a form of price cap regulation and earnings sharing.

1 extensive experience in applying these principles in regulated industries. I now turn to a
2 brief summary of the principal conclusions of my testimony.

3 1) Incentives play a critical role in a market economy in allocating scarce
4 resources to their highest-valued use and in encouraging the most efficient means of
5 producing society's output. Indeed, the experience on the world stage over the last two
6 decades reveals the extreme limitations of command economies and the clear superiority
7 of market-based economies in fostering these incentives.²

8 2) Relatively recent changes in the economic regulation of public utilities
9 (electric power, natural gas, and telecommunications) mirror similar developments on the
10 world stage. It is generally recognized that the fundamental role of economic regulation
11 is to emulate a competitive market outcome if such were feasible. There is now a virtual
12 universality of thought in the economics literature that incentive regulation is superior to
13 traditional, cost-of-service regulation in emulating a competitive market outcome.

14 3) Specifically, relative to traditional, cost-of-service regulation, incentive
15 regulation provides stronger incentives for the regulated firm to (i) undertake cost-
16 reducing innovation; (ii) invest and operate efficiently; and (iii) produce with the most
17 efficient technology choice.

18 4) A key attribute of incentive regulation and one that likely explains its
19 pervasive and rapid adoption is that all key stakeholders (including consumers, the
20 regulated firm, competitors and the regulator) can be made better off in the transition
21 from traditional, cost-of-service regulation to incentive regulation. In other words,
22 incentive regulation is a "win-win" proposition. Furthermore, it is important to recognize

² See, for example, Daniel Yergin and Joseph Stanislaw, *Commanding Heights*. Simon & Schuster: New York, 1998.

1 that the adoption of incentive regulation does not signify the abandonment of economic
2 regulation, but simply the evolution from an inferior form of regulation to one that has
3 been shown to be superior.

4 5) In the course of just 15 years in the local telecommunications industry in the
5 U.S., 48 states have adopted some form of incentive regulation for the major local
6 exchange telecommunications companies. The electric power industry is following a
7 similar trend with at least 28 electric utility companies in 16 states currently operating
8 under some form of broad-based incentive regulation plan—typically with some form of
9 earnings sharing.

10 6) The experience with incentive regulation in the telecommunications industry
11 has been positive for the most part. This experience shows that relative to cost-of-service
12 regulation, incentive regulation has resulted in (i) prices that are decreasing (or at least
13 not increasing); (ii) enhanced levels of investment; (iii) higher levels of universal service;
14 (iv) higher productivity growth; and (v) financial performance for the regulated firm that
15 compares favorably with traditional, cost-of-service regulation. The experience with
16 incentive regulation in electric power, though still more limited in scope, shows strong
17 promise as well.

18 7) The trend in incentive regulation in the electric power industry has clearly
19 been in the direction of more broad-based incentive regulation plans that focus on
20 aggregate performance measures such as earnings and rate levels and away from
21 narrowly-targeted incentive regulation plans that focus on individual measures of
22 performance. This change reflects the consensus view that narrowly-targeted
23 performance benchmarks may not provide strong incentives for efficient overall

1 performance since the regulated firm has better information than the regulator concerning
2 the best means available to reduce costs and improve operating efficiency.

3 8) It is incorrect, in my view, to characterize the efficiency benefits of incentive
4 regulation as somehow suggesting that regulated utilities deliberately engaged in
5 inefficient behavior under cost-of-service regulation. This is so because competition is
6 first and foremost a discovery process in which efficient operating practices and superior
7 innovations are revealed over time. Hence, it is not necessarily the case that a utility
8 subject to cost-of-service regulation simply disavows known superior operating practices
9 and opportunities to innovate. Rather, it is that the incentives requisite to their discovery
10 are simply not present. In other words, the regulated firm cannot knowingly ignore or
11 disavow what it has yet to discover.

12 9) Union Electric's performance under the EARPs since 1995 is affirmation that
13 incentive regulation can be a "win-win" proposition for all parties. Union Electric
14 achieved solid returns through efficient investment and prudent management practices,
15 while its customers received high quality service at some of the lowest rates of any
16 metropolitan area in the country. These consumers also received sharing credits and rate
17 reductions totaling some \$425 million.

18 10) The "performance dividends" that consumers have received under the EARPs
19 are testament to the efficiency gains that Union Electric has achieved. As Dr. Lowry
20 shows, UE's annual costs today would be significantly higher had it not been for the
21 performance gains that the Company achieved under the EARPs. Consumers also
22 benefited from greater rate stability in comparison with traditional, cost-of-service

1 regulation. In addition, the EARPs have served to streamline the regulatory process with
2 a reduced number of formal regulatory proceedings before the Commission.

3 11) The Staff's rate complaint filing is notably void of any explicit consideration
4 of regulatory principles applicable to the fact that Union Electric has been operating
5 under an experimental regulation plan. In its February 2001 Report, the Commission
6 Staff failed to conduct a comprehensive, objective analysis of the performance of the
7 EARPs and their impact on key stakeholders. Moreover, this report makes no attempt to
8 examine trends in incentive regulation throughout the industry nor to assess the overall
9 performance of incentive regulation for Union Electric's customers or for consumers in
10 general. Consequently, the Commission would be ill-advised to make a decision as to the
11 merits of incentive regulation relative to traditional, cost-of-service regulation solely on
12 the basis of Staff's February, 2001 Report. My testimony along with that of Dr. Lowry is
13 designed to supplement the record accordingly.³

14 12) The Alt Reg Plan proposed by Union Electric in this proceeding builds on the
15 strong foundation of the EARPs in ensuring that incentive regulation continues to be a
16 "win-win-proposition" for all key stakeholders. The Alt Reg Plan ensures that consumers
17 realize at the outset of the plan; that consumers continue to benefit as quasi-shareholders
18 through "performance dividends" in a timely fashion; and that consumers continue to
19 enjoy some of the lowest rates for electric power among the major metropolitan areas in
20 the country. In addition, the share of earnings that consumers

³ See also, "White Paper On Incentive Regulation: Assessing Union Electric's Experimental Alternative Regulation Plan" Prepared for Ameren Corporation By the Brattle Group and Professor David E. M. Sappington, February 1, 2001. Attached to the rebuttal testimony of Mr. Warner L. Baxter.

1 receive in the sharing bands are increased relative to the last EARP to provide funding for
2 low-income assistance and economic development. Finally, the Alt Reg Plan provides
3 for continuous monitoring of service quality and infrastructure commitments.

4 13) The Commission may still decide that a return to traditional, cost-of-service
5 regulation is in the public interest. Should this be the case, it is critical that the rates the
6 Commission ultimately decides upon not be in effect an attempt to "claw-back" the
7 earnings that Union Electric realized through its superior performance over the course of
8 the EARPs. Rather, the Commission should continue to recognize the importance of
9 rewarding superior performance. This further suggests that the Commission should take
10 explicit recognition of Union Electric's superior performance in setting the allowed rate-
11 of-return going forward. A failure to do so will serve only to dampen the incentives for
12 efficient performance that sound regulatory policy should seek to encourage.

13 14) Despite the fact that the EARPs were experimental incentive regulation plans,
14 Union Electric had a reasonable expectation that superior performance under these plans
15 would have resulted in a fair and principled evaluation of the plans by Staff and, in turn,
16 the likelihood of being able to continue with some form of incentive regulation. This
17 expectation is based on the evolution of incentive regulation in both the
18 telecommunications and electric power industries and the fact that a return to cost-of-
19 service regulation, though not unprecedented, typically involves some breach of faith by
20 one of the parties.

21 15) Staff's view of incentive regulation is fundamentally flawed because it rests
22 on the false premise that incentive regulation is a zero-sum game. In fact, the available
23 evidence suggests that the solid returns that Union Electric realized under the EARPs did

1 not come at the cost of higher prices for consumers. Staff focused exclusively on the
2 rates that consumers would have paid had Union Electric been subject to cost-of-service
3 regulation and assumed that cost-of-service regulation would have resulted in Union
4 Electric achieving the same level of efficiency that it did under the EARPs. This logic is
5 fallacious and runs counter to economic principles and the experience with incentive
6 regulation.

7 16) The competitive transition now underway in the electric power industry will
8 require a different mindset on the part of regulators—one that recognizes the importance
9 of incentives in promoting efficiency and long-term investment in what is arguably the
10 most critical of infrastructure industries.

11 **Q. Please provide an overview of the remainder of your testimony.**

12 A. The primary purpose of Sections III – VI of my testimony is to address the
13 principles of economic regulation, the role of incentives in promoting efficiency, and the
14 experience with incentive regulation in the telecommunications and electric power
15 industries. The economic principles developed in these sections establish the foundation
16 necessary to rebut Staff's rate complaint and the logical inconsistencies contained therein.
17 Given that this rate complaint filing occurs at the end of the EARP, the explicit
18 observation and consideration of these principles is highly relevant to this proceeding and
19 subsequent deliberations by the Commission. I review the basic economic principles of
20 sound, economic regulation in Section III. In Section IV, I employ these principles to
21 draw comparisons between cost-of-service regulation and incentive regulation and
22 discuss why the adoption of incentive regulation is in the public interest. In Section V, I
23 summarize the evolution and performance of incentive regulation in the

1 telecommunications industry and why it is reasonable to expect comparable performance
2 from incentive regulation in the electric power industry. Section VI explores some
3 common myths surrounding incentive regulation.

4 The primary purpose of Sections VII – X of my testimony is to evaluate
5 Union Electric's performance under the EARPs, Staff and interveners' assessment, and
6 Union Electric's proposal for a new, alternative regulation plan. I review the
7 performance of the EARPs from the perspective of the benefits that can be expected from
8 a well-designed incentive regulation plan in Section VII. Section VIII responds directly
9 to the flawed evaluation of the EARP by Staff and OPC. The benefits that can be
10 expected to flow to all key stakeholders from Ameren's proposed alternative rate plan are
11 discussed in Section IX. In Section X, I discuss the principles that should govern the
12 rate design in the event the Commission decides that a return to cost-of-service regulation
13 is warranted.

14 Section XI of my testimony provides a brief summary of the main points
15 developed in the course of my testimony and concludes. Finally, as part of my testimony,
16 I have prepared an **Executive Summary** attached hereto as Appendix A.

17

III. ECONOMIC REGULATION

A. Basic Principles

Q. What is the scope of economic regulation as it is commonly practiced?

A. There is a general consensus in the economics of regulation literature that regulation should be limited to essential services that are not yet subject to the discipline of competitive market forces.⁴ Historically, industries that produce critical infrastructure type services have been the primary focus of economic regulation. These include electric power, natural gas, telecommunications and water. The economic rationale for regulation is summarized succinctly by Professor Alfred Kahn:

The importance of these industries, as measured not merely by their own sizable share in total national output, but also by their very great influence, as suppliers of essential inputs to other industries, on the size and growth of the entire economy. ... That many of them are natural "monopolies": their costs will be lower if they consist of a single supplier. ... That for one or another of many possible reasons, competition simply does not work well.⁵

Q. What are the primary objectives of economic regulation?

A. Economic regulation has a multitude of objectives which include, but are not limited to, avoidance of undue discrimination, the setting of "just and reasonable" rates, simplicity and public acceptability, revenue sufficiency, stability, fairness in apportionment of total cost, maintaining standards for reliable service through timely infrastructure investment and encouragement of efficiency. While there will be some reasonable differences of opinion concerning the relative importance of these objectives, it is generally held that regulation should pursue economic efficiency, fairness,

⁴ See Alfred E. Kahn, *The Economics of Regulation: Principles and Institutions*. New York. Vol. 1, John Wiley and Sons, 1970, pp. 11-12.

⁵ *ibid*, p. 11.

1 simplicity, continuity, universal service and the development of new products and
2 services.⁶

3 **Q. Is there a general consensus among informed observers and**
4 **practitioners that regulation should attempt to emulate a competitive market**
5 **outcome?**

6 A. Yes. There is a general consensus that a primary objective of economic
7 regulation is to emulate a competitive market standard. Professor Alfred Kahn observes
8 that "the single most widely accepted rule for the governance of the regulated industries
9 is regulate them in such a way as to produce the same results as would be produced by
10 effective competition, if it were feasible."⁷ In fact, it is significant that the Missouri
11 Supreme Court has repeatedly stated that "State regulation takes the place of and stands
12 for competition."⁸

13 **Q. What form of competition represents the appropriate benchmark for**
14 **emulation by the regulatory authority?**

15 A. It is generally recognized that atomistic or perfect competition is not the
16 appropriate benchmark for emulation by the regulatory authority because such
17 competition does not reflect the operating characteristics of a business enterprise with
18 large-scale capital investments. The following passage is instructive:

19 In this respect, perfect competition is not only impossible, but inferior, and
20 has no title to being set up as a model of ideal efficiency. It is hence a
21 mistake to base the theory of government regulation of industry on the

⁶ See, for example, David E. M. Sappington and Dennis L. Weisman, *Designing Incentive Regulation for the Telecommunications Industry*. The MIT Press: Cambridge MA., 1996a, p. 100.

⁷ Kahn, *Op Cit.*, p. 17. See, also, James C. Bonbright, *Principles of Public Utility Rates*. Columbia University Press: New York, 1961, p. 107.

⁸ *Barker*, 163 S.W. at 858; *accord Utility Consumers Council*, 585 S.W.2d at 47; *May Dep't Stores*, 107 S.W.2d at 44.

1 principle that big business should made to work as the respective industry
2 would work in perfect competition.⁹

3 The relevant model of competition is one that essentially compares the relative
4 performance of two or more similarly-situated utilities. In this context, the term
5 "similarly-situated" refers to utilities that provide service under similar conditions,
6 including population density, climatic conditions, and so on. The basic idea is to create a
7 "yardstick" by which the regulator can evaluate the relative performance of the utility
8 even though the utility may not face actual competition.¹⁰ While this is inherently a very
9 difficult undertaking and can often not be achieved with precision, the key point is that
10 the utility's performance is measured and rewarded or penalized based on a comparison
11 with other utilities that provide service under comparable conditions.¹¹ The roots of
12 these ideas trace back almost a half a century and form the essence of the modern theory
13 of incentive regulation as currently practiced.¹²

14 **B. Efficiency Measures and Tradeoffs**

15
16
17 **Q. Economists favor competition because of its efficiency properties, but**
18 **what specifically do economists mean when they use the term efficiency?**

⁹ Joseph A. Schumpeter, *Capitalism, Socialism and Democracy*. Harper and Row: New York, 1942, p. 106.

¹⁰ This assumption can be relaxed provided that the yardstick measurement controls for operating characteristics that are beyond the firm's control but nonetheless affect the firms' ability to supply service. See, for example, Andrei Schleifer, "A Theory of Yardstick Competition." *Rand Journal of Economics*, Vol. 16, No. 3, 1985, pp. 319-327.

¹¹ The common practice in regulated industries has not been to employ a "yardstick" analysis for rate levels, but rather for changes in rate levels. This practice reflects the inherent complexities associated with making comparisons across regulated firms that are not identical in all respects.

¹² See, for example, Sappington and Weisman, *Op Cit.*, 1996a, chapter 5.

1 A. For the purposes of this discussion, there are two distinct measures of
2 efficiency that should be emphasized—allocative efficiency and dynamic efficiency.¹³
3 Allocative efficiency refers specifically to the relationship between the price of the
4 service and the underlying incremental cost of the service at any given point in time.
5 Consumers make their purchasing decisions on the basis of the prices they face for goods
6 and services relative to the valuation that they place on these goods and services. When
7 prices deviate from marginal or incremental cost, there is a mismatch between the
8 valuation that society places on the good and the resource costs that society must incur in
9 producing the good. This mismatch creates allocative efficiency losses.

10 Suppose that the price of a particular good is set at 10 dollars when the
11 incremental cost of producing that good is only 4 dollars. In this case, there is an
12 opportunity to create additional value for society that is lost as result of the divergence
13 between the price of the good and its underlying cost of production. To see this, suppose
14 that there is a consumer that values the good at \$6. This consumer will not purchase the
15 good at the price of \$10 even though his valuation of the good exceeds the cost that
16 society incurs in producing it. In other words, there is an opportunity to create additional
17 value for society by reducing the price of the good in the direction of underlying
18 incremental cost and thereby render society better off. To wit, if the price were lowered
19 to \$5 for this unit of the good, the consumer would purchase the good and realize a
20 surplus of \$1 ($\$6 - \5). The loss in surplus that results when prices diverge from
21 underlying incremental cost is commonly referred to as a loss in allocative efficiency

¹³ Productive or technical efficiency is another common measure of efficiency. Technical efficiency is concerned with production at the lowest possible cost. A firm is technically efficient if it uses the minimum possible amount of inputs to produce its output.

1 precisely because society's resources are not allocated in accordance with the valuation
2 that society places on them. Hence, aligning prices more closely with underlying
3 incremental cost tends to enhance allocative efficiency.

4 Dynamic efficiency is concerned with the optimal investment over time in
5 capital formation, cost-reducing innovation and new product innovation. Dynamic
6 efficiency is particularly critical in infrastructure industries that serve as key drivers of
7 economic growth. This observation has been highlighted in recent months when a failure
8 to invest in critical infrastructure apparently contributed to a series of events that plunged
9 the state of California—the sixth largest economy in the world—into a severe energy
10 crisis.

11 **Q. Do regulatory policies have to make trade-offs between allocative and**
12 **dynamic efficiency?**

13 A. Yes. Regulatory policies implicitly make trade-offs between these
14 efficiency measures. For example, aligning prices more closely with incremental cost
15 promotes allocative efficiency but can discourage dynamic efficiency. When the
16 regulated firm's prices are immediately ratcheted downward to reflect any measured
17 reduction in its costs, the firm is given little or no incentive to invest in cost-reducing
18 innovation. Moreover, lower prices may reduce the regulated firm's expected returns on
19 investments—thereby dampening incentives to invest in new technologies and innovation
20 in a cost-effective manner. Consequently, the design of sound, effective regulation
21 frequently requires the regulator to make selective trade-offs between these efficiency
22 measures.

1 **Q. Do we observe these trade-offs between allocative and dynamic**
2 **efficiency outside of regulated industries?**

3 A. Yes. Trade-offs between allocative and dynamic efficiency are reflected
4 in the government's policies on patents and copyrights. Patents are awarded in order to
5 provide the innovator with the requisite incentives to innovate. On any given day, the
6 government could unilaterally declare all patents null and void. In the short-run, this
7 would serve to reduce the price for products and services that previously operated under
8 patent protections. However, such appropriations would greatly reduce or eliminate any
9 incentive for the innovators to invest the capital and effort that gave rise to these
10 innovations in the first place. Consequently, the incentive problem is the same whether
11 the government declares all patents null and void and thereby enables the innovation to
12 be appropriated by rival firms, or the Commission unilaterally reduces prices on the basis
13 of the firm's earnings and thereby fully appropriates the returns from the firm's
14 investment in cost-reducing innovation.

15 **Q. Are you suggesting that the Commission should not design regulatory**
16 **policy with an exclusive focus on the short-term price of electric power?**

17 A. Yes, this is precisely what I am suggesting. An inordinately low price for
18 electric power may be of secondary consideration for consumers if there is no power
19 available for purchase. The Commission's policies must seek to balance allocative and
20 dynamic efficiency in a manner that provides consumers of electric power in Missouri
21 with stable supplies of electric power at reasonable prices while providing Union Electric
22 with strong incentives to invest over the long-term. Paradoxically, regulatory policies

1 that focus disproportionately on allocative efficiency will serve only to guarantee higher
2 prices for consumers of electric power in the longer run.

3

4 **C. Determination of "Just and Reasonable" Rates**

5

6 **Q. From an economic perspective, does the legal requirement in Missouri**
7 **that "state regulation takes the place of and stands for competition" have**
8 **implications for the Commission's determination as to what constitutes "just and**
9 **reasonable" rates?**

10 **A. Yes. In competitive markets, firms succeed or fail on the merits—that is**
11 **on the basis of their relative efficiency, service reliability, prudent investments, ability to**
12 **innovate and general business acumen. While utilities may not be allowed to "fail" in the**
13 **traditional sense, this model should nonetheless serve to inform the Commission's**
14 **deliberations and define its role as a surrogate for competition. The implication then as to**
15 **what constitutes "just and reasonable" rates should, at least in part, be judged relative to a**
16 **competitive market standard. It is not simply an earnings-based determination, but a**
17 **determination based, at least in part, on an assessment of the regulated firm's relative**
18 **performance. This is explained in greater detail below.**

19 **Q. Is it your position that what constitutes "just and reasonable" rates**
20 **should, at least in part, be independent of the financial performance of the regulated**
21 **firm?**

22 **A. Yes. A relatively efficient firm may be generating strong earnings, but**
23 **still supplying service at relatively modest prices. Conversely, a relatively inefficient firm**
24 **may be generating weak earnings, but supplying service at relatively high prices. What**

1 this suggests is that, in general, no meaningful inference can be drawn regarding the "just
2 and reasonable" nature of rates simply by observing the regulated firm's earnings.

3 **Q. Are consumer interests served by a policy that determines "just and**
4 **reasonable rates" strictly on the basis of the earnings of the regulated firm?**

5 A. No. I believe an example may prove instructive in illustrating why
6 consumers are not served by such a policy. Suppose there are two firms: firm A and firm
7 B. Firm A is efficient: it has a cost of 2¢ per kilowatt hour and charges an average rate of
8 3.5¢. Firm B is inefficient: it has a cost of power 5¢ per kilowatt hour and charges an
9 average rate of 5¢. The argument that only earnings define what is "just and reasonable"
10 essentially amounts to a claim that the 3.5¢ rate for Firm A is not "just and reasonable"
11 because it realizes a margin of 1.5¢ (3.5¢ - 2¢), whereas the 5¢ rate for Firm B is "just
12 and reasonable" because it only covers costs. It is fairly clear which rate consumers
13 would consider to be the more "just and reasonable" one. The general proposition that
14 regulatory performance benchmarks should focus more on prices and less on earnings is
15 summarized succinctly in the following passage:

16 In our opinion the single most promising incentive-eliciting and distortion-
17 inhibiting device would involve greater flexibility in pricing and less
18 attention to or at least allowing a wider, perhaps capped, range of
19 profitability. Low prices and not low profits are the most important part of
20 salutary economic performance (assuming a reasonable extent, variety,
21 quality and reliability of service).¹⁴

22 Finally, it is important to recognize that this standard actually protects consumers
23 by ensuring that a relatively inefficient firm has limited recourse to the regulator for an
24 increase in rates due to deficient earnings.

¹⁴ James C. Bonbright, Albert L. Danielsen and David R. Kamerschen. *Principles of Public Utility Rates*.
Second Edition, Public Utilities Reports, Inc.: Arlington Virginia, 1988, p. 365.

1 **Q. In your example above, would allocative efficiency be enhanced by**
2 **reducing prices so that they are more closely aligned with underlying incremental**
3 **cost?**

4 A. Yes. In fact, this is precisely the type of efficiency trade-off that I alluded
5 to previously. The Commission can enhance allocative efficiency by aligning prices
6 more closely with underlying costs, but the long-run implications of such a policy is
7 measured in terms of dynamic efficiency foregone. The regulated firm has little incentive
8 to undertake cost-reducing innovation if the gains from such efficiency advances are fully
9 appropriated by the regulator and passed on to consumers in the form of lower rates.
10 Similarly, the regulated firm has diminished incentives to undertake timely or pro-active
11 investments in infrastructure if the positive gains from such investments are appropriated
12 by the regulator in the "good" state of the world; but shareholders are expected to absorb
13 all of the losses in the "bad" state of the world. In fact, a regulatory policy based on such
14 a philosophy of "heads you win, tails I lose" will undermine incentives for dynamic
15 efficiency.

16 **Q. Can you explain why reducing the regulated firm's prices at each**
17 **point in time to reflect its underlying production costs will harm consumers in the**
18 **long run?**

19 A. Yes. The regulated firm's incentive to innovate—invest wisely and
20 discover new and better ways to enhance efficiency—derives from the expectation of
21 financial reward should such efforts prove successful. The regulated firm's reward for
22 successful innovation is a positive margin—a price that exceeds underlying production
23 costs. In similar fashion, a firm in a competitive market that achieves relative efficiency

1 through superior innovation can be expected to earn *supra-normal* returns until such
2 innovations are emulated by other firms against which it competes. These *supra-normal*
3 returns constitute a reward for innovative and successful performance.¹⁵ This
4 underscores an important principle that superior performance is defined in terms of a firm
5 outperforming its rivals rather than itself. It follows that the immediate appropriation by
6 the regulator of the gains from successful performance—in an attempt to invoke the
7 perfectly competitive outcome at each point in time—will serve to destroy the regulated
8 firm's incentives for superior performance. In other words, prices may be set equal to
9 underlying production costs, but those production costs will be inordinately high because
10 the regulated firm had no incentive to seek out new and better ways to enhance
11 efficiency. Professor Joseph Schumpeter, a renowned economist and scholar on market
12 innovation and the role of government in society, makes this point in characteristically
13 lucid fashion:

14 The introduction of new methods of production and new commodities is
15 hardly conceivable with perfect—and perfectly prompt—competition from
16 the start. And this means that the bulk of what we call economic progress
17 is incompatible with it. As a matter of fact, perfect competition is and
18 always has been temporarily suspended whenever anything new is being
19 introduced—automatically or by measures devised for the purpose—even
20 in otherwise perfectly competitive conditions.¹⁶

21

¹⁵ This process is what Professor Joseph Schumpeter referred to as the "perennial gale of creative destruction"—the idea that, in a market economy, price competition is secondary to the relentless pursuit of new innovations that compete against one another in a never ending struggle for transitory market dominance. See Schumpeter Op Cit., Chapter 7.

¹⁶ Schumpeter, Op Cit. p. 105.

IV. THE ROLE OF INCENTIVES

A. Market Economies

Q. What role do incentives play in a market economy?

A. Incentives in a market economy serve to allocate scarce resources to their highest valued use; to provide incentives for cost minimization and innovation; and to encourage firms to supply those products and services that consumers demand. Professor James Bonbright, a leading authority in the field of public utility regulation, explains the role of incentives in fostering efficiency as follows:

Under unregulated competition, the price system is supposed to function in two ways with respect to the relationship between the price of the product and the cost of production. In the first place, the rate of output of any commodity will so adjust itself to the demand that the market price will tend to come into accord with production costs. But in the second place, competition will impel rival producers to strive to reduce their own production costs in order to maximize profits and even in order to survive in the struggle for markets. *This latter, dynamic effect of competition has been regarded by modern economists as far more important and far more beneficent than any tendency of "atomistic" forms of competition to bring costs and prices into close alignment at any given point of time.*¹⁷ (emphasis added.)

Q. What is the genesis of such incentives in a market economy?

A. These incentives derive from the profit motive—the pursuit of individual self-interest ultimately benefits society by providing the goods and services that consumers want at the lowest possible cost. This is the proverbial “invisible hand” of Adam Smith:

As every individual, therefore, endeavors as much as he can both to employ his capital in the support of domestic industry, and so to direct that industry that its produce may be of the greatest value; every individual necessarily labours to render the annual revenue of the society as great as

¹⁷ Bonbright Op Cit, p. 53.

1 he can. He generally, indeed, neither intends to promote the public
2 interest, nor knows how much he is promoting it. ... he intends only his
3 own security; and by directing that industry in such a manner as its
4 produce may be of the greatest value, he intends only his own gain, and he
5 is in this, as in many other cases, led by an invisible hand to promote an
6 end which was no part of his intention. ... By pursuing his own interest he
7 frequently promotes that of the society more effectually than when he
8 really intends to promote it.¹⁸

9
10 Moreover, recent events confirm that market economies and the use of incentives
11 are superior to command economies and government mandates for producing the
12 goods and service that consumers want at the lowest possible cost and to foster
13 innovation. In evaluating the fundamental flaws in the Soviet economic system,
14 Yergin and Stanislaw observe that:

15 Already by the early 1970s, a fatal weakness was becoming clear in the
16 system: It could not, for the most part, innovate. There was no reward, no
17 reason to do anything new. In fact, there was a strong predisposition to
18 avoid change of any kind, for change caused enormous bureaucratic
19 headaches. The best thing was to keep doing what had been done before.
20 In more advanced economies, innovation was essential to the promotion of
21 economic growth. But in the Soviet system innovation was characterized
22 mainly by its absence. And that applied to everything—whether it was
23 small changes to make processes work better or the introduction of new
24 products.¹⁹

25 26 27 **B. Regulatory Regimes**

28
29 **Q. Please define incentive regulation?**

30 **A.** Incentive regulation can be defined as the implementation of rules that
31 encourage a regulated firm to achieve desired goals by granting some, but not unlimited,
32 discretion to the firm. In some sense, all types of regulation, including traditional, cost-

¹⁸ Adam Smith, *The Wealth of Nations*. The Modern Library: New York, 1937 (originally published in 1776), p. 423.

¹⁹ Yergin and Stanislaw, *Op Cit.*, p. 273.

1 of-service regulation, can reflect different degrees of incentive regulation. The practice
2 in the literature, however, has been to limit the definition of incentive regulation to
3 alternative forms of regulation that satisfy the above definition. These include
4 predominantly price cap regulation, rate moratoria or rate freezes (which are also a
5 simple form of price cap regulation), and earnings sharing regulation.

6 **Q. As an example, please describe the key differences between**
7 **traditional, cost-of-service regulation and incentive regulation broadly defined.**

8 A. Traditional, cost-of-service regulation places a ceiling on the earnings of
9 the regulated firm. When the actual earnings of the regulated are above (respectively,
10 below) this ceiling level, a rate case is triggered and rates are adjusted accordingly. In
11 contrast, under most incentive regulation plans, there is less focus on earnings and more
12 focus on rate levels. For example, under pure price cap regulation,²⁰ the firm is
13 constrained to maintain average prices at or below a stipulated ceiling level,²¹ but there is
14 no constraint on earnings levels, at least for the length of the price cap plan.²² The
15 following passage is instructive:

16 As a rough characterization, under rate-of-return regulation reviews are
17 frequent, and the regulatory lag is endogenous because either side can

²⁰ Pure price cap regulation means that there is no *ex post* sharing of earnings with consumers. Except where otherwise noted, the terms price cap regulation and pure price cap regulation will be used interchangeably.

²¹ The price cap ceiling or index is adjusted over time for inflation (I) and an offset, commonly referred to as the X factor. The X factor is the (minimum) rate at which prices for regulated services must fall on an annual basis after adjusting for inflation. This dynamic adjustment process explains why price cap regulation is sometimes referred to as [I - X] regulation. The X factor is designed in part to reflect the degree to which productivity growth and input price changes in the industry diverge from those realized in the general economy. See Jeffrey I. Bernstein and David E. M. Sappington, "Setting the X Factor in Price Cap Regulation Plans", *Journal of Regulatory Economics*, 16, 1999, pp. 5-25. Notably, the process of setting the X factor is based on a type of benchmarking analysis that ensures, to the greatest extent possible, that the X factor for the regulated firm is independent of the firm's own performance.

²² Price cap regulation is commonly referred to as a high-powered regulatory regime because the regulated firm is responsible for a large share of its actual costs. In contrast, cost-of-service regulation is a low-powered regulatory regime because the firm is typically able to affect a high degree of pass through of cost changes in the form of rate changes.

1 request a review, whereas under price caps the lag is relatively long, and
2 the date of the next review is fixed in advance. The difference is one of
3 degree rather than kind.²³

4 Earnings sharing regulation represents a hybrid of price cap regulation and
5 traditional, cost-of-service regulation because it combines elements of both forms of
6 regulation.

7 **Q. What benefits can be expected from the substitution of incentive**
8 **regulation for traditional, cost-of-service regulation?**

9 A. Incentive regulation allows for the possibility that all primary stakeholders
10 (including consumers, the regulated firm, the regulator and competitors) can be made
11 better off.²⁴ Consumers typically enjoy greater price stability over time compared to that
12 experienced historically under traditional, cost-of-service regulation. The regulated firm
13 bears greater risk under incentive regulation in exchange for the prospect of greater
14 reward. It is also typically granted additional pricing flexibility and streamlined
15 regulation that enables it to compete more effectively in increasingly competitive
16 markets. The regulator benefits not only from more streamlined regulation, but from no
17 longer being required to micromanage the regulated firm's operations. In addition, the
18 regulator often extracts "entry fees" or concessions from the regulated firm which are
19 often structured to provide yet additional benefits to consumers.

20 **Q. Is incentive regulation generally superior to strict cost-of-service**
21 **regulation in terms of fostering incentives for efficiency?**

²³ Mark Armstrong, Simon Cowan and John Vickers, *Regulatory Reform*. The MIT Press: Cambridge, MA 1994, p. 172.

²⁴ For example, see Dale E. Lehman and Dennis L. Weisman, "The Political Economy of Price Cap Regulation." *Review of Industrial Organization*, Vol. 16, June 2000, pp. 343-356.

1 A. Yes. The economics literature has recognized that incentive regulation is
2 generally superior to strict cost-of-service regulation in that it puts in place economic
3 incentives that more closely emulate those of a competitive market. These superior
4 incentives manifest themselves across a broad spectrum of performance dimensions,
5 including (i) use of least-cost technologies; (ii) efficient levels of cost-reducing
6 innovation;²⁵ (iii) incentives to invest and operate efficiently;²⁶ and (iv) efficient
7 diversification into new markets. In general , incentive regulation is typically also
8 superior to traditional, cost-of-service regulation as commonly practiced.

9 **Q. You have suggested that incentive regulation is “typically superior to**
10 **traditional, cost-of-service regulation.” Does this suggest that under certain**
11 **conditions traditional, cost-of-service can also provide strong incentives for**
12 **efficiency?**

13 A. Yes. It has long been recognized that a relatively long regulatory lag
14 under traditional, cost-of-service regulation can enhance incentives for efficiency because
15 it provides the regulated firm with a longer time horizon over which to enjoy the fruits of
16 its efforts.²⁷ In other words, the benefits of the firm’s cost-reducing innovation are not
17 immediately appropriated by the regulator and passed on to consumers in the form of
18 lower rates.

²⁵ This presumes that the X factor is not set at artificially high levels. Should the price cap constraint be too stringent, the regulated firm may have no incentive to invest in cost-reducing innovation. See Luis M.B. Cabral and Michael H. Riordan, “Incentives For Cost Reduction Under Price Cap Regulation.” *Journal of Regulatory Economics*, Vol. 1, 1989, pp. 93-102.

²⁶ For example, incentive regulation reduces the firm’s incentive to engage in abuse—or resources consumed by the regulated firm for which the realized costs exceed the benefits. In other words, abuse refers to expenditures on resources that the regulated firm would not undertake if it had to bear their full cost. See Glenn Blackmon, *Incentive Regulation and the Regulation of Incentives*. Kluwer Academic Publishers: Boston, MA, 1994.

²⁷ Bonbright Op Cit., pp. 53 and 262.

1 **Q. What is the source of the superior incentives for efficiency under**
2 **incentive regulation?**

3 A. These superior incentives for efficiency derive from the fact that incentive
4 regulation—given the greater emphasis on price rather than earnings—operates more like
5 a *fixed-price contract* in the sense that the regulated firm is limited in its ability to pass
6 cost increases on to consumers in the form of higher rates. This provides the regulated
7 firm with stronger incentives for increased performance and efficient cost management.
8 It therefore follows that consumers bear less risk under incentive regulation because the
9 prices they pay do not vary directly with the regulated firm's actual costs. In contrast,
10 traditional, cost-of-service regulation operates more like a *cost-plus contract* in that the
11 firm is able to pass on cost increases to consumers in the form of higher rates. This
12 provides the regulated firm with weaker incentives for efficient cost management. It
13 therefore follows that consumers bear greater risk under traditional, cost-of-service
14 regulation because the prices they pay tend to vary directly with the regulated firm's
15 actual costs.

16 **Q. Does the regulated firm's superior information regarding the nature**
17 **of cost and demand further support incentive regulation over traditional, cost of**
18 **service regulation?**

19 A. Yes. An important property of incentive regulation is that the regulator
20 may no longer be required to second guess the firm's operating practices or micromanage
21 its investment decisions. This is a difficult task for the regulator because it is generally
22 recognized that the firm has superior information regarding its business operations
23 including opportunities for reducing costs. If there were no informational asymmetry, the

1 regulator could simply dictate precisely what action should be pursued in each and every
2 circumstance, and there would be no need for incentive regulation. Under incentive
3 regulation, the regulated firm's prices are not strictly tied to its actual costs of providing
4 service. The superior incentive properties of incentive regulation derive in large measure
5 from breaking this direct linkage between the firm's own costs and its prices.²⁸ In other
6 words, because the regulated firm retains a larger share of its efficiency improvements, it
7 has stronger incentives to strive for maximum efficiency. As a result, the regulator can
8 be assured that the regulated firm will enlist its informational advantage to discover new
9 and innovative ways to improve performance.

10 **Q. Does the regulator's behavior influence the benefits that can be**
11 **expected from incentive regulation?**

12 A. Yes. Incentive regulation typically provides stronger incentives for
13 economic efficiency relative to traditional, cost-of-service regulation only if the firm
14 believes that the regulator's commitment to the basic tenets of the incentive regulation
15 regime is a credible one.²⁹ In other words, the firm must have confidence that the
16 regulator will honor the terms of the incentive regulation plan and not immediately
17 appropriate its efficiency gains and pass them on to consumers in the form of lower rates.
18 Professor David Sappington, currently the Chief Economist at the FCC, underscores the
19 importance of a strong regulatory commitment for the performance of incentive
20 regulation:

²⁸ It follows that because incentive regulation breaks the link between allowed earnings and costs, it must also break the link between higher than normal profits and rates that are not "just and reasonable."

²⁹ See Sappington and Weisman, Op Cit., 1996a, Chapter 7.

1 Absent credible rewards for superior performance and/or credible
2 penalties for poor performance, the regulated firm will have little incentive
3 to incur the effort costs that increase the likelihood of good performance.³⁰

4 **Q. Please elaborate as to why a strong regulatory commitment is critical**
5 **to the performance of incentive regulation.**

6 A. A strong regulatory commitment is critical to the superior performance of
7 incentive regulation. The regulated firm has limited incentives to seek out opportunities
8 to improve efficiency if it believes the regulator will simply usurp any realized cost
9 savings and pass them on to consumers in the form of lower rates. It follows that if the
10 firm is uncertain as to whether regulatory commitments will be honored, there may be
11 little difference between incentive regulation and traditional, cost-of-service regulation in
12 practice. In other words, an imperfect regulatory commitment will weaken the superior
13 performance of incentive regulation.

14 **Q. Is incentive regulation generally superior to traditional, cost-of-**
15 **service regulation for firms in a rapidly changing industry?**

16 A. Yes. The formal rate-cases that go hand-in-hand with traditional, cost-of-
17 service regulation are fundamentally incompatible with a rapidly changing marketplace.
18 These rate cases consume an enormous amount of time and resources and this can be
19 particularly problematic when such a diversion of resources to the regulatory process
20 comes at the expense of attending to an increasingly complex and demanding
21 marketplace. Furthermore, the volatility in the regulated firm's earnings that may attend
22 major upheavals in the industry could result in a series of virtually continuous rate cases.

³⁰ David E. M. Sappington, "Designing Incentive Regulation." *Review of Industrial Organization*, Vol. 9, 1994, pp. 262-263.

1 For these reasons, incentive regulation is better-suited than cost-of-service regulation for
2 an industry undergoing rapid change.

3 **Q. Is incentive regulation generally superior to traditional, cost-of-**
4 **service regulation for an industry in competitive transition?**

5 A. Yes. Incentive regulation is likewise superior to traditional, cost-of-
6 service regulation in facilitating the transition from a monopoly to competitive
7 marketplace. Not only does it provide the regulated firm with the pricing flexibility
8 necessary to compete against new market entrants, but it also reduces incentives for cost
9 misreporting. In addition, unlike traditional, cost-of-service regulation, incentive
10 regulation provides little if any protection for the regulated firm against the financial
11 losses that may accompany increased competition. This explains why competitors of
12 incumbent, regulated firms tend also to favor incentive regulation over traditional, cost-
13 of-service regulation.

14 **Q. Is incentive regulation generally superior to cost-of-service regulation**
15 **even when the industry is relatively stable and not in competitive transition?**

16 A. Yes. Incentive regulation is generally regarded as a superior regime for
17 regulating the monopoly services of a public utility independent of whether the industry
18 in which the utility operates is undergoing major changes or a competitive transition.
19 This is true because incentive regulation is superior to cost-of-service regulation in
20 motivating the regulated firm to behave "as if" it operated under competitive conditions.

C. Earnings Sharing

1
2

3 **Q. Does earnings sharing regulation contain elements of both price and**
4 **earnings regulation?**

5 A. Yes. Earnings sharing is most accurately characterized as a hybrid of
6 price and earnings regulation because it contains elements of both. In practice,
7 agreement is reached between the parties on a set of going-in rates for the new regulatory
8 regime along with a mechanism that determines the movement of average real prices over
9 time (*i.e.*, the X factor). This constitutes the price regulation component. Realized
10 earnings levels that rise above (respectively, fall below) pre-determined benchmarks
11 would trigger earnings sharing. This constitutes the earnings regulation component.

12 **Q. Are there different forms of earnings sharing in practice?**

13 A. Yes.

14 **Q. Could you describe the most common form of earnings sharing?**

15 A. Yes. The most common form of earnings sharing in regulatory regimes is
16 one in which the degree of sharing varies directly with the financial returns of the
17 regulated firm.³¹ Under this form of regulation, the regulator will typically set a target
18 rate of return (*e.g.*, 12%) and a deadband around this target (*e.g.*, $\pm 2\%$). Should the
19 actual returns of the firm fall within this deadband—returns between 10% and 14%—the
20 firm retains 100% of its earnings and no action is taken on the part of the regulator.
21 However, earnings sharing will be triggered if returns fall outside of this range. The
22 terms of the earnings sharing plan may call for returns between 14% and 16% to be

³¹ Earnings sharing is sometimes referred to as sliding-scale regulation. See Ronald Braeutigam and John C. Panzar, "Effects of the Change from Rate-of-Return to Price Cap Regulation." *American Economic Review Papers and Proceedings*, Vol. 83, No.2, May 1993, pp. 191-198.

1 shared 50/50 with consumers and similarly for returns between 8% and 10%. Hence, if
2 the firm's gross return is 16%, its net return would be 15% ($14\% + 0.5(16\% - 14\%)$).
3 Similarly, if the firm's gross return is 8%, its net return would be 9% ($8\% + 0.5(10\% -$
4 $8\%)$). The terms of the earnings sharing plan may also stipulate that returns above a
5 certain upper bound are returned in their entirety to consumers. Symmetrically, the
6 earnings sharing plan may place an absolute floor on the returns of the regulated firm
7 should actual returns fall below a pre-specified level.^{32, 33}

8 **Q. Are there other, less explicit, types of earnings sharing in practice?**

9 A. Yes. An X factor that is revised on the basis of the historical, financial
10 performance of the regulated firm, rather than the industry, represents a less explicit form
11 of earnings sharing. For example, the X factor may be ratcheted upward (respectively,
12 downward) if the regulator perceives that the regulated firm's earnings are too high
13 (respectively, too low). Because such revisions to the X factor are not independent of the
14 regulated firm's actual performance—the performance benchmark varies with the
15 regulated firm's performance—the incentives for cost-reduction under this form of *ex*
16 *post* sharing are weaker relative to pure price cap regulation.

17 **Q. You have characterized earnings sharing as a hybrid of cost-of**
18 **regulation and price regulation. Does it follow that the efficiency properties of**

³² A special case of earnings sharing is that of banded cost-of service regulation. With this form of regulation, the regulated firm's earnings never fall below a stipulated floor and never rise above a stipulated ceiling. The regulated firm retains the entirety of its earnings should the gross return fall within the deadband.

³³ Earnings are not necessarily shared equally under all earnings-sharing plans, nor are earnings-sharing plans always symmetric around the target earnings level. In addition, the "earnings tax" does not always increase with the level of the regulated firm's earnings. See Sappington and Weisman, *Op Cit.*, 1996a, pp. 142-143; and Blackmon *Op. Cit.*, Chapter 4.

1 **earnings sharing regulation are superior to those of traditional, cost-of-service**
2 **regulation, but inferior to those of pure price cap regulation?**

3 A. Yes in theory, but not necessarily in practice. A regulatory regime is only
4 as strong as the regulator's commitment to the underlying tenets of that regime. Pure
5 price cap regulation places no bounds on the earnings of the regulated firm, and enforces
6 no earnings sharing. While this form of regulation provides ideal incentives for cost
7 reduction, it can leave substantial scope for "recontracting."³⁴ Explicit profit sharing with
8 reasonable bounds on earnings can limit the pressures that ultimately will come to bear
9 on the regulator to reduce the firm's earnings (and may thereby circumvent even less
10 efficient means of dissipating high earnings). For example, consumer groups may view
11 high earnings as patently unfair and therefore see some equity in an earnings-sharing plan
12 that enables consumers to benefit when the regulated firm enjoys prosperous times. As I
13 have explained previously,

14 An important attribute of earnings sharing regulation is that it fosters a
15 coincidence of financial fortunes for the regulated firm and its customers.
16 Customers benefit financially under earnings sharing plans precisely when
17 the regulated firm does. Consequently, earnings sharing plans help make
18 clear the fact that all parties can benefit simultaneously under incentive
19 regulation. Recognition of this fact can help generate support for incentive
20 regulation, and thereby promote its longevity.³⁵

21 In other words, the dollars that may be shared with consumers under
22 earnings sharing regulation represent a "performance dividend."

³⁴ See David E. M. and Dennis L. Weisman, "Designing Superior Incentive Regulation: Modifying Plans to Preclude Recontracting and Promote Performance." *Public Utilities Fortnightly*, Vol. 132(5), March 1, 1994, pp. 27-32; and "Designing Superior Incentive Regulation: Accounting for All of the Incentives All of the Time." *Public Utilities Fortnightly*, Vol. 132(4), February 15, 1994, pp. 12-15.

³⁵ David E. M. Sappington and Dennis L. Weisman, "Seven Myths About Incentive Regulation," In *Pricing and Regulatory Innovations Under Increasing Competition and Other Essays*, ed. by Michael A. Crew, Boston: Kluwer Academic Publishers, 1996b, p. 14.

1 **Q. Does the economics literature indicate that earnings sharing can be**
2 **superior to price cap regulation in terms of economic welfare?**

3 A. Yes. The trade-off is once again between allocative efficiency and
4 dynamic efficiency. Earnings sharing improves allocative efficiency by aligning prices
5 more closely with underlying production costs. Conversely, earnings sharing hampers
6 dynamic efficiency because the regulated firm's incentives to undertake cost-reducing
7 effort are weakened when a share of the gains from such effort are appropriated and
8 passed on to consumers in the form of lower rates. The economic research that has been
9 conducted to date suggests that the allocative efficiency gains from earnings sharing
10 dominate the dynamic efficiency losses.^{36, 37} In other words, from an applied economic
11 welfare perspective, earnings sharing can be superior to pure price cap regulation.

12 **Q. Is there the potential for opportunistic behavior on the part of the**
13 **regulator, its staff and intervenors under earnings sharing regulation?**

14 A. Yes. Earnings sharing can provide a regulator, its staff and intervenors
15 with a strong incentive to second-guess the operating practices of the regulated firm. For
16 example, specific investments or operating practices may be questioned and costs may be
17 disallowed if the regulator views them as inefficient and therefore unable to be recovered

³⁶ See Thomas Lyon, "A Model of Sliding Scale Regulation." *Journal of Regulatory Economics*, 9(3), May 1996, pp. 227-247; and Richard Schmalensee, "Good Regulatory Regimes." *Rand Journal of Economics*, 20(3), Autumn, 1989, pp. 417-436. The firm may also prefer earnings sharing regulation to price cap regulation because it may provide the regulator with diminished incentives to adopt excessively liberal competitive entry policies. See, for example, Lehman and Weisman, Op Cit.

³⁷ It should be noted, however, that the weaker incentive properties for cost-reducing innovation imply that the applicable X factor should be lower under earnings sharing regulation than under pure price cap regulation, *ceteris paribus*. In fact, policymakers have recognized this trade-off in the design of incentive regulation for the telecommunications industry. See, for example, Sappington and Weisman, Op Cit., 1996a, pp. 162-165.

1 in a competitive marketplace. This scrutiny may derive from a legitimate concern on the
2 part of the regulator that the regulated firm has not exercised sound management
3 practices. On the other hand, such scrutiny may derive from an illicit attempt to disallow
4 costs solely for purposes of artificially raising the measured rate of return for the
5 regulated firm. This can serve to trigger earnings sharing at an actual rate of rate of
6 return lower than the measured rate of return, or increase the amount of earnings sharing.
7 The threat of this type of opportunistic behavior can further dampen the regulated firm's
8 incentives for cost-reducing innovation under earnings sharing.

9 **Q. Relative to traditional, cost-of-service regulation, can incentive**
10 **regulation give rise to adverse incentives that may result in the deterioration of**
11 **selected performance measures?**

12 **A.** Yes. There is a theoretical possibility that incentive regulation will
13 provide the regulated firm with an incentive to cut back on service quality. This
14 incentive derives from the fact that the regulated firm under incentive regulation is
15 responsible for a greater share of its actual costs in comparison with traditional, cost-of-
16 service regulation. Hence, it is limited in its ability under incentive regulation to pass
17 along to consumers costs associated with quality provisioning in the form of higher rates.
18 This observation notwithstanding, there is no systematic evidence that the adoption of
19 incentive regulation is causally responsible for reduced levels of service quality.³⁸

20 **Q. By way of summary, are there specific conditions under which the**
21 **adoption of incentive regulation can be expected to deliver significant benefits?**

³⁸ In fact, as discussed in Section VII below, there is no evidence to suggest that Union Electric's service quality decreased over the course of the EARPs.

1 A. Yes. In general, incentive regulation is considered to be superior to
2 traditional, cost-of-service regulation for fostering incentives for efficiency and
3 motivating the regulated firm to behave as if it faced actual competition. The gains from
4 the adoption of incentive regulation can be expected to be particularly pronounced in an
5 environment characterized by (i) asymmetric information about cost and demand; (ii)
6 markets in competitive transition; (iii) costs that vary markedly with the cost-reducing
7 effort of the regulated firm; (iv) rapid changes in the industry that provide unique
8 opportunities to innovate and improve performance and (v) a strong commitment on the
9 part of the regulator to the terms and conditions of the incentive regulation plan.

1 **V. THE EXPERIENCE WITH INCENTIVE REGULATION**
2

3 **A. Telecommunications**
4

5 **Q. Has there been a pervasive adoption of incentive regulation in the**
6 **telecommunications industry?**

7 A. Yes. There has been a pervasive adoption of incentive regulation in the
8 telecommunications industry over the last two decades, not only in North America, but
9 throughout the world. In the course of just over 15 years, at least 48 states in the United
10 States have changed the method of regulating dominant local exchange telephone
11 companies from traditional, cost-of-service regulation to some form of incentive
12 regulation (price caps, rate moratoria or earnings sharing). Similar changes in regulatory
13 regime have occurred in Australia, Europe and South America. Moreover, the trend in
14 the U.S. has clearly been in the direction of pure price cap regulation—price cap
15 regulation without earnings sharing. In 1995, dominant local exchange carriers in the
16 U.S. were subject to some form of earnings-based regulation (cost-of-service regulation
17 or earnings sharing regulation) in 35 states and price cap regulation in 9 states. In 2000,
18 the corresponding values were 8 and 39, respectively.^{39, 40}

19 **Q. Have state regulators tended to move directly from cost-of-service**
20 **regulation to pure price cap regulation in the telecommunications industry?**

³⁹ See David E. M. Sappington, "Price Regulation and Incentives" in Martin Cave, Sumit Majumdar, and Ingo Vogelsang, eds. *Handbook of Telecommunications Economics*. North-Holland: Amsterdam, 2002 forthcoming, Table 2.

⁴⁰ See, also, Jaison R. Abel and Michael E. Clements, "A Time Series And Cross-Sectional Classification Of State Regulatory Policy Adopted For Local Exchange Carriers: Divestiture to Present (1984-1998)." NRRI 98-25. The National Regulatory Research Institute, December 1998.

1 A. No. The initial step away from traditional, cost-of-service regulation was
2 typically the adoption of some form of rate moratorium or earnings sharing regulation.
3 These initial plans were experimental in nature and were of relatively short duration,
4 normally 2 or 3 years. As regulators gained more experience and comfort with the
5 performance of incentive regulation, they tended to move toward more pure forms of
6 price cap regulation and simultaneously increased the length of time between reviews.
7 The average duration of state price cap plans in the telecommunications industry today
8 now exceeds 5 years. More recently, some regulators in the telecommunications industry
9 have been moving away from explicit X factors in favor of simply freezing rates at
10 current levels (*i.e.*, an effective X factor equal to the rate of inflation).

11 **Q. Has incentive regulation in the telecommunications industry generally**
12 **lived up to it theoretical promise?**

13 A. Yes, for the most part. Some of the early incentive regulation plans in the
14 telecommunications industry differed only marginally from traditional, cost-of-service
15 regulation, so dramatic changes were not expected. One of the first survey articles that
16 examined the performance of these early incentive regulation plans concluded that
17 incentive regulation was generally associated with prices that either decreased or
18 remained unchanged relative to cost-of-service regulation and that productivity, universal
19 service, and profit levels all increased or remained at historic levels.⁴¹ In addition, the
20 survey found some evidence that incentive regulation promotes infrastructure
21 development, and is generally not associated with systematic degradation of service
22 quality.

1 **Q. Does the more recent research confirm such performance**
2 **improvements from the adoption of incentive regulation?**

3 A. Yes. There is, for example, robust empirical evidence that incentive
4 regulation promotes greater investment in infrastructure.⁴² Notably, these results indicate
5 that both earnings sharing regulation and price cap regulation are associated with higher
6 levels of investment in telecommunications infrastructure. Telephone service prices
7 under incentive regulation are generally decreasing or at least non-increasing relative to
8 cost-of-service regulation.⁴³ In addition, there is some evidence to suggest that incentive
9 regulation has triggered cost reductions.⁴⁴ Certainly, there is no credible empirical
10 evidence to suggest that costs have increased under incentive regulation.

11 **Q. Has the issue of the relationship between the adoption of incentive**
12 **regulation in telecommunications and service quality been examined in the**
13 **economics literature?**

14 A. Yes. Two recent econometric studies have examined the relationship
15 between various forms of economic regulation and the level of telephone service

⁴¹ See Donald J. Kridel, David E. M. Sappington and Dennis L. Weisman, "The Effects of Incentive Regulation in the Telecommunications Industry: A Survey." *Journal of Regulatory Economics*, May 1996, 9(3), pp. 269-306.

⁴² See Chunrong Ai and David Sappington, "The Impact of State Incentive Regulation on the U.S. Telecommunications Industry." *Journal of Regulatory Economics*, forthcoming.

⁴³ See Kridel, Sappington and Weisman, Op Cit.; and Jaison R. Abel, "The Performance Of The State Telecommunications Industry Under Price-Cap Regulation: An Assessment Of The Empirical Evidence. NRRI 00-14. The National Regulatory Research Institute, September 2000.

⁴⁴ See Marcelo Resende, "Regulatory Regimes and Efficiency In U.S. Local Telephony. *Oxford Economic Papers*, Vol. 52, 2000, pp. 447-470; and Majumdar, Sumit K. "Incentive Regulation and Productive Efficiency in the U.S. Telecommunications Industry." *Journal of Business*, Vol. 70, No. 4, 1997, pp. 547-576.

1 quality.⁴⁵ Neither study finds that there is a systematic relationship between quality
2 degradation and the adoption of incentive regulation. To the contrary, the evidence
3 seems to suggest that the adoption of incentive regulation has had little or no effect on
4 telephone service quality in the aggregate as some individual service quality measures
5 increased while others decreased.

6 **Q. Are there general conclusions that can be drawn regarding the**
7 **performance of incentive regulation in the telecommunications industry?**

8 A. Yes. A recent survey by Dr. Jaison Abel, an economist with the National
9 Regulatory Research Institute, provides a useful summary of the performance of
10 incentive regulation in the telecommunications industry:

11 The empirical research put forth to date suggests that the United States
12 telecommunications industry has responded, for the most part, favorably
13 to the incentives created through price-cap regulation. ... Under price-cap
14 regulation, telephone prices have either fallen or remained the same,
15 productivity has generally increased, modern infrastructure has been
16 deployed at a more rapid pace, and firms have performed at least as well
17 financially relative to the other methods of regulation available. The
18 results for service quality are best characterized as mixed; ... In addition,
19 the evidence so far suggests that the response has been more pronounced
20 under pure price-cap regulation compared to hybrid plans having an
21 earnings sharing component. This result is particularly true along the
22 productivity and network modernization dimensions. Therefore, the
23 existing evidence suggests that it is likely that the introduction of price-
24 cap regulation in the United States telecommunications industry has
25 produced benefits to consumers, producers, and regulators alike.⁴⁶

26 Dr. Abel's assessment of the performance of incentive regulation in the
27 telecommunications industry underscores the fact that all parties can be made better off

⁴⁵ Chunrong Ai and David Sappington, "The Impact of State Incentive Regulation on the U.S. Telecommunications Industry." University of Florida Discussion Paper, December 1998; and Aniruddha Banerjee and Kalyan Dasgupta, "Does Incentive Regulation Cause Degradation Of Retail Service Quality?" *National Economic Research Associates*, 2001 (Preliminary).

⁴⁶ Abel, Op Cit., pp. 66-68.

1 with the adoption of incentive regulation. In other words, the adoption of incentive
2 regulation in the telecommunications industry has proven to be a “win-win” proposition.

3

4

B. Electric Power

5

6 **Q. How pervasive is incentive regulation in the electric power industry?**

7 A. At least 28 electric utility companies in 16 states operated under some
8 form of broad-based incentive regulation plan in 2000-2001.⁴⁷ Of the 28 electric utilities
9 operating under incentive regulation, 13 operate under some form of rate moratorium and
10 14 operate under price caps. 21 of the 28 incentive regulation plans contain earnings
11 sharing provisions or simple dead bands. Moreover, it is noteworthy that there has been
12 a pronounced increase in the adoption of incentive regulation in electric power in more
13 recent years—likely reflecting the generally positive experience with incentive
14 regulation.

15 **Q. How does the performance of incentive regulation in electric power**
16 **compare with that of telecommunications?**

17 A. The experience with incentive regulation in the electric power industry is
18 more limited than that in telecommunications. Consequently, the economics literature
19 has not yet produced the same breadth of statistical analyses for electric power that have
20 been produced for telecommunications. Nonetheless, it is possible to discern some
21 general trends that may be useful in informing the Commission’s deliberations.

⁴⁷ D. E. M. Sappington, J. P. Pfeifenberger, P. Hanser and G.N. Basheda, “Status and Trends of Performance-Based Regulation In The U.S. Electric Utility Industry. *The Electricity Journal*, October 2001, pp. 71-79.

1 **Q. What has been the general experience with incentive regulation in**
2 **electric power among those regulatory commissions that have experimented with it?**

3 A. Regulatory commissions that have some experience with incentive
4 regulation mechanisms are generally favorably disposed toward it. The Federal Energy
5 Regulatory Commission (FERC), for example, has been supportive of the use of PBR
6 (performance-based ratemaking) for more than a decade—first for oil pipelines and more
7 recently for the regulation of transmission services.^{48, 49} Similarly, state commissions
8 with incentive regulation experience have generally endorsed it and praised its
9 advantages over traditional, cost-of-service regulation. For example, the Maine Public
10 Utility Commission recognized that a multi-year incentive regulation plan offered the
11 following benefits:

12 risks can be shifted to shareholders and away from ratepayers (in a way
13 that is manageable from the utility's financial perspective); and because
14 exceptional cost management can lead to enhanced profitability for
15 shareholders, stronger incentives for cost-minimization are created.
16

17 In its order approving an alternative regulation plan for MidAmerican Energy
18 Company, the Iowa Utilities Board recognized that all parties can benefit from incentive
19 regulation:

20 There are substantial benefits to a five-year settlement. First, a predictable
21 revenue stream for MidAmerican will facilitate investment in revenue
22 producing assets, such as new generation. MidAmerican is assured that
23 any increased revenues from those assets will not be reflected in rates for
24 at least the term of the settlement. Second, customers have price surety
25 for five years, absent any rate design changes. Third, rate stability
26 encourages the efficient operation of revenue producing assets. If

⁴⁸ Federal Energy Regulatory Commission (FERC) 1999. "Regional Transmission Organizations Order No. 2000." December 20. ("Order 2000").

⁴⁹ See also the related discussion in "White Paper On Incentive Regulation: Assessing Union Electric's Experimental Alternative Regulation Plan" Prepared for Ameren Corporation By the Brattle Group and Professor David E. M. Sappington, February 1, 2001, pp. 26-27. [Attached to the rebuttal testimony of Mr. Warner L. Baxter.]

1 MidAmerican effectively maintains its generating and transmission assets
2 and appropriately administers wholesale sales, both MidAmerican and its
3 customers will benefit through the revenue sharing mechanism.⁵⁰
4

5 The Alabama Public Service Commission (APSC) first approved Alabama
6 Power's Rate Stabilization and Equalization (RSE) plan back in 1982. The Commission
7 endorsed the plan at that time as a:

8 significantly improved method of setting utility rates sufficient to provide
9 the Company with stable and adequate returns, to provide the public with
10 the lowest possible rates consistent with the cost of service, to ameliorate
11 the impact of increases required, and to decrease rates promptly if the
12 designated rates of return are exceeded.⁵¹

13 When reviewing Alabama Power's RSE for the second time in 1990, the APSC
14 concluded that:

15 [much] of the Company's success has come as a result of the stability
16 provided by RSE. The Company has utilized that stability to focus on the
17 implementation of cost control and efficiency measures which will allow
18 the Company to perform well in the future.⁵²
19

20 The Alabama Commission continues to regulate Alabama Power under a form of
21 incentive regulation—two decades after first moving away from traditional, cost-of-
22 service regulation.⁵³

23 **Q. Has the trend in electric power been toward more broad-based**
24 **performance benchmarks and away from more targeted performance benchmarks?**

25 **A.** Yes. The trend in more recent incentive regulation plans has clearly been
26 in the direction of more broad-based performance benchmarks, such as prices and

⁵⁰ State of Iowa, Department of Commerce, Utilities Board. MidAmerican Energy Company, *Order Approving Settlement With Modifications*, Docket Nos. RPU-01-3, RPU-01-5, Issued December 21, 2001, p. 7.

⁵¹ Alabama Public Service Commission (APSC) 1982, Rate RSE and Rate CNP; Order. Alabama PUC Docket Nos. 18117 and 18416. November 17, pp. 5-6.

⁵² APSC (1990) Op Cit.

⁵³ See, for example, the Annual Report of the Alabama Public Service Commission, 2001, p. 12.

1 earnings.⁵⁴ This is also consistent with the empirical evidence that targeted performance
2 benchmarks do not necessarily increase overall efficiency performance of the utilities.

3 **Q. Is it reasonable to expect that the performance of broad-based**
4 **incentive regulation in electric power will compare favorably with the experience in**
5 **telecommunications?**

6 A. Yes. The preponderance of the evidence from the telecommunications
7 industry is that all major stakeholders benefited from the adoption of broad-based
8 incentive regulation. There is every reason to believe that the same experience will be
9 replicated in the electric power industry. This question really comes down to whether
10 regulated firms will respond to the profit motive to improve operating efficiency, to
11 introduce new and innovative products and to invest prudently when allowed to partake
12 in the returns from those investments. The experience with incentive regulation over the
13 last two decades in the U.S. and around the world allows this question to be answered in
14 the affirmative.

15 **Q. Please summarize the experience with incentive regulation in the**
16 **electric power industry.**

17 A. The adoption of incentive regulation in electric power parallels the trend
18 established in telecommunications. The initial move away from cost-of-service
19 regulation is typically a rate-moratorium with earnings sharing followed in due course by
20 price cap regulation. The experience to date with incentive regulation in electric power is
21 encouraging and reflects a move away from more targeted performance benchmarks and
22 toward more broad-based performance benchmarks. The expectation is that this trend

⁵⁴ See Kenneth W. Costello, "Future Trends In Performance-Based Regulation For U.S. Investor-Owned Electric Utilities." The National Regulatory Research Institute, January 1999, p. 13 and note 35.

- 1 will continue. There also is a growing sentiment among public service commissions that
- 2 broad-based incentive regulation offers a means by which to provide strong incentives for
- 3 efficiency while ensuring that consumers share in those efficiency gains.⁵⁵

⁵⁵ Ibid, pp. 10-16.

VI. COMMON MYTHS ABOUT INCENTIVE REGULATION⁵⁶

Q. Is it true that incentive regulation guarantees the regulated firm high profits?

A. No. The regulated firm's profits may either rise or fall with adoption of incentive regulation depending upon its overall performance. In other words, the regulated firm agrees to bear greater risk in return for the prospect of greater reward. That greater reward may or may not materialize. However, it is also true that regulated firms have responded to these enhanced incentives with increased efficiency and realized higher profits as a result.

Q. Is it necessarily true that incentive regulation allows the regulated firm to benefit from the inherent deficiencies in cost-of-service regulation?

A. No. Under traditional, cost-of-service regulation, the regulatory authority determines whether the costs and investments by the regulated firm were "prudently incurred" and hence whether they should be reflected in the rates that consumers pay. As discussed above, it is generally recognized that traditional, cost-of-service regulation does not provide strong incentives for efficiency. The expectation, of course, was that incentive regulation would encourage the regulated firm to innovate and discover new and improved methods for increasing efficiency. To ensure that consumers shared in the efficiency gains resulting from this change in regulatory regime, the initial incentive regulation plans in the telecommunications industry frequently mandated rate refunds, bill credits, and infrastructure commitments as an additional "entry fee" for incentive

⁵⁶ This discussion is based, in part, on Sappington and Weisman, 1996b, Op Cit.

1 regulation.⁵⁷ It is significant also that these additional efficiency gains were passed on to
2 consumers on a prospective basis and were therefore independent of whether they were
3 actually realized by the regulated firm.

4 **Q. Is it true that strong earnings for the regulated firm necessarily imply**
5 **rates that are too high for consumers?**

6 **A.** No, as the analytical research demonstrates, relative to cost-of-service
7 regulation, consumers have benefited from stable or falling prices under incentive
8 regulation that are independent of the regulated firm's actual performance—that is,
9 whether profits are strong or profits are weak. The regulated firm will likely respond to
10 the superior incentives put in place under incentive regulation by increasing its
11 investment in cost-reducing innovation. This may lead to higher profits for the firm. The
12 regulator could appropriate these dollars—dollars that may not exist but for the superior
13 incentives of incentive regulation—and pass them on to consumers in the form of
14 reduced rates in the short run, but only at significant costs associated with such actions in
15 the longer run. The cost of such actions is measured in terms of reduced incentives for
16 the regulated firm to undertake cost-reducing innovation in the future. Hence, such a
17 policy could well result in consumers paying higher rates in the longer run than would
18 otherwise be necessary had the regulator honored its commitment to the regulated firm.
19 A regulatory policy based on the philosophy that “no good deed should go unpunished” is
20 likely to discourage the very type of efficient behavior that sound regulatory policy
21 should seek to encourage.

⁵⁷ See, for example, Kridel, Sappington and Weisman, Op Cit.

1 **Q. Is it true that incentive regulation plans should base the regulated**
2 **firm's financial rewards solely on those aspects of the firm's performance that are**
3 **of primary concern to the regulator?**

4 A. No. If an incentive regulation plan targets financial incentives too
5 specifically on a single, narrow dimension of the firm's performance, the firm will likely
6 be induced to devote excessive attention to this one dimension and neglect other
7 important dimensions.⁵⁸ The social costs of such poorly designed performance
8 benchmarks can be extremely high. This serves to underscore the importance of
9 designing incentive regulation with broad-based performance benchmarks in order to
10 avoid unintended consequences. It is significant that the trend in recent years in the
11 practice of incentive regulation has been in the direction of broad-based performance
12 benchmarks, such as overall earnings or rate levels.

13 As an example, consider a narrowly targeted performance benchmark that
14 rewards the firm on the basis of employees per megawatt hour supplied. This incentive
15 scheme will encourage the firm to economize on the use of labor in production, but it will
16 not necessarily encourage the firm to produce power at the lowest possible cost. As
17 discussed above, it is generally recognized that the firm can develop information superior
18 to that of the regulator regarding costs and demand when provided with sufficiently
19 strong incentives to do so. The regulated firm should be encouraged to use this
20 information and capability to improve overall operating performance, which generally
21 implies the use of broad-based rather than targeted performance targets.

⁵⁸ See Paul Joskow and Richard Schmalensee, "Incentive Regulation For Electric Utilities." *Yale Journal on Regulation*, Vol. 4, No. 1, 1986, p. 25; and Sappington and Weisman, Op Cit., 1996b, pp. 5-8.

1 **Q. Is it true that earnings levels for the regulated firm that trigger**
2 **earnings sharing necessarily imply rates that are too high?**

3 A. No. The earnings of the regulated firm that are shared with consumers
4 represents a "performance dividend." Consumers become quasi-shareholders of the firm
5 by the very fact that they benefit when the financial performance of the firm exceeds
6 certain target levels. These superior performance levels may not be sustainable on a
7 permanent basis and therefore should not necessarily be reflected in lower rates for
8 consumers.

9 **Q. Is the design of regulatory policy a "zero-sum" game in the sense that**
10 **gains to the regulated firm come at the expense of consumers?**

11 A. No. The rate at which incentive regulation has been adopted in the
12 telecommunications industry can only be described as "warp" speed. This has
13 occurred primarily because all parties, including consumers, regulated firms,
14 competitors, and regulators could benefit from the adoption of incentive
15 regulation. Indeed, the evidence suggests that these benefits have been pervasive
16 and realized by all key stakeholders. The adoption of incentive regulation is not a
17 zero-sum game, but in fact a positive-sum game.

VII. EXPERIENCE UNDER THE EARP

Q. Economic theory suggests that all key stakeholders can benefit from the adoption of incentive regulation. Has this been the experience with the EARP?

A. Yes. Consumers, Union Electric, the state of Missouri and the regulatory process have all benefited from the EARP. It is, of course, difficult to determine what the alternative state of the world would have looked like under continued cost-of-service regulation, but it is clear that Union Electric's performance under the EARP compares quite favorably in multiple dimensions to what would likely have been the experience under traditional, cost-of-service regulation.

A. Consumer Benefits

Q. Please describe the types of benefits that consumers have realized over the course of the EARPs.

A. Consumers have benefited in at least four different ways from the incentives provided under the EARPs to make prudent investments in infrastructure and operate efficiently. First, consumers have been the beneficiaries of sharing credits and rate reductions that total some \$425 million. Second, Union Electric customers enjoy some of the lowest electric power rates of any major metropolitan area in the country. Third, consumers bear less risk under the EARPs for rate increases driven by earnings deficiencies than would have been the case under traditional, cost-of-service regulation. Fourth, Union Electric has been able to maintain or improve service quality and reliability while enhancing overall operating efficiency.

1 **Q. Please describe the nature of the \$425 million in bill credits and rate**
2 **reductions that consumers have realized over the course of the EARPs.**

3 A. The \$425 million in sharing credits and rate reductions reflect the benefits
4 that consumers derive from Union Electric's superior efficiency, including cost control
5 and sound management practices,⁵⁹ demonstrated over the course of the EARPs.
6 Moreover, Union Electric customers have received these sharing credits in a timely
7 manner, typically less than a year, with only modest regulatory or procedural delays. As
8 discussed in the testimony of Dr. Lowry, Union Electric has demonstrated improved
9 productivity growth during the EARP years. For example, Dr. Lowry's analysis shows
10 that over the 1995-2000 period UE's operating costs have grown 1.68% more slowly than
11 the costs of a typical utility with UE's operative characteristics. As Dr. Lowry shows,
12 this means that UE's total annual costs today would be higher by approximately \$200
13 million absent the performance gains that the Company was able to achieve under the
14 EARPs. Hence, UE clearly demonstrated pronounced productivity gains over the course
15 of the EARPs. Dr. Lowry's analysis also shows that model predictions of overall costs
16 for a company with Union Electric's operating characteristics are 14.3% higher than
17 UE's actual costs.

18 **Q. What is the basis for your statement that Union Electric's customers**
19 **enjoy some of the lowest rates in any major metropolitan area in the country?**

20 A. Schedule 2 of my testimony provides a set of figures and tables that
21 compare electricity prices across metropolitan areas and in relation to the prices for all

⁵⁹ See, for example, Barbara A. Eiseman, *Standard and Poors Research: Union Electric*, November 10, 2000.

1 goods and services. These figures and tables are based on data from the Bureau of Labor
2 Statistics (BLS), the government agency that compiles consumer price information, and
3 the Edison Electric Institute. The BLS reports average electricity prices for 15 major U.S.
4 metropolitan areas, including the St. Louis metropolitan area. Schedule 2-1 shows that
5 during the year ending June 30, 2001 (the last sharing period under the Company's
6 EARP) consumers in the St. Louis metropolitan area enjoyed some of the lowest
7 electricity prices of any major metropolitan area in the country—second only to Seattle
8 which is naturally-endowed with hydro-electric capabilities.

9 **Q. What is the significance of comparing rates in St. Louis with the rates**
10 **of other major metropolitan areas?**

11 A. The cost of operating in major metropolitan areas tends to be high (due to
12 factors such as property costs and taxes). Hence, a comparison across major metropolitan
13 areas is more appropriate because it controls, in part, for operating characteristics that are
14 beyond the firm's control. Schedule 2-2 presents the 1998-2001 average cost of
15 electricity in the Midwest and nationwide as reported by the BLS. The chart shows
16 clearly that in the Midwest and nationwide (1) average electricity costs for mid-sized
17 metropolitan areas significantly exceed the electricity costs in small metropolitan areas;
18 and (2) electricity costs in large metropolitan areas on average exceed those of mid-sized
19 metropolitan areas. Schedule 2-2 specifically shows that average rates in large
20 metropolitan areas in the Midwest are approximately 20% higher than the average rates
21 of small Midwestern metropolitan areas. Importantly, these BLS data also show that
22 electricity rates for consumers in St. Louis, a metropolitan area with approximately 2.4

1 million people, are almost as low as the average electricity rates for small Midwestern
2 metropolitan areas with less than 50,000 people.

3 **Q. How do Union Electric's rates compare to the rate performance of**
4 **other utilities in the Midwest during the period of the EARPs?**

5 A. Schedule 2-3 compares consumers' average electricity prices for the year
6 before the first EARP with average electricity prices in the last year of the second EARP.
7 The chart specifically shows electricity prices in St. Louis relative to the average prices
8 for small, large, and all urban areas in the Midwest. It shows that, regardless of the size
9 of metropolitan area, average electricity prices in the Midwest have *increased* since
10 1994/95, while electricity prices in St. Louis have *decreased*. As a result, while St. Louis
11 electricity prices for 1994/95 were only somewhat lower than average prices for all
12 Midwestern urban areas surveyed by the BLS, electricity prices in St. Louis are now
13 significantly lower than the average for the Midwest. They are, in fact, closer to the
14 much lower average prices for small metropolitan areas. It should be emphasized that
15 these rate comparisons overstate the effective rates that Union Electric's customers are
16 paying, because the BLS data do not reflect either the seasonal discounts or the sharing
17 credits under the Company's EARP. Notably, Schedule 2-4 also shows that Union
18 Electric has been able to maintain prices for electric power consistently below the
19 average prices paid by consumers in St. Louis.

20 **Q. How does the behavior of electricity prices in St. Louis compare with the**
21 **price trends for all other goods and services in St. Louis?**

22 A. Schedule 2-5 compares the prices for electricity with the prices for all goods
23 and services in the St. Louis metropolitan area over the 1994-2000 period. While the

1 prices for all goods and services increased by 15.4% and energy prices increased by
2 24.4% over this period, effective retail electricity prices for Union Electric's consumers
3 declined by 6.8%. Further discussion of this comparison based on the most recent data
4 available is provided in Schedule 9 of Mr. Kovach's testimony.

5 **Q. How might the Commission use these price comparisons in their**
6 **deliberations in this proceeding?**

7 A. I believe that these price comparisons give credence to the claim that
8 Union Electric's solid returns did not come at the cost of high rates for consumers of
9 electric power. This observation notwithstanding, it is important that some care be taken
10 in interpreting these rate comparisons. While the rate comparisons themselves are purely
11 descriptive in nature on a stand-alone basis, they take on added significance when
12 evaluated as part of Union Electric's overall record of performance with respect to its (i)
13 productivity growth over the course of the EARPs; (ii) record on service quality and
14 reliability; (iii) prudent management practices and cost-control; (iv) environmental
15 protection and preservation; and (v) deployment of innovative technology. In other
16 words, these price comparisons add to the weight of the evidence that Union Electric has
17 been able to surpass—perhaps by a sizable margin—the relevant industry-wide
18 benchmarks requisite to a proper evaluation of “competitive” performance.

19 **Q. What do you mean precisely when you say that Union Electric's**
20 **customers bear less risk than they would have under traditional, cost-of-service**
21 **regulation?**

22 A. As discussed in Section IV, incentive regulation provides better rate
23 predictability through a more indirect link between the prices that consumers pay and the

1 actual costs of the regulated firm. This means that consumers are shielded, in part, from
2 rate increases that likely would have been implemented under traditional, cost-of-service
3 regulation. This increased rate stability or “insurance” is a direct benefit to consumers
4 regardless of whether Union Electric actually experiences an earnings deficiency. This
5 greater risk-bearing on the part of Union Electric under the EARPs necessarily implies
6 less risk-bearing on the part of consumers.

7 **Q. What is the significance of the fact that Union Electric has been able**
8 **to maintain or improve service quality and reliability over the course of the EARPs?**

9 A. The productivity gains that Ameren has achieved over the course of the
10 EARPs have not come at the cost of reduced service quality or reliability. To the
11 contrary, Union Electric has been able to maintain or improve service quality and
12 reliability over the course of the EARPs. The specific details of this performance are
13 discussed in the testimony of Mr. Voss. This is significant because it attests to the fact
14 that Union Electric has maintained or improved service quality while supplying power
15 more efficiently.

16 **Q. Are there additional benefits that consumers have realized either**
17 **directly or indirectly during the EARPs?**

18 A. Yes. Union Electric has been recognized as an “environmentally-friendly”
19 company that has consistently demonstrated its ability to control not only its own costs,
20 but also environmental costs that may be borne by future generations, such as emissions

1 and pollutants released into the air and waterways.⁶⁰ In addition, Union Electric has
2 been recognized as an innovative company that has deployed new technology (e.g.,
3 pollution control technology and automated meter reading) in a cost-effective manner in
4 order to meet the evolving needs of consumers of electric power in Missouri.⁶¹

5

6

B. Regulatory Process Benefits

7

8 **Q. Please describe how the regulatory process has benefited from the**
9 **EARP?**

10 **A.** The EARPs have streamlined the regulatory process by alleviating the
11 need for costly and time-consuming rate cases. This has saved time and expense while
12 enabling Union Electric's managers to focus their attention on improving performance
13 and meeting the needs of consumers in the marketplace rather than tending to the
14 regulatory process.⁶² Symmetrically, the Commissioners and the Staff have been able to
15 reallocate more of their time and attention to other regulatory matters without the need to
16 enlist additional resources.⁶³ This is not to suggest that the EARP has not entailed some

⁶⁰ See, for example, "Ameren's Plants Rank High for Low Emissions." *St. Louis Business Journal*, July 23, 2001. This article points out that six of Ameren's plants ranked in the top 10 in the nation for lowest emissions of nitrogen oxide. See, also, "Ameren Corp. Gets Award For Pioneering Technology." *St. Louis Business Journal*, August 8, 1998.

⁶¹ See, for example, "AmerenUE Meter Chief Sees Utility Leading Pack on Technology, Service." Dow Jones Interactive TECHNOLOGY, Retail Services Report 7, March 16, 2001. In addition, AmerenUE won the 1996 and 1998 Missouri Governor's Pollution Prevention Awards.

⁶² The Alabama Public Service Commission (APSC) explicitly recognized that "These long, drawn-out rate cases were extremely expensive and time-consuming for both the Company and the [APSC]." Incentive regulation offered the opportunity to "avoid the pitfalls of regulatory lag and the expenses associated with traditional ratemaking procedures. Alabama power is now able to devote its time to the efficient operation of the Company." See Alabama Public Service Commission (APSC) 1990. Rate RSE and Rate CNP; Report and Order. Alabama PUC Docket Nos. 18117 and 18416. March 5, p. 7.

⁶³ For example, it is my understanding that some of the sharing credits under the EARPs have been delayed for more than a year because of Staff's involvement with this current proceeding and the resource commitment that this involvement entails.

1 administrative intervention because it has, but this administrative intervention likely pales
2 in comparison with the costly litigation and resource expenditures required for frequent
3 rate cases.

4 A streamlined regulatory process will be particularly important in light of
5 the competitive transition in the electric power industry at both the wholesale and retail
6 levels.⁶⁴ These industry changes and their implications for regulatory policy are
7 discussed in the testimony of Dr. Fox-Penner.

8 Finally, it is important to point out that regulatory processes—rate cases in
9 particular—are not benign as they provide a forum for rent-seeking behavior.⁶⁵ Rent-
10 seeking refers generally to socially unproductive expenditures on securing outcomes that
11 are privately beneficial but socially detrimental. In fact, recognition of the inherent
12 inefficiencies associated with rent-seeking behavior in regulatory proceedings prompted
13 one prominent law and economics scholar to conclude “that the social costs of regulation
14 probably exceed the social costs of private monopoly.”⁶⁶

⁶⁴ See Paul L. Joskow, “Deregulation and Regulatory Reform in the U.S. Electric Power Sector.” In *Deregulation of Network Industries*, eds. Sam Peltzman and Clifford Winston. AEI-Brookings Joint Center For Regulatory Studies, Washington, D.C. 2000, pp. 113-188; and William W. Hogan, “Electricity Market Restructuring: Reform of Reforms.” *Journal of Regulatory Economics*, Vol. 21, Number 1, January 2002, pp. 103-132.

⁶⁵ These social costs can take numerous forms that include: (1) a diversion of resources from the marketplace to the hearing room; (2) compliance costs; (3) strategic use of the regulatory process by select interest groups; and (4) competitors developing a dependence on the regulatory process for their very survival. See, for example, Fred S. McChesney. *Money for Nothing: Politicians, Rent Extraction, and Political Extortion*. Cambridge MA: Harvard University Press, 1997.

⁶⁶ Richard A. Posner, “The Social Costs of Monopoly and Regulation,” *Journal of Political Economy*, 83, August 1975, pp. 807-827.

C. Ameren Benefits

Q. Please describe how Ameren has benefited from the EARP.

A. As discussed in the testimony of Dr. Lowry, under the EARP Union Electric has been able to reduce input costs and thereby realize productivity gains and overall cost reductions that far outpace the industry average and the company's own productivity gains achieved prior to the EARPs. These productivity gains, in turn, have allowed Union Electric to achieve solid financial performance while providing consumers in Missouri with a continuous stream of sharing credits and high quality, reliable power at some of the lowest prices in any major metropolitan area in the country. This is arguably the very definition of a "win-win" scenario.

Q. Is it likely that these benefits could have been realized under traditional, cost-of-service regulation?

A. No. It is clear that Union Electric has internalized the superior incentives for efficiency created by the EARP in its own management practices including employee compensation. This is discussed further in the testimonies of Mr. Baxter and Mr. Lindgren. The consensus view of financial analysts appears to be that Ameren is an efficient, well-run company that has succeeded in markets where others have failed and that has implemented disciplined cost control and prudent management practices.⁶⁷

⁶⁷ See, for example, Barbara A. Eiseman, Research Summary: Union Electric Co., *Standard and Poor's*, June 1, 2001. For a summary of analyst statements in this regard, see the testimony of Mr. Baxter.

VIII. EVALUATION OF THE EARP BY INTERVENORS

A. Logical Fallacies in Interpretation

Q. Dr. Weisman, with respect to the distribution of the benefits from the EARP, how do you respond to the intimation by Staff and the statement by Public Counsel that Union Electric may have gotten the better end of the bargain?⁶⁸

A. I find such statements troubling on a number of different dimensions. First, as discussed in Section VI above, it is incorrect to view the gains from incentive regulation as a zero-sum game. The intimation seems to be that because Union Electric realized solid earnings, consumers somehow did not get their fair share of the pie. The facts are that consumers in Missouri enjoyed some of the lowest rates for electric power in any large metropolitan area in the country while participating as quasi-shareholders in the superior financial performance achieved by Union Electric through the earnings sharing provisions in the EARP. Second, if the default response of the regulator to solid earnings on the part of Union Electric is simply to appropriate those dollars in full and pass them on to consumers in the form of lower rates, it will succeed only in dampening Union Electric's incentives for efficient performance. In other words, it will kill the very goose that lays the golden egg. The opportunity for consumers to enjoy lower rates and partake in these sharing credits is unlikely to exist but for the superior incentives for efficient performance created by the EARP. Third, consumers enjoyed greater downside protections under the EARP than they would have experienced under traditional, cost-of-

⁶⁸ *Public Counsel's Report/Regarding The Experimental Alternative Regulation Plan II*, Before The Public Service Commission of the State of Missouri, Case No. EM-96-149. See also, Missouri Public Service Commission, Staff's Report Regarding The Experimental Alternative Regulation Plans of Union Electric Company, D/B/A AmerenUE, Case No. EM-96-149, February 1, 2001.

1 service regulation. In other words, Union Electric agreed to bear greater risk for
2 “deficient earnings” under the EARP than would have been the case under cost-of-service
3 regulation. The fact that this particular “bad” state of earnings deficiencies did not
4 materialize—an outcome directly influenced by Union Electric’s performance under the
5 EARP—does not imply that consumers did not benefit from the “insurance” that such
6 provisions provide. Hence, it is disingenuous to claim on the one hand that consumers
7 did not receive a large enough share of the gains from Union Electric’s successes without
8 recognizing on the other hand that consumers did receive significant benefits while they
9 were insulated to a large degree from the rate increases that may have been implemented
10 had Union Electric experienced an earnings deficiency under traditional, cost-of-service
11 regulation.

12 Finally, the position of Staff and Public Counsel appears to be that the
13 reasonableness of the rates that consumers pay can only be evaluated in light of the level
14 of Union Electric’s earnings. According to this logic, consumers would actually be better
15 off if Union Electric were less efficient because while it is possible that consumers would
16 be paying higher rates—it is also true that Union Electric would be earning less. This is
17 bad economics and even worse public policy because it fails to understand the role of
18 incentive regulation in fostering incentives that have the potential to make all
19 stakeholders better off.

20 **Q. Please respond to Staff’s Response to Interrogatory 59 in which it**
21 **states that “The EARP’s were not designed or intended to be performance or**
22 **incentive-based regulatory experiments.”**

1 A. I must confess to being somewhat perplexed by this response. The crux of
2 Staff's position here appears to be that the EARP cannot possibly be an incentive
3 regulation plan because the term "incentive" does not appear in the descriptor of the
4 EARP. I concede that there is no "I" in the set of letters E-A-R-P, but this is most
5 assuredly a distinction without a difference. Moreover, it is noteworthy that various
6 Commissioners have repeatedly referred to the EARP as an "incentive plan" when it was
7 evaluated at the outset.⁶⁹ The precise verbiage used to refer to the EARP is seemingly
8 unimportant. The fact of the matter is that the structure of the EARP is very similar in
9 many respects to both the early incentive regulation plans in the telecommunications
10 industry and many existing incentive regulation plans in the electric power industry.

11 **Q. What are the key facts that you believe should be taken into account**
12 **by this Commission concerning the role of incentives in regulating utilities in**
13 **Missouri.**

14 A. There are four key facts that I believe to be pertinent to this issue. First, as
15 discussed in Section III, the Missouri Supreme Court has repeatedly stated that "State
16 regulation takes the place of and stands for competition."⁷⁰ Second, the Commission is
17 obliged to consider "all . . . facts that have a material bearing upon the establishment of
18 'just and reasonable' rates as contemplated by [Missouri] statutes and decisions."⁷¹

⁶⁹ See, for example, Hearing, In the matter of a Stipulation & Agreement Respecting UE CO's Effectuating A One-Time credit, A Reduction In Annual Missouri Retail Electric Revenues, and a Three-year Experimental Alternative Regulation Plan, Case No ER-95-411 (7/19/95), at 47:20-22 (referencing statements by Commissioner McClure); and at 98-99:23-2 (referencing statements by Commissioner Drainer).

⁷⁰ *Barker*, 163 S.W. at 858; *accord Utility Consumers Council*, 585 S.W.2d at 47; *May Dep't Stores*, 107 S.W.2d at 44.

⁷¹ See also Ronald Bible's response to Interrogatory 49 in which he states that "Utility regulation acts as a substitute for the economic control of market competition and allows the consumer to receive adequate utility service at a reasonable price."

1 Third, the choice of a "competitive standard" is not an arbitrary one. Rather, it reflects
2 the consensus view among economists that the "competitive standard" puts in place the
3 correct incentives for efficient performance for regulated firms. Fourth, the predominant
4 view in the economics literature is that incentive regulation is superior to traditional, cost-
5 of-service regulation in emulating such a competitive market outcome. Regardless of
6 how the Staff chooses to characterize the EARP, these four facts confirm that the Staff
7 would be required to objectively and thoroughly evaluate the EARP relative to
8 traditional, cost-of-service regulation. This type of evaluation has not been done.

9 **Q. Has Staff performed such an evaluation in its February 1, Report?**

10 A. No. The Staff has posed a set of "evaluation criteria" in its report that
11 focus on a comparison of performance levels between incentive regulation and
12 traditional, cost-of-service regulation, but it has not actually conducted a comprehensive
13 evaluation. And yet, without such an evaluation, it is difficult to understand how the
14 Commission could possibly make an informed decision as to the merits Union Electric's
15 alternative regulation experience based on Staff's report alone.

16 The Staff's report is focused, disproportionately in my view, on what it
17 believes to be "excessive earnings" on the part of Union Electric under the EARP, but
18 there is no good-faith attempt to investigate the performance of the EARP—either in
19 terms of Union Electric's performance relative to historical levels or to other utilities that
20 have operated under cost-of-service regulation. The Staff's position is that the
21 experimental nature of the EARP entails no commitment on the part of the Commission
22 to continue with this form of regulation. I do not take issue with the fact that the
23 Commission may ultimately determine that a return to traditional, cost-of-service

1 regulation is warranted. I do take issue, however, with the contention that the
2 Commission should do so without a more informed, objective analysis of the EARP, an
3 analysis that takes full account of all facts that have a material bearing upon the
4 establishment of “just and reasonable” rates and one that concludes on the merits that a
5 return to cost-of-service regulation is superior to continuing with incentive regulation.

6 The EARP was an experiment and experiments are typically conducted to
7 produce information and data with which to test a particular hypothesis. The particular
8 hypothesis in this case concerns whether incentive regulation is superior to cost-of-
9 service regulation for improving performance. Indeed, the EARP has provided valuable
10 information concerning regulatory principles and practices that should inform the
11 Commission’s deliberations in this case. In point of fact, it is my understanding that
12 Missouri statutes do not grant the Commission or the Staff unbounded discretion to make
13 capricious, arbitrary and uninformed choices with respect to the setting of “just and
14 reasonable” rates—nor as guardians of the public trust should they endeavor to do so.

15 **Q. How do you respond to Staff’s contention on page 11 of its February**
16 **2001 report that Union Electric’s earnings were “clearly excessive” under the**
17 **EARPs?⁷²**

18 A. Given that all parties agreed to the terms and conditions of the EARPs,
19 inclusive of earnings sharing ranges and an absolute cap on allowed returns, there can be
20 no “excessive earnings” by definition. Union Electric agreed to bear greater risk under
21 the EARP—a lower rate-of-return trigger for a rate case—in exchange for the prospect

⁷² Missouri Public Service Commission Staff’s Report Regarding The Experimental Alternative Regulation Plans of Union Electric Company, D/B/A Ameren. Case No. EM-96-149, February 1, 2001 (Hereafter Staff’s Report).

1 of greater reward—the opportunity to realize earnings in excess of the allowed rate-of-
2 return under cost-of-service regulation. Specifically, under the terms of the first and
3 second EARP, Union Electric’s rate of return from its Missouri electric retail operations
4 could not exceed 13.305 and 13.51 percent, respectively. It would not be appropriate to
5 characterize this upper bound on earnings as excessive in light of the fact that a number
6 of utilities around the country are earning at this level under traditional, cost-of-service
7 regulation—a form of regulation that entails less risk-bearing on the part of the regulated
8 firm. These issues are discussed in the testimony of Ms. McShane.

9 **B. Performance Benchmarks**

10 **Q. Do you agree with Staff’s contention on p. 6 of its February 2001**
11 **Report that “the current EARP contains no performance measures or evaluation**
12 **criteria on which to judge the success or failure of the EARPs”?**

13 A. No. I would agree that the EARP does not contain narrowly targeted
14 performance measures, but this is more likely to be a strength than a weakness. As
15 discussed in Section VI above, targeted performance objectives can defeat the overall
16 purpose of incentive regulation because it may encourage the regulated firm to meet or
17 beat the performance targets and yet sacrifice overall efficiency in the process. Union
18 Electric should be encouraged to enlist its superior information about cost and demand to
19 innovate and discover new and improved methods to enhance overall efficiency and
20 performance in the provision of electric power. This implies that the regulator should
21 refrain from the type of “command and control” micromanagement characteristic of
22 traditional, cost-of-service regulation.

23 **Q. What performance measures and evaluation criteria did the EARPs**
24 **contain?**

1 A. First, rates were frozen for the duration of these incentive regulation plans.
2 Union Electric's performance standard was as broad as it could be: the price that
3 customers pay for the Company's services. Hence, Union Electric had strong incentives
4 to practice diligent cost-control and find new and innovative ways to enhance efficiency
5 in order to keep its average costs below this benchmark. Second, earnings that reached
6 stipulated levels were shared with consumers. Moreover, consumers received an ever-
7 increasing share of these earnings as the level of earnings increased. Third, the relatively
8 short duration of these incentive plans coupled with the knowledge that its performance
9 across multiple dimensions (*e.g.*, service quality, reliability, safety, environmental record
10 and expeditious distribution of sharing credits) would be scrutinized in the course of
11 deciding whether Union Electric would remain under incentive regulation provided yet
12 another important performance benchmark.

13 **Q. Please describe what you mean by broad-based as opposed to targeted**
14 **performance benchmarks.**

15 A. A primary objective of incentive regulation is to enhance overall
16 efficiency. This might be achieved by rewarding the firm on the basis of targeted
17 performance benchmarks for each technology type (*e.g.*, cost per kilowatt hour for coal,
18 gas and nuclear power, transmission, distribution, energy efficiency, reliability and so
19 on). A superior approach, however, is to provide the regulated firm with a simple, easy
20 to understand, financial incentive to supply electric power at the lowest possible cost
21 without concern as to the specific technologies or management practices used to achieve
22 these efficiencies. Notably, this is precisely the type of incentive structure that is in place
23 under the EARP and is, in fact, used throughout our market economy. To wit,

1 shareholders generally refrain from micromanagement of managerial decisions, but rely
2 instead upon broad-based performance benchmarks such as earnings or stock price
3 appreciation. With the use of broad *vis a vis* targeted performance benchmarks, the firm
4 will have an incentive to enlist its information advantage and innovative capabilities to
5 improve overall efficiency. It is not necessary and potentially counterproductive for the
6 regulator to specify precisely how these efficiencies should be achieved with targeted
7 performance benchmarks. As Professor David Sappington has observed:

8 A related problem with targeted incentive schemes is that superior
9 alternatives may be avoided altogether. Because of his imperfect
10 information about the regulatory environment, the regulator may not be
11 aware of every activity that can reduce operating costs. For example, the
12 regulator may be unaware of new computer software that can improve
13 coordination of production across plants, and thereby reduce operating
14 costs. Unaware of the software, the regulator will not think to create
15 specific incentives for its use. Consequently, the firm will be motivated to
16 pursue those cost-reducing activities for which it receives explicitly
17 targeted rewards, and will shun alternative activities for which no reward
18 is promised. In contrast, if the regulator established an incentive structure
19 under which the firm is rewarded for reducing operating costs, regardless
20 of how the costs are achieved, the firm would be induced to engage in the
21 set of activities that achieve any given level of cost reduction most
22 efficiently.⁷³

23 This observation notwithstanding, there may be some reticence on the part of the
24 Commission and Staff to accept these broad-based performance benchmarks because it
25 requires them to grant the regulated firm greater discretion in how it operates its business.

26 **Q. Do you concur with the contention on page 14 of Staff's Report that**
27 **"the protection which the EARPs have provided UE from rate changes resulting**

⁷³ David E. M. Sappington, "Designing Incentive Regulation." *Review of Industrial Organization*, Vol. 9, 1994, p. 254.

1 **from Staff excess earning complaint cases has continually put UE in a protected**
2 **earnings position....”**

3 A. No. The fundamental flaw with Staff’s argument is that it observes an
4 outcome from an incentive regulation regime and incorrectly presumes that this same
5 outcome would have been realized under traditional, cost-of-service regulation. In point
6 of fact, the “excessive earnings” that Staff wants to appropriate from Union Electric may
7 exist only because Union Electric credibly believed that the Commission would honor its
8 commitment and allow Union Electric to retain the fruits of its efforts, at least within
9 reasonable limits. Moreover, in similar fashion to Public Counsel, the Staff errs in
10 failing to recognize that consumers benefit from the fact that Union Electric is more
11 limited in its recourse to the Commission for rate increases driven by earnings
12 deficiencies than would have been the case under traditional, cost-of-service regulation.
13 Hence, in a different state of the world in which Union Electric had failed to operate
14 efficiently, ratepayers would have been shielded, in part, from rate increases that likely
15 would have been implemented to remedy the resultant earnings deficiencies. The fact
16 that this state of the world did not materialize is not a deficiency of the EARP, but rather
17 confirmation of Union Electric’s superior performance.

18 **Q. How do you respond to the contention on page 14 of Staff’s Report**
19 **that it “views EARPs as a form of continuous revenue requirement scrutiny”?**

20 A. This statement is troubling because it reflects regulatory practices that run
21 directly counter to both economic principles and Missouri statutes. First, it is well-
22 known that “continuous revenue requirement scrutiny” provides little if any incentive for
23 efficient performance and arguably represents the “worst” way to practice cost-of-service

1 regulation from the perspective of promoting long-term, dynamic efficiency. This stands
2 in sharp contrast to the strong incentives for efficient performance provided by
3 competitive markets. Given that Missouri statutes direct the Commission to serve as a
4 substitute for competition, the Staff's position essentially amounts to an affirmation that
5 it has adopted a standard for regulatory scrutiny that is the very antithesis of the goal of
6 emulating a competitive market outcome.

7 **Q. Do you agree with the contention on page 26 of the Staff Report "that**
8 **the existence of the EARPs has shielded UE from certain Staff adjustments to cost of**
9 **service that have been effectuated on other utilities operating in the state of**
10 **Missouri."**

11 **A.** No. A fundamental principle underlying incentive regulation is that the
12 regulated firm bears greater risk in exchange for the prospect of greater reward. It is
13 patently incorrect to argue that because relatively high earnings were realized by the
14 regulated firm under incentive regulation that it was somehow protected because other
15 utilities that were subject to traditional, cost-of-service regulation would not have been
16 allowed to retain that level of earnings. Once again, the fundamental flaw in Staff's logic
17 is the presumption that the level of efficiencies realized is independent of the form of
18 regulation under which the regulated firm operates. Moreover, the Staff fails to
19 recognize that Union Electric would not enjoy the same recourse to the Commission
20 under the EARP for rate increases due to an earnings deficiency that would have been
21 afforded other utilities subject to traditional, cost-of-service regulation. This rate stability
22 or "insurance" is a benefit to consumers regardless of the state of the world—high
23 earnings or low earnings for the regulated firm—that actually materializes.

C. Competition As A Discovery Process

1
2

3 **Q. Do you agree with the contention on page 13 of Staff's Report that**
4 **"UE could have achieved many of the 'efficiencies' that have been reflected in the**
5 **EARPs" under traditional, cost-of-service regulation?**

6 A. No. The experience from the telecommunications industry suggests that
7 incentive regulation resulted in productivity gains and improved performance that would
8 not have been realized under traditional, cost-of-service regulation. This is not to suggest
9 that what transpired in telecommunications will necessarily be repeated in all respects in
10 electric power. That having been said, the best information available, including a
11 voluminous amount of economic research of both a theoretical and empirical nature,
12 suggests that incentive regulation fosters productivity gains that would not have been
13 realized otherwise.

14 **Q. Do Missouri statutes require Union Electric to be efficient in**
15 **provisioning electric power to consumers in Missouri?**

16 A. Yes. But as discussed above, the experience with respect to both
17 command economies and incentive regulation certainly suggests that incentives are
18 superior to legislative mandates and central planning for allocating resources to their
19 highest valued use and encouraging efficient behavior. In fact, a recent report of the
20 Missouri Energy Policy Task Force "recognizes that state agencies may be reluctant to
21 become more efficient if those efficiencies result in a dollar-for-dollar reduction in their
22 budgets."⁷⁴ The Task Force therefore recommends that these agencies must be given

⁷⁴ Final Report of the Missouri Energy Policy Task Force Presented to Governor Bob Holden. Northwest Missouri State University, Maryville Missouri, October 16, 2001, p. 19.

1 some incentive in order to become more efficient: "the policy of the state of Missouri ...
2 should allow an agency that achieves quantifiable energy savings to retain a reasonable
3 portion of that amount in its budget to advance the agency's mission."⁷⁵ What this
4 passage correctly recognizes is that a dollar-for-dollar appropriation of cost savings—a
5 feature of strict cost-of-service regulation—is unlikely to elicit efficient behavior.

6 Whether it is a state statute proclaiming "thou shall be efficient" or a "five
7 year" plan in the former Soviet Union attempting to substitute for the marketplace, we
8 now recognize and accept as an axiom of human behavior that incentives are a superior
9 method for motivating desired behavior. It is in this context that the substitution of
10 incentive regulation for traditional, cost-service regulation is observed with increasing
11 frequency.

12 Finally, it is incorrect, in my view, to characterize the efficiency benefits
13 of incentive regulation as somehow suggesting that regulated utilities deliberately
14 engaged in inefficient behavior under cost-of-service regulation. This is so because
15 competition is first and foremost a discovery process in which efficient operating
16 practices and superior innovations are revealed over time. Hence, it is not necessarily the
17 case that a utility subject to cost-of-service regulation simply disavows known superior
18 operating practices and opportunities to innovate. Rather, it is that the incentives
19 requisite to their discovery are simply not present. In other words, the regulated firm
20 cannot knowingly ignore or disavow what it has yet to discover.

21 **Q. Would a Staff recommendation to return to traditional, cost-of-**
22 **service regulation run counter to industry trends?**

⁷⁵ *ibid.*

1 A. Yes. While a return to traditional, cost-of-service regulation is not
2 unprecedented, it tends to be the exception rather than the rule. As discussed in Section
3 V, there has been a pervasive adoption of incentive regulation in the telecommunications
4 industry and this same trend can be discerned in electric power. In a small number of
5 cases, regulators have suspended the incentive regulation plan and returned the regulated
6 firm to cost-of-service regulation. There are also examples in which regulated firms
7 chose to return to cost-of-service regulation. The causal factor for these actions was
8 typically some breach of the terms and provisions of the incentive regulation plan by the
9 regulated firm or the regulator. For example, the regulated firm may have allowed
10 quality of service to deteriorate over the course of the incentive regulation plan, or the
11 regulator may have been unable to make a credible commitment to the reward/penalty
12 structure of the incentive plan.

**IX. THE PROPOSED ALTERNATIVE REGULATION PLAN
(Alt Reg Plan)**

A. Key Provisions

Q. Please describe the key features of Union Electric's Alternative Regulation Plan ("Alt Reg Plan").

A. The proposed Alt Reg Plan is discussed in detail in the testimony of Mr. Baxter. The key provisions of this plan include:

1. A one-time credit of \$15 million.
2. A permanent rate reduction of \$15 million annually.
3. A guaranteed \$17 million in annual "performance dividends" (\$15 million for customer credits and \$2 million for LICAP and EDP) for earnings above 10.5 percent.
4. An earnings sharing provision designed so that customers receive additional benefits from Union Electric's superior performance.
5. The creation of fund for a Low Income Assistance and Economic Development with an initial infusion of \$10 million and subsequent annual funding through the performance dividend.
6. An infrastructure investment commitment.
7. A rate case trigger if earnings fall below 9.5 percent for more than 12 consecutive months.
8. Streamlined administration of the plan.
9. Accelerated payment of performance dividends and interest on any unpaid amounts.

1 10. Explicit monitoring of service quality.

2

3

B. Stakeholder Benefits

4

5 **Q. Please describe the benefits that flow to consumers under the Alt Reg**
6 **Plan.**

7 **A. Consumers benefit in at least five different ways under the proposed Alt**
8 **Reg Plan.** First, consumers enjoy a rate reduction at the outset of the plan that reflects
9 Union Electric's pronounced productivity gains realized over the course of the last
10 EARP. It is important to place this rate reduction in its proper context since consumers
11 of Union Electric's services currently enjoy some of the lowest rates in any major
12 metropolitan area in the country. Second, consumers are treated as quasi-shareholders in
13 that, in addition to the \$17 million baseline performance dividend, they will receive
14 incremental performance dividends whenever Union Electric's gross returns exceed 12.5
15 percent. Third, consumers (inclusive of low-income assistance and economic
16 development) will partake in \$17 million of "guaranteed" performance dividends
17 provided that Union Electric's gross return-on-equity is at least 10.5 percent. Fourth,
18 customers enjoy a greater degree of rate stability relative to that which they would
19 experience under traditional, cost-of-service regulation. In other words, consumers are
20 protected within reasonable limits from rate increases driven by earnings-deficiencies that
21 normally would be implemented under traditional, cost-of-service regulation. Finally,
22 customers also benefit from Union Electric's initial infusion of \$10 million for low
23 income assistance and economic development plus the annual funding by means of the
24 performance dividend.

1 **Q. Please describe how the regulatory process benefits from the Alt Reg**
2 **Plan.**

3 A. The Alt Reg Plan continues and improves upon the streamlining of the
4 regulatory process that was evident under the EARPs. First, the plan calls for a three-
5 year term that will eliminate the need for costly and time-consuming rate cases for at
6 least this period of time. This is likely to be particularly important in light of growing
7 competitive pressures in the electric power industry and the resources that such
8 complexities can be expected to consume, not only for Union Electric, but for the
9 Commission and its Staff as well. Second, the process for distributing performance
10 dividends is streamlined under the Alt Reg Plan to significantly accelerate the timely
11 distribution of performance dividends to consumers while ensuring that any disputes that
12 do arise are resolved in an expeditious manner without delay in the payment of the
13 undisputed amount. Third, the Alt Reg Plan stipulates that the Commission is to be
14 provided with regular reports that detail financial performance, monthly operating
15 budgets, infrastructure commitments and service quality. Hence, the Alt Reg Plan does
16 not contemplate any curtailment of Commission oversight.

17 **Q. Please describe the benefits that will flow to Union Electric under the**
18 **Alt Reg Plan.**

19 A. The benefits to Union Electric under the Alt Reg Plan are conditional on
20 its performance, just as they would be if it were operating under competitive market
21 conditions. If Union Electric performs well and is able to control its costs, it will enjoy
22 returns that exceed those that it would have realized under traditional, cost-of-service
23 regulation. If Union Electric performs poorly, it will realize returns that fall short of

1 those returns that it would have realized under traditional, cost-of-service regulation.
2 Hence, the Alt Reg Plan allows Union Electric to bear more risk in exchange for the
3 prospect of greater reward. Notably, the fact that Union Electric is bearing greater risk
4 under the Alt Reg Plan necessarily implies that consumers are bearing less risk. In other
5 words, customers are protected with "insurance" in the form of rate stability.

6

7

C. Assessment of Design Elements

8

9 **Q. Does the Alt Reg Plan Rely Upon Broad-Based Performance**
10 **Benchmarks?**

11 A. Yes. The plan is broadly focused on the rates that customers pay as
12 opposed to narrowly-targeted performance benchmarks. The trend in the electric power
13 industry (and virtually all industries implementing incentive regulation plans) is to move
14 away from targeted performance benchmarks in the direction of broad-based performance
15 benchmarks. Hence, Union Electric and, in turn, its customers can benefit from enhanced
16 efficiency in a manner that is largely independent how those efficiencies are achieved.
17 This important attribute of the Alt Reg Plan is consistent not only with the growing trend
18 in the electric power industry, but with accepted doctrine in the economics literature as
19 well.

20 **Q. How does the sharing grid and maximum allowable earnings for the**
21 **Alt Reg Plan compare to that of the previous EARP?**

22 A. Relative to the last EARP, consumers (inclusive of the LICAP and EDP)
23 under the Alt Reg Plan enjoy a baseline performance dividend of \$17 million plus a
24 higher level of sharing in the first earnings band—55 percent versus 50 percent. The

1 combination of the revised sharing grid and baseline performance dividends also means
2 that the threshold for incremental sharing has been reduced from 12.61 percent to
3 approximately 12.1 percent . Furthermore, the maximum possible return for Union
4 Electric is decreased from 13.51 percent in the last EARP to approximately 13.3 percent
5 under the proposed Alt Reg Plan. In addition, the normalized sharing-credits realized
6 over the course of the last EARP form the basis for the permanent rate reduction in the
7 proposed Alt Reg Plan. Hence, because additional efficiency gains are increasingly more
8 difficult to achieve and consumers are provided with an even larger share of earnings, the
9 Alt Reg Plan is designed to be even more challenging for Union Electric. In other words,
10 Union Electric must work harder and be more innovative in order to achieve the same
11 returns it realized over the course of the last EARP.

12 **Q. Does the Alt Reg Plan provide the opportunity for all key**
13 **stakeholders to be made better off in comparison with traditional, cost-of-service**
14 **regulation?**

15 **A.** Yes. The Alt Reg Plan provides the opportunity for all key stakeholders
16 (consumers, the regulator and the regulated firm) to be made better off in comparison
17 with traditional, cost-of-service regulation. Moreover, it is important to recognize that
18 the one-time credit of \$15 million, the up-front rate reduction of \$15 million annually, the
19 \$17 million in baseline performance dividends, and the increased rate stability are
20 largely independent of Union Electric's actual performance. The other source of
21 consumer benefits—the incremental performance dividends—allows consumers to
22 benefit additionally as quasi-shareholders from Union Electric's superior performance on
23 pre-sharing returns above 12.5 percent.

1 **Q. Does the Alt Reg Plan contain pass-through provisions that would**
2 **enable Union Electric to petition for a rate increase due to events that are beyond its**
3 **control?**

4 A. Yes, but the scope of these provisions is quite modest in comparison with
5 other incentive regulation plans. For example, the Alt Reg Plan allows for pass-through
6 provisions in the case of (i) Acts of God; (ii) terrorists acts; and (iii) changes in
7 governmental or regulatory policies (e.g., taxation and legislative actions). Two
8 observations should be noted with respect to these pass-through provisions. First, the
9 pass-through provisions are symmetric with respect to increasing and decreasing rates.
10 Second, because the pass-through provisions are quite limited, Union Electric bears a
11 greater degree of risk in that it has limited recourse to the Commission to petition for
12 higher rates due to events of an adverse nature that are beyond its control. Greater risk-
13 bearing on the part of Union Electric necessarily implies less risk-bearing on the part of
14 consumers. In other words, consumers will enjoy an even greater degree of rate stability
15 that would otherwise be the case.

16 **Q. By way of summary, please provide an overall assessment of the**
17 **proposed Alt Reg Plan.**

18 A. An incentive regulation plan is not a "one-size-fits-all" proposition. This
19 suggests that incentive regulation plans are likely to vary across jurisdictions and across
20 regulated firms within those jurisdictions in a manner that reflects varying objectives for
21 the incentive regulation plan and the particular operating characteristics for the regulated
22 firm. In this sense, the Alt Reg Plan is a natural successor to the EARPs. First, it is
23 transparent and easy to understand which means there should be few surprises and hence

1 fewer disputes. Second, the Alt Reg Plan incorporates broad-based performance
2 benchmarks that will provide Union Electric with incentives to innovate and discover
3 new methods by which to improve efficiency. Third, the plan is designed to make all
4 stakeholders better off. Fourth, while there are more elaborate incentive regulation plans
5 in place in other jurisdictions, the Alt Reg Plan builds on the solid foundation of the
6 EARPs and a record of performance that has served all stakeholders well. In other
7 words, this type of incentive regulation plan "works" well and thus represents both sound
8 regulatory practice and good public policy.

X. RETURN TO COST-OF-SERVICE REGULATION

A. Key Principles

Q. Should the Commission ultimately decide to return Union Electric to cost-of-service regulation, do you have any thoughts concerning the economic principles that should govern this change in regulatory regime?

A. Yes. First of all, let me reiterate my strong conviction that all parties can be made better off under incentive regulation and that incentive regulation is superior to traditional, cost-of-service regulation in improving performance and emulating a competitive market outcome. That said, allow me to address two primary economic principles that should be followed if the Commission ultimately decides that a return to cost-of-service regulation is warranted.

1. The Commission should not set artificially-low allowed rates, including an inadequate return, in an implicit or explicit attempt to claw-back some of the earnings that the Staff deemed to be "excessive" under the EARPs. Such actions would breach the Commission's commitment to Union Electric under the terms of the EARPs. Symmetrically, in a different state of the world in which Union Electric had not fared-well financially under the EARPs, it should not be granted an artificially-high allowed rate-of-return in the transition back to cost-of-service regulation to compensate it for its losses under the EARPs. Both the regulatory authority and the regulated firm must honor the commitment to the terms of the incentive regulation plan—regardless of whether the outcome for the regulated firm is positive or negative. Doing otherwise will simply "destroy" performance incentives.

1 2. The EARPs provided Union Electric with stronger incentives to enhance the
2 efficiencies of its operations. These efficiencies are reflected in Union Electric's
3 capital investments, its information systems, its management practices, its
4 employee compensation practices, and its superior business acumen. The
5 Commission should recognize that these efficiency enhancements transcend the
6 end of the last EARP and will unavoidably "spill over" into any new cost-of-
7 service regulatory regime. This means that the cost-of-service for Union Electric
8 consumers now is lower than it would have been in the absence of the EARPs.
9 The Commission should account for this positive "spill-over" by augmenting,
10 within a reasonable range, the allowed rate of return to reflect these efficiencies.
11 Symmetrically, if Union Electric had manifested lethargy and exercised poor
12 business judgment under the EARPs, the cost-of-service would likely be higher
13 than it would have been in the absence of the EARPs. If that were the case, the
14 Commission should account for this negative "spill-over" by reducing the allowed
15 rate-of-return towards the low-end of a reasonable range to reflect these
16 inefficiencies.

17 **Q. Are you suggesting with these principles that the Commission**
18 **contemplate an allowed rate of return that varies with the efficiencies of the**
19 **regulated firm?**

20 A. Yes, this is precisely what I am suggesting. An allowed rate of return that
21 does not vary with relative firm efficiencies, after controlling for factors that are beyond
22 the firm's control, essentially rewards the lethargy of the inefficient firm and penalizes
23 the diligence of the efficient firm. Indeed, Professor James Bonbright recognized more

1 than 40 years ago that the most serious of all the objections to cost-of-service regulation
2 is that:

3 ... as long as rates are fixed so as to assure even a company under
4 mediocre management that it can cover its costs, including a "fair rate of
5 return," and as long as any higher return is denied even to a company
6 under exceptionally able management, there will be lacking under
7 regulated private ownership a stimulus for efficiency comparable to the
8 stimulus of actual competition. ... it suggests the wisdom of more
9 systematic and deliberate efforts on the part of regulating agencies to
10 distinguish, somewhat as competition is supposed to do, in favor of
11 companies under superior management and against companies under
12 substandard management. The distinction might take the form of an
13 express and publicly recognized differential rate of return...⁷⁶

14 **Q. Are there dynamic efficiency considerations that the Commission**
15 **should take into account if it decides to return Union Electric to traditional, cost-of-**
16 **service regulation?**

17 **A.** Yes. The Commission should recognize the importance of providing
18 strong incentives for dynamic efficiency. An inordinately-low allowed rate of return will
19 reduce internal funds available to finance the regulated firm's infrastructure
20 improvements and capacity expansions. This may be particularly critical in light of
21 recent events: >

22 Investors and lenders, spooked by the twin specters of California and
23 Enron, have become less likely to commit capital to building new power
24 plants, transmission lines and gas pipelines. The U.S. will require big
25 additions to its power production and distribution capacity when it
26 emerges from the current recession—but for now, the nation's capital
27 markets are reluctant to provide the necessary funds.⁷⁷

⁷⁶ Bonbright, Op Cit., pp. 262-263.

⁷⁷ Rebecca Smith, "Enron's Swoon Leaves a Grand Experiment In a State of Disarray." *The Wall Street Journal*, November 30, 2001, p. A1.

1 Moreover, retained earnings are frequently the preferable means of financing
2 investment projects as they constitute the major source of corporate funds.⁷⁸ Reductions
3 in these internal funds force the regulated firm to attract needed cash flow from external
4 capital markets. The induced bias towards external funds generates capital cost pressure
5 and thereby reduces the incentive and ability for the firm to undertake timely
6 infrastructure improvements and capacity expansion. These dynamic efficiency
7 considerations are particularly important given recent problems with inadequate supply.⁷⁹
8 In addition, punishing Union Electric for superior performance with an artificially-low
9 allowed rate of return will undermine incentives for efficiency and discourage innovation
10 in a manner that runs directly counter to the workings of a competitive market.

11

12 **B. Investment-Backed Expectations**
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14 **Q. Are there any additional considerations that the Commission should**
15 **take into account in the transition back to cost-of-service regulation?**

16 A. Yes. These additional considerations are concerned with *investment-*
17 *backed expectations*—the idea that Union Electric invested in plant and equipment
18 (inclusive of irreversible, cost-reducing innovations) with the expectation of a
19 continuation in existing regulatory policies.⁸⁰ While the EARPs were, by definition,
20 “experimental” regulation plans, it was reasonable for Union Electric to believe that

⁷⁸ See Steven M. Fazzari, R. Glenn Hubbard and Bruce C. Petersen, Financing Constraints and Corporate Investment, *Brookings Papers On Economic Activity*, Vol. 1, 1988, pp. 141-195.

⁷⁹ Lawrence Makovich and Daniel Yergin, “California in the Dark.” *Policy Matters*, 01-08, March 2001. These researchers describe the regulatory process in California as being “cumbersome and deeply discouraging to would-be investors.” (p. 3); and Hogan, Op Cit., pp. 126-130.

⁸⁰ Gregory J. Sidak and Daniel F. Spulber, *Deregulatory Takings and the Regulatory Contract*. Cambridge University Press: Cambridge MA, 1997, pp. 12, 224-226 and 275-276.

1 superior performance under the plan, measured in terms of both operating efficiencies
2 and consumer benefits, would have led with high probability to a forthright evaluation of
3 the EARPs and the opportunity to continue with a successor incentive regulation plan.
4 This is particularly the case given the evolution of incentive regulation in both the
5 telecommunications and electric power industries and the fact that a return to cost-of-
6 service regulation is not common and typically involves some breach of faith by one of
7 the parties.

8 The deprivation of the returns from Union Electric's superior performance
9 under the EARP that would result from an artificially-low allowed rate of return could
10 well constitute a governmental "taking" in violation of constitutional protections that
11 prohibit unjust confiscation of property without due compensation.⁸¹ The precise nature
12 of these arguments is beyond the scope of this testimony. Nonetheless, these issues
13 would seem to warrant serious consideration by this Commission.

⁸¹ The idea that the standard for a takings claim may depend upon the particular form of regulation is discussed in Dennis L. Weisman, "Is There 'Hope' For Price Cap Regulation?" *Information Economics and Policy*, September, 2002 Forthcoming.

XI. CONCLUSIONS

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Q. Please state your conclusions.

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A. Staff's rate complaint filing is notably void of any explicit consideration of regulatory principles applicable to the fact that Union Electric has been operating under an experimental regulation plan. It is widely accepted that economic regulation should attempt to emulate a competitive market outcome. This suggests that any determination as to what constitutes "just and reasonable rates" should be determined relative to a competitive market standard and is therefore largely independent of the earnings of the regulated firm. It is important to recognize that this standard actually protects consumers by ensuring that a relatively inefficient firm has limited recourse to the regulator for an increase in rates due to deficient earnings. The experience with alternative forms of regulation over the last two decades in combination with a voluminous economic literature documents that incentive regulation is superior to traditional, cost-of-service regulation in emulating a competitive market outcome. Telecommunications offers a compelling case study in this regard. Incentive regulation is becoming increasingly prominent in the electric power industry as well. In fact, the experience with Union Electric's EARPs confirms that significant benefits were realized by all key stakeholders.

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Unfortunately, the Staff did not undertake a meaningfully, comprehensive evaluation of the EARPs, nor did it attempt to measure the benefits to key stakeholders other than Union Electric. Rather, the Staff focused exclusively on the rates that consumers would have paid had Union Electric been subject to cost-of-service regulation and assumed that cost-of-service regulation would have resulted in Union Electric

1 achieving the same level of efficiency that it did under the EARPs. This logic is
2 fallacious and runs counter to human nature, economic principles and the experience with
3 incentive regulation. Nonetheless, Staff appears poised to punish Union Electric for its
4 superior performance with a rate proposal that can best be described as “confiscatory”.
5 The Commission should therefore reject Staff’s proposal out of hand and adopt Union
6 Electric’s proposed Alt Reg Plan because it builds on the strong foundation of the earlier
7 EARPs in enabling consumers as quasi-shareholders to benefit from Union Electric’s
8 superior performance. Nonetheless, should the Commission decide on the merits that a
9 return to traditional, cost-of-service regulation is warranted, it is critical that explicit
10 consideration be given to Union Electric’s superior performance as revealed over the
11 course of the EARPs. Indeed, the competitive transition now underway in the electric
12 power industry will require a different mindset on the part of regulators—one that
13 recognizes the importance of incentives in promoting efficiency and long-term
14 investment in what is arguably the most critical of infrastructure industries.

15 **Q. Does this conclude your testimony?**

16 **A. Yes it does.**

EXECUTIVE SUMMARY

Dennis L. Weisman, Ph.D.

Professor of Economics at Kansas State University, specializing in the area of strategic behavior and government regulation, with an emphasis on incentive regulation

* * * * *

The purpose of my rebuttal testimony is four-fold. First, I discuss the evolution of incentive regulation in regulated industries, the economic benefits of incentive regulation and why it represents sound regulatory policy. Second, I respond directly to a number of issues raised by the Commission's Staff concerning the purpose, performance and objectives of the experimental alternative regulation plans (EARPs). Third, I discuss the incentive properties of Union Electric's proposed Alternative Regulation Plan (Alt Reg Plan) and why its adoption by this Commission will serve the public interest. Finally, I develop a set of principles that I believe the Commission should take under consideration should it ultimately decide to return Union Electric to traditional, cost-of-service regulation. A summary of the key points developed in the course of my testimony follows:

- 1) Incentives play a critical role in a market economy in allocating scarce resources to their highest-valued use and in encouraging the most efficient means of producing society's output. Indeed, the experience on the world stage over the last two decades reveals the extreme limitations of command economies and the clear superiority of market-based economies in fostering these incentives.

- 2) Relatively recent changes in the economic regulation of public utilities (electric power, natural gas, and telecommunications) mirror similar developments on the world stage. It is generally recognized that the fundamental role of economic regulation is to emulate a competitive market outcome if such were feasible. There is now a virtual universality of thought in the economics literature that incentive regulation is superior to traditional, cost-of-service regulation in emulating a competitive market outcome.
- 3) Specifically, relative to traditional, cost-of-service regulation, incentive regulation provides stronger incentives for the regulated firm to (i) undertake cost-reducing innovation; (ii) invest and operate efficiently; and (iii) produce with the most efficient technology choice.
- 4) A key attribute of incentive regulation and one that likely explains its pervasive and rapid adoption is that all key stakeholders (including consumers, the regulated firm, competitors and the regulator) can be made better off in the transition from traditional, cost-of-service regulation to incentive regulation. In other words, incentive regulation is a "win-win" proposition. Furthermore, it is important to recognize that the adoption of incentive regulation does not signify the abandonment of economic regulation, but simply the evolution from an inferior form of regulation to one that has been shown to be superior.
- 5) In the course of just 15 years in the local telecommunications industry in the U.S., 48 states have adopted some form of incentive regulation for the major local exchange telecommunications companies. The electric power industry is

following a similar trend with at least 28 electric utility companies in 16 states currently operating under some form of broad-based incentive regulation plan—typically with some form of earnings sharing.

- 6) The experience with incentive regulation in the telecommunications industry has been positive. This experience shows that relative to cost-of-service regulation, incentive regulation has resulted in (i) prices that are decreasing (or at least not increasing); (ii) enhanced levels of investment; (iii) higher levels of universal service; (iv) higher productivity growth; and (v) financial performance for the regulated firm that compares favorably with traditional, cost-of-service regulation. The experience with incentive regulation in electric power, though still more limited in scope, shows strong promise as well.
- 7) The trend in incentive regulation in the electric power industry has clearly been in the direction of more broad-based incentive regulation plans that focus on aggregate performance measures such as earnings and rate levels and away from narrowly-targeted incentive regulation plans that focus on individual measures of performance. This change reflects the consensus view that narrowly-targeted performance benchmarks may not provide strong incentives for efficient overall performance since the regulated firm has better information than the regulator concerning the best means available to reduce costs and improve operating efficiency.
- 8) It is incorrect, in my view, to characterize the efficiency benefits of incentive regulation as somehow suggesting that regulated utilities deliberately engaged

in inefficient behavior under cost-of-service regulation. This is so because competition is first and foremost a discovery process that allows for the revelation of efficient operating practices and superior innovations over time. Hence, it is not necessarily the case that a utility subject to cost-of-service regulation simply disavows known superior operating practices and opportunities to innovate. Rather, it is that the incentives requisite to their discovery are simply not present. In other words, the regulated firm cannot knowingly ignore or disavow what it has yet to discover.

- 9) Union Electric's performance under the EARPs since 1995 is affirmation that incentive regulation can be a "win-win" proposition for all parties. Union Electric achieved solid returns through efficient investment and prudent management practices, while its customers received high quality service at some of the lowest rates of any metropolitan area in the country. These consumers also received sharing credits and rate reductions totaling some \$425 million.
- 10) The "performance dividends" that consumers have received under the EARPs are testament to the efficiency gains that Union Electric has achieved. As Dr. Lowry shows, UE's annual costs today would be significantly higher had it not been for the performance gains that the Company achieved under the EARPs. Consumers also benefited from greater rate stability in comparison with traditional, cost-of-service regulation. In addition, the EARPs have served to streamline the regulatory process with a reduced number of formal regulatory proceedings before the Commission.

- 11) The Staff's rate complaint filing is notably void of any explicit consideration of regulatory principles applicable to the fact that Union Electric has been operating under an experimental regulation plan. In its February 2001 Report, the Commission Staff failed to conduct a comprehensive, objective analysis of the performance of the EARPs and their impact on key stakeholders. Moreover, this report makes no attempt to examine trends in incentive regulation throughout the industry nor to assess the overall performance of incentive regulation for Union Electric's customers or for consumers in general. Consequently, the Commission would be ill-advised to make a decision as to the merits of incentive regulation relative to traditional, cost-of-service regulation solely on the basis of Staff's February, 2001 Report. My testimony along with that of Dr. Lowry is designed to supplement the record accordingly.
- 12) The Alt Reg Plan proposed by Union Electric in this proceeding builds on the strong foundation of the EARPs in ensuring that incentive regulation continues to be a "win-win-proposition" for all key stakeholders. The Alt Reg Plan ensures that consumers realize at the outset of the plan; that consumers continue to benefit as quasi-shareholders through "performance dividends" in a timely fashion; and that consumers continue to enjoy some of the lowest rates for electric power among the major metropolitan areas in the country. In addition, the share of earnings that consumers receive in the sharing bands are increased relative to the last EARP to provide funding for low-income

assistance and economic development. Finally, the Alt Reg Plan provides for continuous monitoring of service quality and infrastructure commitments.

- 13) The Commission may still decide that a return to traditional, cost-of-service regulation is in the public interest. Should this be the case, it is critical that the rates the Commission ultimately decides upon not be in effect an attempt to "claw-back" the earnings that Union Electric realized through its superior performance over the course of the EARPs. Rather, the Commission should continue to recognize the importance of rewarding superior performance. This further suggests that the Commission should take explicit recognition of Union Electric's superior performance in setting the allowed rate-of-return going forward. A failure to do so will serve only to dampen the incentives for efficient performance that sound regulatory policy should seek to encourage.
- 14) Despite the fact that the EARPs were experimental incentive regulation plans, Union Electric had a reasonable expectation that superior performance under these plans would have resulted in a fair and principled evaluation of the plans by Staff and, in turn, the likelihood of being able to continue with some form of incentive regulation. This expectation is based on the evolution of incentive regulation in both the telecommunications and electric power industries and the fact that a return to cost-of-service regulation, though not unprecedented, typically involves some breach of faith by one of the parties.
- 15) Staff's view of incentive regulation is fundamentally flawed because it rests on the false premise that incentive regulation is a zero-sum game. In fact, the available evidence suggests that the solid returns that Union Electric realized

under the EARPs did not come at the cost of higher prices for consumers. Staff focused exclusively on the rates that consumers would have paid had Union Electric been subject to cost-of-service regulation and assumed that cost-of-service regulation would have resulted in Union Electric achieving the same level of efficiency that it did under the EARPs. This logic is fallacious and runs counter to economic principles and the experience with incentive regulation.

- 16) The competitive transition now underway in the electric power industry will require a different mindset on the part of regulators—one that recognizes the importance of incentives in promoting efficiency and long-term investment in what is arguably the most critical of infrastructure industries.

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

The Staff of the Missouri Public Service Commission,	)	
	)	
Complainant,	)	
	)	
vs.	)	Case No. EC-2002-1
	)	
Union Electric Company, d/b/a	)	
AmerenUE,	)	
	)	
Respondent.	)	

AFFIDAVIT OF DENNIS L. WEISMAN, Ph.D

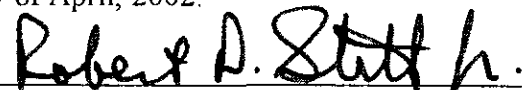
STATE OF KANSAS)
) ss
CITY OF MANHATTAN)

Dennis L. Weisman, being first duly sworn on his oath, states:

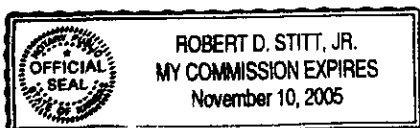
1. My name is Dennis L. Weisman, Ph.D. I work in Manhattan, KS and I am employed by Kansas State University as a Professor of Economics.
2. Attached hereto and made a part hereof for all purposes is my Rebuttal Testimony on behalf of Union Electric Company d/b/a AmerenUE consisting of 84 pages, Appendix A and Schedules 1 through 2, all of which have been prepared in written form for introduction into evidence in the above-referenced docket.
3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct.


Dennis L. Weisman, Ph.D

Subscribed and sworn to before me this 25 day of April, 2002.


Notary Public

My commission expires: 11-10-05



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1989 - 1993	SBC Communications Inc.:
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OTHER POSITIONS HELD (CONTINUED):

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PUBLICATIONS:

"Strategic Sharing In Regulatory Regimes." *Economics Letters*, 2002 Forthcoming.

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WORK IN PROGRESS:

"The Efficient Component Pricing Rule: Friend or Foe?" Submitted to the *International Journal of Industrial Organization*.

"Incentives For Non-Price Discrimination In The U.S. Long-Distance Market." Submitted to *Information Economics and Policy* (with I. Kondaurova).

"A Theory of Mergers In Network Industries." Submitted to *The American Economic Review*.

"Price Caps and Quality." Submitted to the *Journal of Regulatory Economics*.

WORK IN PROGRESS (CONTINUED):

"Signaling Worker Quality Under An Affirmative Action Constraint."

EXPERT WITNESS TESTIMONY:

Statement in Support of Senate Bill 606 Before The Commerce Committee of the Kansas State Legislature. Subject Matter: Broadband Deployment and Relaxed Regulatory Oversight of Local Exchange Carriers, February 26, 2002.

Evidence Filed With The Canadian Radio-Television and Telecommunications Commission In Response To Telecom Public Notice CRTC 2001-37 On Behalf of TELUS Communications, Inc. Subject Matter: Price Cap Regulation and Accommodative Competitive Entry Policies, May, 31, 2001.

Testimony Before The Colorado Public Utilities Commission In Docket Number 00A-201T On Behalf of Qwest Communications. Subject Matter: Removal of Imputation Requirements In IntraLATA Toll Markets, October 2000.

Testimony Before The Kansas Corporation Commission in Docket Number 98-SWBT-431-DRS On Behalf of Southwestern Bell Telephone Company. Subject Matter: Depreciation and Price Cap Regulation, February 1999.

Testimony Before The Texas Public Utilities Commission In Docket Numbers 16189, 16196, 16226, 16285, 16290, 16455, 17579, 17587, and 17781 On Behalf of Southwestern Bell Telephone Company. Subject Matter: Local Competition and Pricing of Unbundled Network Elements, September 1997.

Affidavit Filed With The Kansas Corporation Commission In Docket No. 197-SWBT-440-IAT On Behalf of Southwestern Bell Telephone Company. Subject Matter: The Anti-Competitive Implications Of Selective Pass-Through of The Kansas Universal Service Fund Assessment. June 12, 1997.

Affidavit Filed With The Federal Communications Commission On Behalf of SBC Communications Inc. For Provision Of In-Region, InterLATA Services In Oklahoma (With David S. Sibley). Subject Matter: Incentives For Anti-Competitive Behavior, CC Docket No. 97-121, May 27, 1997.

Testimony Before The Arkansas Public Service Commission In Docket Number 96-395-U On Behalf of Southwestern Bell Telephone Company. Subject Matter: Local Competition and Pricing of Unbundled Network Elements, January 1997.

EXPERT WITNESS TESTIMONY (CONTINUED):

Testimony Before The Kansas Corporation Commission In Docket Number 97-AT&T-290-ARB On Behalf of Southwestern Bell Telephone Company. Subject Matter: Local Competition and Pricing of Unbundled Network Elements, January 1997.

Testimony Before The Kansas Corporation Commission in Docket Number 190-492-U On Behalf of Southwestern Bell Telephone Company. Subject Matter: Price Cap Regulation and Economically Efficient Imputation Policies, August 1996.

Testimony Before The Canadian Radio-Television and Telecommunications Commission In Response To Telecom Public Notice CRTC 96-8 On Behalf of TELUS Communications, Inc. Subject Matter: Price Cap Regulation and Related Issues, October 1996.

Affidavit filed with the Kansas Corporation Commission In Docket No. 96-SWBT-356-TAR On Behalf of Southwestern Bell Telephone Company. Subject Matter: The Economic and Competitive Implications of Mandatory Disclosure of Proprietary Cost and Demand Information. April 12, 1996.

Testimony before the Missouri Public Service Commission in Case Number TO-86-53 On Behalf of Southwestern Bell Telephone Company. Subject matter: Shared Tenant Services and Residual Regulatory Obligations in the Telecommunications Industry, July 1987.

Testimony before the Kansas Corporation Commission in Docket No. 127,140-U On Behalf of Southwestern Bell Telephone Company. Subject matter: Bypass and Competition in the Telecommunications Industry, September 1986.

Testimony before the Missouri Public Service Commission in Case Number TR-86-84 On Behalf of Southwestern Bell Telephone Company. Subject matter: Bypass and Competition in the Telecommunications Industry, February 1986.

Testimony before the Texas Public Utilities Commission in Docket Number 6200 On Behalf of Southwestern Bell Telephone Company. Subject matter: Bypass and Competition in the Telecommunications Industry, November 1985.

Testimony before the Arkansas Public Service Commission in Docket Number 83-042-U On Behalf of Southwestern Bell Telephone Company. Subject matter: Bypass and Competition in the Telecommunications Industry, September 1985.

INVITED PRESENTATIONS:

"Regulatory Moral Hazard: Price Caps and Endogenous Entry Under the 1996 Telecommunications Act." Competitive Entry In Regulated Industries. Center For Research In Regulated Industries, Rutgers University, Newark, New Jersey, May 2000.

"The Telecommunications Act of 1996: The 'Costs' of Managed Competition." American Enterprise Institute, Washington D.C., September 1999 (with D. Lehman).

"Vertical Integration and Exclusionary Behavior in Network Industries." The Rutgers University 12th Annual Western Conference of the Advanced Workshop In Regulation and Competition, San Diego, California, July 1999.

"The Political Economy of Price Cap Regulation." The Rutgers University 11th Annual Western Conference of the Advanced Workshop In Regulation and Competition, Monterey, California, July 1998.

"Regulation and Common Costs: Estimation versus Allocation – A Discussion." Pricing and Costing A Competitive Local Telecommunications Network. American Enterprise Institute, Washington D.C., November 1997.

"Does Tighter Price Cap Regulation Increase Consumer Welfare?" The Rutgers University 10th Annual Western Conference of the Advanced Workshop In Regulation and Public Utility Economics, San Diego, California, July 1997.

"Competition, Incentive Regulation, and Strategic Behavior Under The 1996 Telecommunications Act." Utility Regulation And Strategy: The Basics Revisited. Conference sponsored by the Public Utility Research Center at the University of Florida, Gainesville, Florida, February 1997.

"Competitive Incentives of Vertically Integrated Local Exchange Carriers." Twenty-Third Annual Telecommunications Policy Research Conference. Solomons, Maryland, October 1995; and The Rutgers University 9th Annual Western Conference of the Advanced Workshop In Regulation and Public Utility Economics, San Diego, California, July 1996.

"Seven Myths About Incentive Regulation." Pricing and Regulatory Innovations Under Increasing Competition. Conference sponsored by the Center for Research in Regulated Industries, Rutgers University, Newark, New Jersey, October 1995.

INVITED PRESENTATIONS (CONTINUED):

"Strategic Behavior of the Vertically Integrated Firm: The Case of RBOC Entry Into InterLATA Long Distance." The Rutgers University 8th Annual Western Conference of the Advanced Workshop In Regulation and Public Utility Economics, San Diego, California, July 1995.

"The Promise and Pitfalls of Incentive Regulation." Market and Technological Convergence: Implications For Regulation. Conference sponsored by the Public Utility Research Center at the University of Florida, Gainesville, Florida, April 1995.

"Potential Pitfalls in Empirical Investigations of the Effects of Incentive Regulation Plans in The Telecommunications Industry." Telecommunications Infrastructure and the Information Economy: Interaction Between Public Policy and Corporate Strategy. Conference sponsored by the School of Business at the University of Michigan, Ann Arbor, Michigan, March 1995.

"Designing Incentive Regulation For The Telecommunications Industry." American Enterprise Institute, Washington D.C., March 1995 (with D. Sappington).

British Broadcasting Corporation (BBC) Radio Interview with Dan Corry of the Institute For Public Policy Research, London, England. Documentary. "Analysis: The Regulatory State?" October 23, 1994.

"Designing Carrier of Last Resort Obligations." The Rutgers University 7th Annual Western Conference of the Advanced Workshop in Regulation and Public Utility Economics, San Diego, California, July 1994.

"Incentive Regulation: Lessons From Telecommunications." Innovative Incentive Rate Regulation for a Competitive Electric Utility Industry. Conference co-sponsored by the Center for Regulatory Studies and the Institute of Government and Public Affairs. Chicago, Illinois, April 1994.

"Why Less May Be More Under Price Cap Regulation." Twenty-First Annual Telecommunications Policy Research Conference. Solomons, Maryland, October 1993; and The Rutgers University 12th Annual Eastern Conference of the Advanced Workshop in Regulation and Public Utility Economics, Brewster, Cape Cod, Massachusetts, May 1993.

"Managed Competition In Telecommunications." Regulation and Planning In A Market Economy. Conference sponsored by the Public Utility Research Center, University of Florida. Gainesville, Florida, April 1993.

INVITED PRESENTATIONS (CONTINUED):

"Cross-Subsidization and Price Predation in Public Enterprise;" and "Incentive Regulation: Theory and Practice." Southeastern Regional Business and Economics Utilities Conference, Atlanta, Georgia, September 1991.

"Post-Divestiture Pricing Trends In The Telecommunications Industry." Divestiture: Five Years Later. Conference sponsored by the Center for Telecommunications and Information Studies at Columbia University, Washington, D.C., March 1989.

"The Impact of Telecommunications Regulation On The Economic Incentives of Private Network Deployment." National Communications Forum, Chicago, Illinois, October 1988.

"Protecting The Right To Be Served By Regulated Utilities Subject To Competition: A Critical Assessment." 11th World Engineering Congress, Atlanta, Georgia, October 1988.

"Default Capacity Tariffs: Smoothing The Transitional Regulatory Asymmetries In The Telecommunications Marketplace." Fifteenth Annual Telecommunications Policy Research Conference, Airlie, Virginia, November 1987.

"Traffic Sensitive Costs, Bypass and Pricing For Carrier of Last Resort." Bell Communications Research Conference on Traffic Sensitive Cost Recovery. Seattle, Washington, July 1986.

"Forecasting Bypass Adoption In Telecommunications." National Forecasting Conference, Denver, Colorado, June 1985.

"A General Theory of Point-to-Point Long Distance Demand." Bell Communications Research Business Research Conference, Durango, Colorado, October 1984.

HONORS, AWARDS, AND GRANTS:

2001	Edgar S. Bagley Research Award
1999 – 2000	American Enterprise Institute Grant (Co-Principal Investigator)
1996	William L. Stamey Teaching Award
1995	Edgar S. Bagley Research Award
1993	Awarded First Place In Graduate Student Paper Competition, Twenty-First Annual Telecommunications Policy Research Conference

HONORS, AWARDS, AND GRANTS (CONTINUED):

1990 – 1993	Florida Public Service Commission Grant to the Public Utility Research Center
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at the University of Florida (Co-Principal Investigator)

1984 – 1992	Designated Very High Potential Manager, Southwestern Bell Corporation
1991	Awarded First Place In Paper Competition sponsored by Public Utilities Reports, Inc., Southeastern Business and Economics Utilities Conference (with S. Berg)
1991	University of Florida Research Fellowship
1989	Management Stock Award, Southwestern Bell Corporation
1979	B.A. Conferred with High Honors
1971	Eagle Scout Award

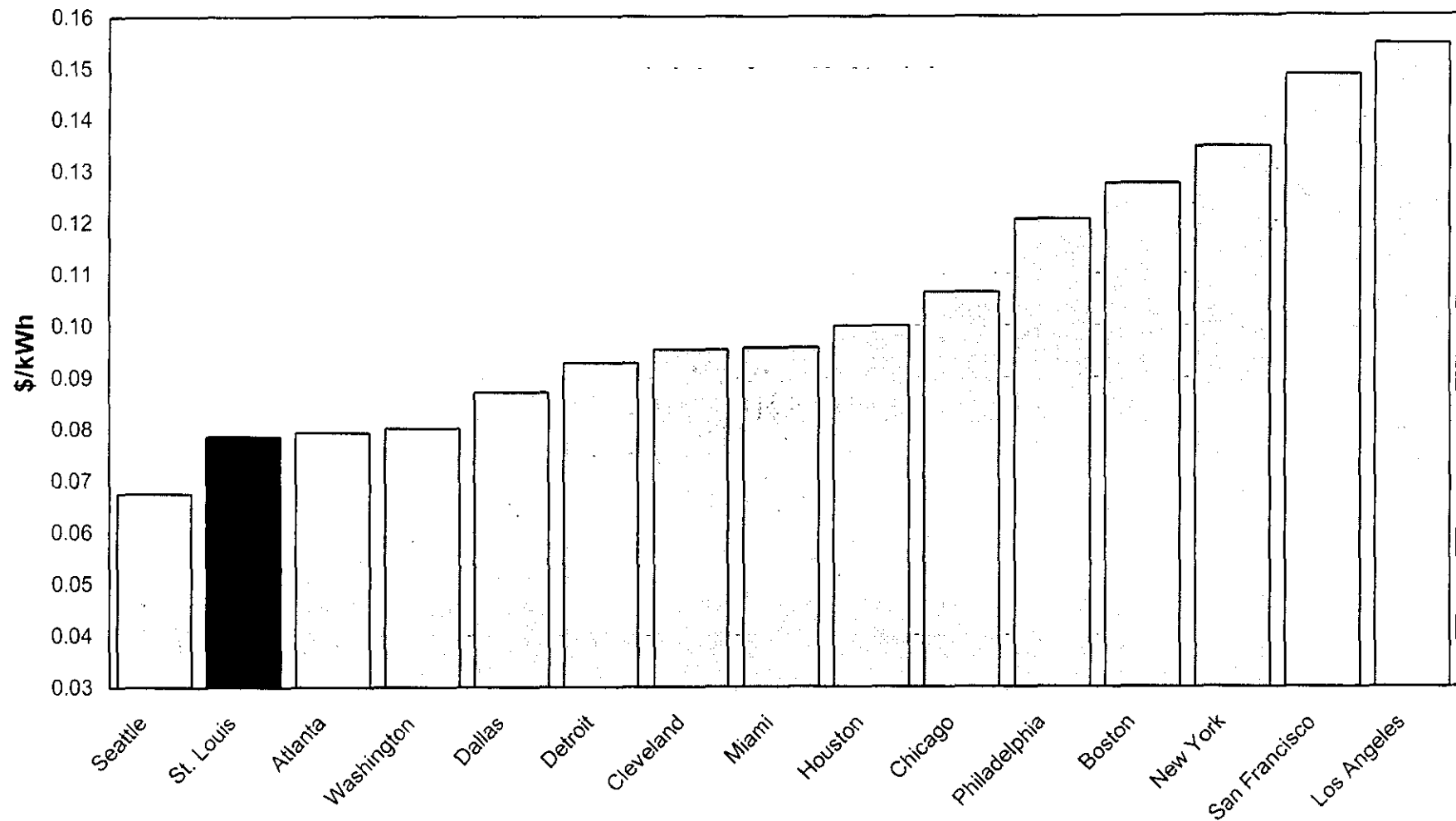
EDITORIAL BOARDS:

1996 - Present	Information Economics and Policy
1997 - Present	Journal of Regulatory Economics

REFeree/REVIEWER FOR:

American Economic Review	Journal of Regulatory Economics
Cambridge University Press	Kluwer Academic Publishers
Eastern Economic Journal	MIT Press
Economics Letters	Oxford Economic Papers
Edward Elgar Publishing	Review of Industrial Organization
Empirical Economics	Review of Network Economics
Information Economics and Policy	Southern Economic Journal
International Journal of Industrial Organization	Telecommunications Policy
Journal of Economics	Telecommunications Systems
Journal of Economics and Business	The Energy Journal
Journal of Industrial Economics	The Journal of Law, Economics, & Organization
Journal of Industry, Competition and Trade	The Review of Economics and Statistics
Journal of Productivity Analysis	

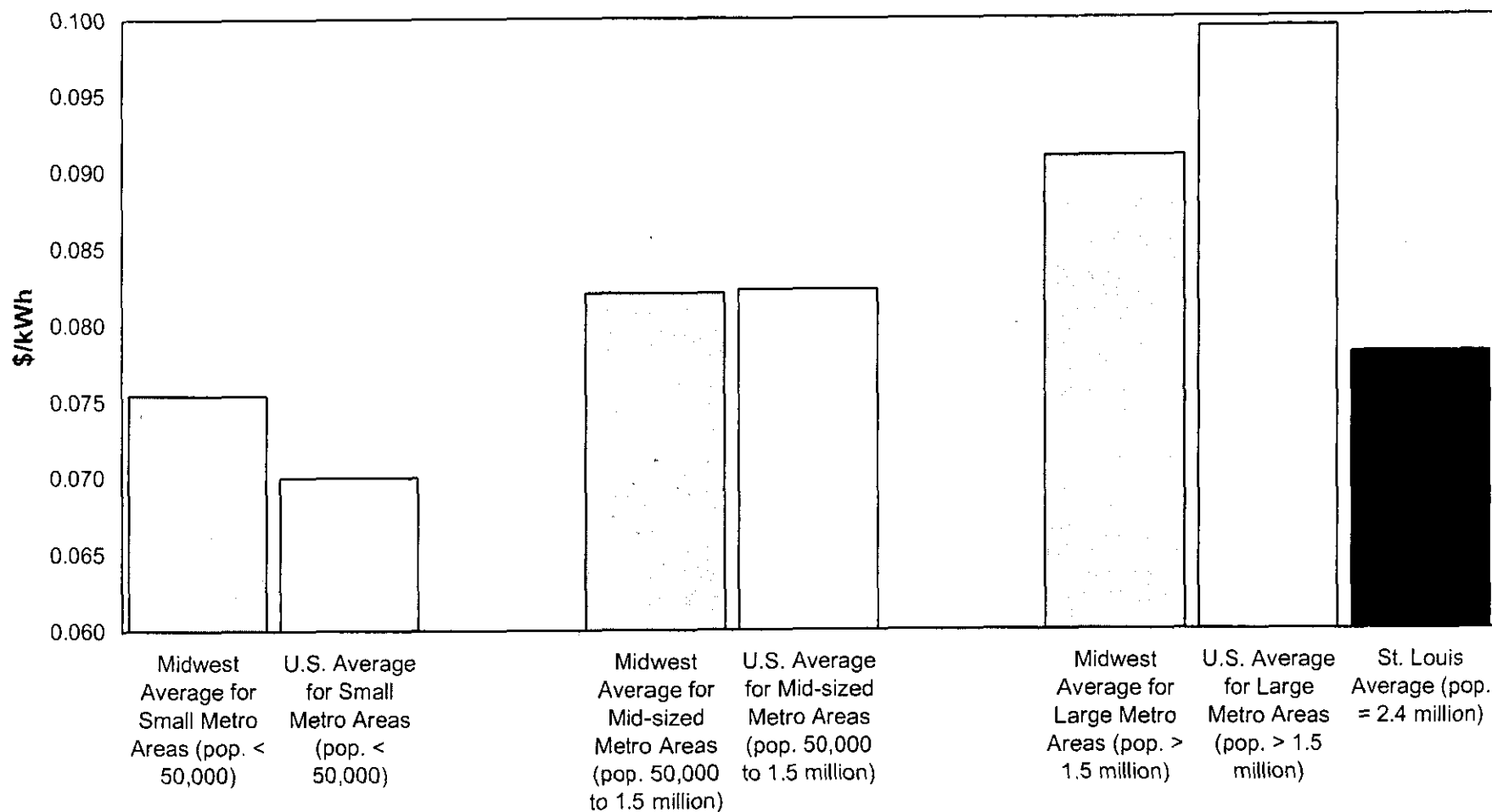
**Schedule 2-1: Average Consumer Electricity Prices (2001) for All Major Metropolitan Areas
Reported by the Bureau of Labor Statistics**



Notes:

- 1 - BLS data based on monthly surveys of 10 residential electricity bills per metropolitan area.
- 2 - St. Louis Metro Area includes some counties not served by Ameren. Rates do not include seasonal discounts or EARP sharing credits.
- 3 - Data for St. Louis for 1998 to 2001 are obtained by extrapolating 1997 data using the annual growth rate of the CPI electricity index for the city of St. Louis.
- 4 - Source: www.bls.gov/data.

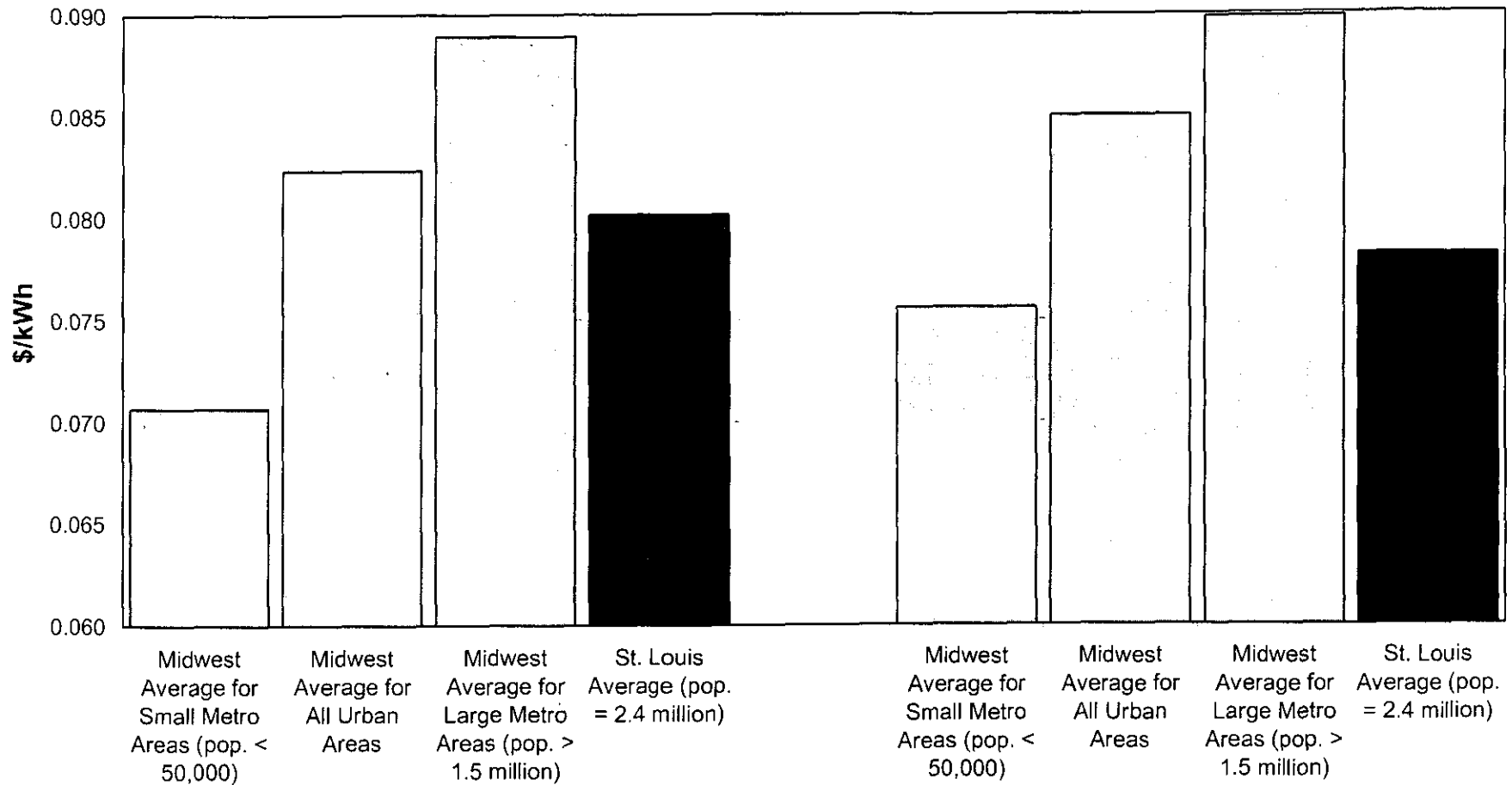
Schedule 2-2: Consumer Electricity Prices by Size of Metro Area -- U.S. and Midwest Averages 1998-2001
 (Based on Monthly Consumer Price Surveys Reported by the Bureau of Labor Statistics)



Notes:

- 1 - BLS data based on monthly surveys of 10 residential electricity bills per metropolitan area.
- 2 - St. Louis Metro Area includes some counties not served by Ameren. Rates do not include seasonal discounts or EARP sharing credits.
- 3 - Data for St. Louis for 1998 to 2001 are obtained by extrapolating 1997 data using the annual growth rate of the CPI electricity index for the city of St. Louis.
- 4 - Source: www.bls.gov/data.

Schedule 2-3: Average Consumer Electricity Prices for St. Louis and Midwest by City Size
 (Based on Monthly Consumer Price Surveys Reported by the Bureau of Labor Statistics)



7/1994-6/1995

7/2000-6/2001

Notes:

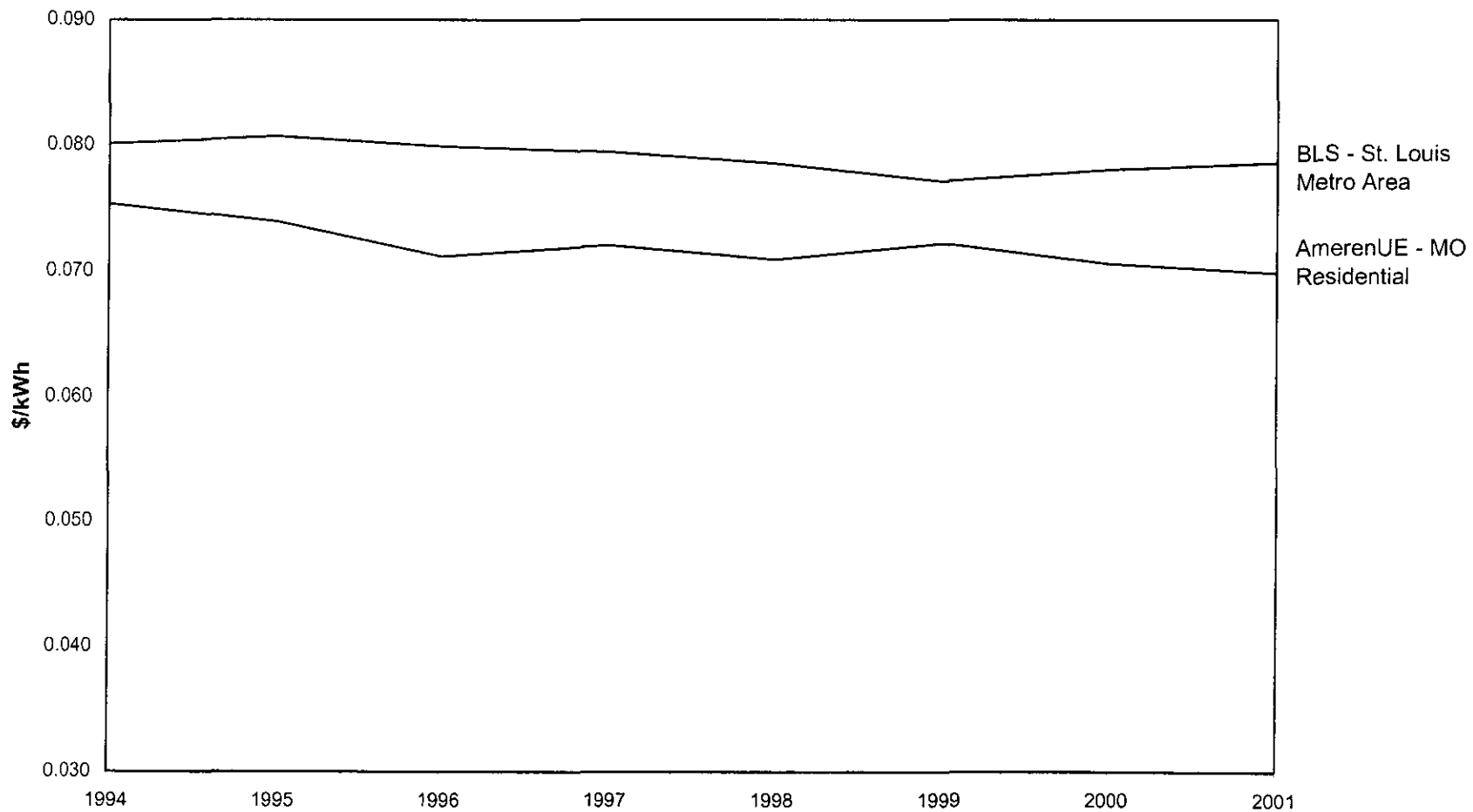
1 - BLS data based on monthly surveys of 10 residential electricity bills per metropolitan area.

2 - St. Louis Metro Area includes some counties not served by Ameren. Rates do not include seasonal discounts or EARP sharing credits.

3 - Data for St. Louis for 1998/99 to 2000/01 are obtained by extrapolating 1996/97 data using the annual growth rate of the CPI electricity index for the city of St. Louis.

4 - Source: www.bls.gov/data.

**Schedule 2-4: Comparison of BLS Electricity Prices for the St. Louis Metro Area and
AmerenUE Missouri Residential Rates**



Notes:

- 1 - AmerenUE - MO rates are net of EARP sharing credits but including gross receipt taxes.
- 2 - BLS data based on monthly surveys of 10 residential electricity bills per metropolitan area.
- 3 - St. Louis Metro Area includes some counties not served by Ameren. Rates do not include seasonal discounts or EARP sharing credits.
- 4 - Data for St. Louis for 1998 to 2001 are obtained by extrapolating 1997 data using the annual growth rate of the CPI electricity index for the city of St. Louis.
- 5 - Sources: St. Louis Metro Area data - www.bls.gov/data. AmerenUE data - Edison Electric Institute.

Schedule 2-5: CPI Subcategory Indices for the St. Louis Metro Area, 1994-2001

CPI Subcategories	Relative Importance of Category	CPI Subcategory Index								Percent Change	
		1994	1995	1996	1997	1998	1999	2000	2001	1994 - 2000	1994 - 2001
Food and beverages	16.39	144.0	146.9	151.2	155.0	158.4	161.9	166.8	169.3	+15.83%	+17.57%
Housing	40.52	136.7	139.5	142.6	145.5	147.0	149.0	155.0	161.2	+13.39%	+17.92%
Shelter	31.04	149.8	156.0	159.4	162.4	165.1	168.1	172.1	176.8	+14.89%	+18.02%
Fuels and utilities	4.93	119.8	116.9	123.0	123.9	123.5	122.5	136.1	150.1	+13.61%	+25.29%
Household furnishings and operations	4.55	122.0	120.8	120.1	124.6	124.0	126.2	132.5	136.9	+8.61%	+12.21%
Apparel	4.24	125.1	119.2	122.2	123.8	126.2	123.5	120.9	120.3	-3.36%	-3.84%
Transportation	16.64	129.2	136.0	141.8	143.8	138.4	141.7	150.6	151.5	+16.56%	+17.26%
Medical care	6.00	201.7	210.0	218.4	226.4	233.9	245.7	256.8	268.2	+27.32%	+32.97%
Recreation	5.91	N/A	N/A	N/A	100.0	102.0	104.3	103.2	105.9	N/A	N/A
Education and communication	5.40	N/A	N/A	N/A	100.0	102.4	103.9	103.7	105.2	N/A	N/A
Other goods and services	4.91	174.0	180.4	186.3	193.2	207.7	219.7	228.4	240.4	+31.26%	+38.16%
All items	100.00	141.3	145.2	149.6	152.9	154.5	157.6	163.1	167.3	+15.43%	+18.40%
All Nondurables	30.34	135.2	136.0	141.7	144.7	145.7	150.7	158.8	160.8	+17.46%	+18.93%
All Services	59.38	151.8	158.4	162.9	166.8	169.5	172.8	179.0	186.0	+17.92%	+22.53%
All Energy	6.58	103.3	100.6	112.1	111.6	103.1	106.5	128.5	136.1	+24.39%	+31.75%

Note: Relative importance of category based on the U.S. city average for CPI-Urban consumers, December 2001.

Source: U.S. Bureau of Labor Statistics - www.bls.gov/data.