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Transcript Exhibit(s)

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EXHIBIT
S-1
admitted

Testimony of Dr. Kenneth Rose
Summary

The Staff believes that as competition in generation develops, the competitive market will provide a more accurate and objective basis to determine the value of generation assets. The fair value standard in Arizona is meant to mimic a competitive market and allows the Commission to use a valuation method that most closely and accurately approximates a market value. The Staff does not accept the argument there is now or in the past a contract obliging the people of Arizona to pay for uneconomic costs. The term regulatory compact, properly understood, does not refer to an implied, implicit, or explicit contract. The Staff does not believe that the "social compact" is now, or has ever been, a contract guaranteeing the utility a perpetual monopoly, freedom from competition, or full cost recovery.

The Staff believes that allowing recovery of uneconomic costs from customers will have a significant negative impact on the development of a competitive generation market. In particular, there are three ways that recovery can distort a competitive outcome. First, recovery will act as a barrier to entry to and exit from the generation market. Second, recovery of uneconomic costs reduces the incentive to mitigate and reduce uneconomic costs. And third, recovery creates an asymmetry of risk and reward that can distort the competitive market. In general, the more uneconomic costs that are recovered, the greater the distortion of the market.

In a competitive market, inefficient and obsolete practices and firms are either eliminated and replaced with more efficient and superior firms or forced to redirect their efforts to become more efficient and better managed. Overall this results in society's limited resources being used in the most productive manner. This limits waste and strengthens the overall economic health of the country. "Bailing out" a firm that faces possible losses hampers this screening process of a market economy. As a result, recovery of uneconomic costs reduces overall economic efficiency and impedes the development of a competitive generation market.

There are three general types of uneconomic costs: (1) costs related to the generation of electricity, or "production costs," (2) "regulatory assets" that are currently carried on the utility's books, and (3) public-policy obligations that a utility may have been required to support by state or federal law or regulation. Only the first two are of major importance in this proceeding.

Of the several ways to estimate the first type of uneconomic costs, potential production costs, the Staff believes the "top-down" approach is a satisfactory approach. This approach projects the net present value of the difference between the generation revenues that would be received if traditional regulation continued and the projected revenues expected with competition. However, the Staff believes that this approach is only appropriate for estimating the size and direction of uneconomic costs of affected utilities in Arizona. The result of the analysis should not be used to determine an amount of uneconomic cost that should be recovered from customers. The Commission should decide the amount of "transition revenues," if any, that are needed to meet predetermined criteria set by the Commission.

With respect to recovery of regulatory assets, Staff believes that post-in service Allowance for Funds Used During Construction (AFUDC) should generally be classified as production assets for purposes of the top-down approach. This is because AFUDC is indistinguishable from other plant costs, and revenues from plant are production revenues that can be recovered through the market. In addition, regulatory assets pursuant to FAS 109 should be classified as production costs as well. These regulatory assets are customer receivables for future income taxes. Regulatory assets that should be specifically considered for recovery are those, not otherwise dealt with above, which were explicitly created and booked as a direct result of an entry or order of the Commission.

Since the recovery of uneconomic costs distorts the development of a competitive market, the time frame for recovery should be as short as possible. The Staff recommends that, if recovery is allowed, the recovery time frame, or transition period, be five years or less. Any allowed transition revenues should be recovered through a "non-bypassable" customer or "wires" charge. This could be in the form of a surcharge added to the distribution charge for all distribution customers.

The question of whether there should be a true-up mechanism depends on how the Commission addresses the recovery of uneconomic costs. The closer to complete recovery of uneconomic costs the Commission decides to allow, the greater the need for a true-up mechanism. Since there will inevitably be errors in the forecast of uneconomic costs, a true-up is needed to reconcile the difference between the actual amount and the amount recovered from customers and to prevent customers from paying too much. However, the need for a true-up diminishes as less recovery of uneconomic cost is allowed. If the Commission allows only a portion of the uneconomic costs, then there is little need for a true-up mechanism.

The Commission may consider a price cap as a safeguard against the possibility of the components of the unbundled rate totaling more than the old tariff. That is, to ensure that the sum of the generation price, the transition revenues allowed, transmission and distribution charges, and charges for other services does not exceed the customer's former tariff. A price cap or freeze, if used, should only exist for the transition period if uneconomic costs are being collected from customers.

A much more robust incentive to ensure mitigation and reduction of uneconomic costs than any accounting or auditing means is to not allow, and certainly not guarantee up-front, full recovery of uneconomic costs. This would be more consistent with the efficiency goals of moving to a competitive generation market and would be less costly administratively.

Finally, the Staff does not believe that securitization of uneconomic costs is in the best long-term interest of Arizona customers or the development of a competitive market since it results in a significant transfer of risk from the utility to customers.

BEFORE THE ARIZONA CORPORATION COMMISSION

JIM IRVIN
COMMISSIONER-CHAIRMAN
RENZ D. JENNINGS
COMMISSIONER
CARL J. KUNASEK
COMMISSIONER

IN THE MATTER OF THE COMPETITION IN THE PROVISIONS OF ELECTRIC SERVICES THROUGHOUT THE STATE OF ARIZONA)	DOCKET NO. U-0000-94-165

DIRECT TESTIMONY OF DR. KENNETH ROSE

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INTRODUCTION

Q. **Please state your name, address, and qualifications.**

A. My name is Kenneth Rose. I am a Senior Institute Economist at the National Regulatory Research Institute (NRRI), the research institute of the National Association of Regulatory Utility Commissioners and its member state public utility commissions. The NRRI is a research department at The Ohio State University and I work in its Electric and Gas Division. My business address is 1080 Carmack Road, Columbus, Ohio 43210. I received my B.S., my M.A., and my Ph.D. in economics from University of Illinois at Chicago in 1981, 1983, and 1988, respectively. My dissertation thesis was an *Economic Analysis of Electricity Self-Generation by Industrial Firms*.

From February 1984 through June of 1989, I was an Economist at the Energy and Environmental Systems Division of Argonne National Laboratory. There I conducted economic analysis for the United State Department of Energy, the U.S. Department of the Interior, the Bureau of Land Management, the U.S. Department of Commerce, the Census Bureau, the U.S. Army Corp of Engineers, and the Institute for Water Resources. From July of 1989 to the present I have been employed at the NRRI. While working at the NRRI, I have designed, managed, written, and presented studies on numerous public utility regulatory topics. These include competitive bidding for power supply, transmission access and pricing, measuring demand-side management benefits, price-cap implementation, and most recently, the restructuring of the electric utility industry and uneconomic or "stranded" costs.

I have previously presented testimony on electric utility restructuring and stranded costs before the Public Service Commission of Mississippi and the Joint Committee on Electric Utility Deregulation of the General Assembly of the State of Ohio. I have also recently completed numerous reports and articles on electric utility restructuring and related issues such as securitization and uneconomic costs.

Q. **What are the staff's highest priorities among the Arizona Corporation Commission's nine specific stranded cost questions?**

A. The staff's highest priorities are issue #1, should the Electric Competition Rules be modified regarding stranded costs and if so how; issue #3, what costs should be included as part of stranded costs and how should those costs be calculated: and issue #5. should there be a limitation on the recovery time frame for "stranded costs."

Q. **Please state your view on the existence of a regulatory compact.**

A. The term regulatory compact. properly understood. does not refer to an implied. implicit. or explicit contract. Properly understood. the term regulatory compact is a metaphor that refers to the nature of regulation of a regulated monopoly. It does not create binding contractual obligations on the state of Arizona or the Commission. The Commission uses the "fair value" of the utility property in setting rates. The fair value method of valuation is meant to mimic competitive markets. It is appropriate. therefore, that as competition becomes available in the generation sector of the electric industry. that rates based on the competitive market would provide an accurate and efficient valuation of the fair value of the generation plant. This response is based on a non-attorney's understanding of what the regulatory compact is and is consistent with the Arizona Corporations Commission's position in retail electric competition.

The Arizona Corporation Commission Staff (the Staff) is in explicit disagreement with Sean R. Breen when he states on page 3 that the utility's willingness to underwrite long-term investments and commitments relied on a regulatory regime which provided the utility with *an ability* to recover its costs and earn a reasonable return on and of its investments through Commission-prescribed rates. As social policy changes in light of changed circumstances, the so-called regulatory compact also changes. To the extent that the regulatory compact exists. not as a contract, but solely as a metaphor of how we regulate regulated utilities, a utility is only allowed *an opportunity* to recover its costs and earn a reasonable return on and of its investments.

The Rules and the method of stranded cost recovery that is suggested elsewhere in this testimony do not break or violate the regulatory compact, but rather redefine and modify it as a matter of state public policy during a transition period to greater competition in the electric industry. In other words, the metaphor of the social compact is now appropriately being rewritten b Rules. Nevertheless. the opportunity to recover costs and earn a reasonable return on and investments still exists under the Rules. We must be clear that the social compact is not now. nor has it ever been a contract guaranteeing the utility a perpetual monopoly. freedom from competition.

or full cost recovery. No argument can be made that there is now or was in the past a contract obliging the people of Arizona to pay for uneconomic costs.

Q. **Can you elaborate on your economic interpretation of the "regulatory compact"?**

A. A central problem in the regulation of monopoly firms has been how to fairly value the assets and compensate for costs the regulated company incurs. It is well established that states have the authority to change the way utility assets are valued and the manner in which costs are recovered from customers. This right of a state to change the way utility assets are valued has been upheld by the U.S. Supreme Court on several occasions.[1] However, valuation must be based on a reasonable standard and cannot be arbitrary or capricious. The Staff believes that a competitive market provides a means to determine the fair value of utility assets and control costs that is not arbitrary or capricious. The market provides a better means to discipline costs of generation suppliers than regulation alone at ensuring that investment decisions and expenditures are economic and in the public interest. Of course, states are free, at their discretion, to provide compensation for uneconomic assets as some states have done. But it is not a constitutional requirement as is often claimed.

It is important to note that the current regulatory process developed over the last several decades was intended to act as a surrogate for competition, albeit an imperfect one, since competition itself was viewed as impractical. The primary benefit to the public from regulation was that it was necessary to avoid monopoly pricing that would likely occur with no regulation. The process of rate cases, prudence reviews, used and useful tests, automatic fuel and other expenditure pass-throughs etc. were all intended to mimic a competitive market. It was not a perfect substitute for competition. Because of an asymmetry of information between the regulated firm and the regulator, as a practical matter, regulators simply cannot collect all the necessary information needed to determine a price

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[1] The most recent case was *Duquesne Light Co. et al. v. Barasch et al.* in 1989. In footnote number 10, the Court stated that a "rigid requirement of the prudent investment rule would foreclose hybrid systems. . . .[and] would also foreclose a return to some form of the fair value rule just as its practical problems may be diminishing. The emergent market for wholesale electric energy could provide a readily available objective basis for determining the value of utility assets."

for a utility's services equivalent to a competitive market. This is the reason for after-the-fact reviews of utility decisions— to give utilities an incentive to make careful decisions similar to a competitive firm *and* protect ratepayers from rate-base padding and shoddy management. This was intended to be a consumer safeguard, not an unfair standard of perfection imposed on the company.

Q. **Did the obligation to serve limit affected utilities' investment discretion?**

A. The Staff believes that an obligation to serve is not sufficient, in itself, to constitute proof of a lack of utility discretion. This obligation was not an obligation imposed by the State that bound ratepayers to the utility. *The Staff believes that there never was nor is there now a concurrent obligation to buy on the part of customers of the utility.* If there had been, utilities would have had the right to charge industrial customers when they switched to self-generation or required residential or other customers that relocated to a new area to pay for their "share" of their "obligation." Another obligation utilities had in the state is an obligation to charge just and reasonable rates. As noted the Staff finds that a competitive market is a superior means to determine what just and reasonable is and what is in the public's best interest. The Staff does not believe that because an investment is placed in rate base or a cost is allowed to be recovered, automatically means that recovery is required.

This does not mean that all claims for recovery should be rejected by the Commission. Rather, it means that the Commission has the ability and authority to examine investments and costs and decide whether recovery is warranted based on the history of an asset and possible future effects on the development of a competitive generation market. For example, the Commission should consider whether the utility had the discretion when deciding on a particular investment or whether it was imposed on it by the state. In general, however, but not always, utilities were given discretion on how to meet demand. If it could clearly be shown that a utility lacked decision making discretion, then recovery may be appropriate.

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Question number 1

Q. Should the Electric Competition Rules be modified regarding stranded costs, if so, how?

A. The Staff recommends that the Electric Competition Rules be modified to reflect the Commission's broad discretion and authority to address potential "stranded cost." The Staff rejects the idea that *all* potential competitive losses of "affected utilities" must be recovered from customers without regard to the circumstances of a affected utility's investments or expenditures

It is our recommendation that Rule 14-2-1607 be modified so that "stranded cost" recovery is limited to minimize the impact of recovery on the effectiveness of competition. There should be no guarantee of stranded cost recovery. Rather the opportunity to recover stranded costs should be the result of utility efforts to be more efficient. Proposed language is provided as per attachment 1.

Q. What are the important economic concerns that you would like to address?

A. There are several economic concerns that have been raised in testimony and elsewhere that the Commission should consider. The uneconomic cost recovery issues addressed below are the risk/reward symmetry, opportunism by the state, economic efficiency, and the development of a competitive generation market and whether recovery distorts its development. Each of these issues is now discussed in detail.

Q. Is there a risk symmetry under regulation that is being violated if there is no recovery of uneconomic costs?

A. The testimony of Kenneth Gordon (on behalf of Tucson Electric Power Company) argues that there is a symmetry between risk and reward that exists with traditional regulation. Dr. Gordon states

> If the investment turns out to be successful, the company's shareholders are allowed to earn no more than the cost of capital in return, which means in effect that ratepayers receive the cost savings or similar benefits of the good investment. On the other hand, if the investment turns out to be unsuccessful, shareholders are not penalized--ratepayers remain responsible for covering its costs. (Lines 9 through 13, page 8)

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In effect, Dr. Gordon is asserting that a shareholder's investment in a utility is riskless. observation alone, this can be shown to be simply incorrect. First, the fact is that shareholders have been penalized in the past for bad investments. It is central to effective regulation that regulators monitor and disallow recovery of costs that are imprudent or not "used and useful." During the late nineteen-seventies and early nineteen-eighties, there were many disallowances of utility costs, primarily nuclear investments. This is the means that regulators developed to mimic a competitive outcome and avoid deliberate rate-base padding or simple lack of vigilance by utility management.

A second observation is utility cost-of-capital. If the capital market believed that utility investments were riskless, then the cost-of-capital of utilities would approximate the U.S. Government's Treasury Bill rate. In fact, utility costs-of-capital today vary in a similar way that competitive firms vary with respect to expected future competitiveness of the firm. Investors judge the future relative competitiveness of utilities among many other factors (other factors include future interest rates, inflation, and technological change) that will affect the financial health of the com[illegible]y and the soundness of their investment. This judgment is reflected in the cost-of-capital that re[illegible]ts in the capital market. This suggests that utility investors are compensated for the risk that some investments may turn out to be poor decisions.

Indeed, it is a criticism of traditional ratebase/rate-of-return regulation that it is *asymmetrical*,[2] the opposite of Dr. Gordon's assertion. The argument was that if the utility makes a good investment, investors are limited to received only the allowed rate-of-return. If the investment turned out to be a bad one, investors were penalized.

Dr. Gordon is correct when he asserts that the treatment of investment risk and reward in a competitive market is symmetrical. However, the Staff believes that allowing uneconomic cost recovery will result in less symmetry of risk and reward in the developing competitive market. The reason for this is explained in more detail in the answer to the question on the effect that recovery will have on the development of a competitive market.

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[2] A. Lawrence Kolbe and William B. Tye, "The *Duquesne* Option: How Much 'Hope' Is There for Investors in Regulated Firms?" 8 *Yale Journal on Regulation*, 113 (1991).

Q. Is changing to a competitive market to value utility assets opportunism?

A. No. If a state were to switch its method of valuation back and forth when it benefitted ratepayers or did so to simply penalize stockholders, then this clearly would be opportunism. The intent behind the restructuring of the electric industry is not to punish utilities for any decision they made, but to improve the incentives to minimize costs over what has occurred under regulation. The Staff disagrees with Dr. Gordon (lines 20 through 23, page 8) that the state cannot change the way assets are valued without compensation and to do otherwise would be opportunism. States have changed the way utilities were regulated several times in the past. For example, changing from reproduction-cost rate-base valuation to original cost or disallowing intangible assets in rate base (such as good will or franchise value). Also, federal, state, and local governments change tax laws and land use policies, and other industries such as airlines and trucking were deregulated usually without providing compensation to potential losers as a result of the policy change.

The Staff believes that moving to a competitive generation market, in effect moving to a market valuation of assets, will provide a superior means of assessing the fair value of assets and judging the appropriateness of costs. This will undoubtably mean that there will be winners and losers as a result of the change, but this cannot be construed as arbitrary and capricious.

Q. Please provide your definition of "stranded costs"?

A. "Stranded costs" is an issue that has emerged as the electric utility industry is being restructured by introducing competition at the generation level. These costs are defined as costs incurred by a utility to serve its customers that were being recovered in rates but are no longer recoverable due to the availability of lower-priced alternatives that have replaced the utility supplied power. The Federal Energy Regulatory Commission and every state that has considered competition in generation has addressed this issue is some manner. These costs that are called "stranded" are more accurately described as uneconomic since these costs are found by the workings of a competitive market and not by a government entity. Of course, not all utilities have uneconomic costs and not all utility costs are uneconomic. This depends on the working of the market. If the market price is sufficiently high, then uneconomic costs decline or are even eliminated. As the market price falls, uneconomic cost will increase. A problem that policy makers face today is that it is not known exactly how the generation market will develop. and hence the extent o. .e uneconomic cost problem is likewise unknown.

Q. How are uneconomic cost treated in a competitive market?

A. "Stranded costs" or uneconomic costs of a utility is exclusively a regulatory phenomenon. There is no direct analogy to private and unregulated markets or any economic textbook definitions of these costs with suggestions on how they should be treated. In a competitive market. any obsolete or uncompetitive plant and equipment costs (or sunk costs) are disposed of at market value. and any difference between market value and book value is absorbed by the firm's shareholders or owners (and, to a limited extent, taxpayers because of the loss can be used to offset taxable income). This results in lower earnings, which the shareholders or owners of the firm are willing to endure if there is an expectation of earning an adequate return on their investment later. Alternatively. the firm simply goes out of business and its assets are sold off.

Obviously, many do not receive the full amount owed or invested. This is the risk ' ey undertook to earn a return on their investment. These costs cannot be passed through to custo..ers since, in the competitive market, firms can only charge the market price. A firm that charges a price above market price will lose customers and be driven out of business by more efficient firms. Investors, of course, only invest if they believe that they will receive the expected return. Thus, there is a direct relationship between the return on investment and the probability of a loss or the investment's relative risk. A relatively higher return is required for riskier investments. while lower risk investments pay a lower return.

In a dynamic competitive market economy, assets become obsolete and are abandoned regularly. An important function of a market economy is that inefficient and obsolete practices and firms are either eliminated and replaced with more efficient and superior firms or forced to redirect their efforts to become more efficient and better managed. Overall this results in society's limited resources being used in the most productive manner. This limits waste and strengthens the . .l economic health of the country. Rarely is there a third party to "bail out" a firm that faces p. e losses and financial ruin. Indeed. doing so only hampers this screening process of a market economy. This process is inhibited when recovery of uneconomic costs is allowed. The result is that recovery impedes the development of a competitive generation market and reduces overall economic efficiency.

The main economic argument for permitting more competition for electric generation is that it encourages *dynamic* economic efficiency. Competition encourages dynamic efficiency by motivating utilities to take actions that make it more competitive. This includes closing inefficient plant, making new investments that improve the overall competitiveness of the company, reducing their operating costs, expanding into new markets (both geographic and new products), and taking other actions to improve their competitive position. Utilities across the country have already been lowering prices to retain industrial customers and municipalities that border a neighboring utility with lower rates. Industrial and large commercial customers, with the added option of self-generation, have also been negotiating lower rates.

Q. If "stranded cost" recovery is allowed, what effect will it have on the development of a competitive market?

A. Requiring recovery of uneconomic cost from customers will have a negative impact on the development of a competitive generation market. In particular, there are three ways that recovery will distort a competitive outcome. First, a recovery surcharge will act as a barrier to entry to and exit from the generation market. Competition requires that competitors such as new independent suppliers and other utilities are able to compete on a equal basis with the incumbent utility. This means no special advantages are given to the incumbent. In fact, the incumbent utility will already have an advantage in terms of name recognition, established ties with its current customers, and, in most cases, sunk investment that has been substantially recovered. This also means that entrance into the incumbent utility's territory by alternative suppliers is not inhibited in any significant way. Allowing recovery of uneconomic costs, however, provides both an advantage for the incumbent utility and makes it more difficult for alternative suppliers. This does not mean that no one will enter, only that there will be less entry than without the barrier.

In addition, inefficient suppliers are encouraged to continue to operate inefficient plants. In this way recovery of uneconomic costs acts as a barrier to exit from the market when it would otherwise be economic to do so. This is related to the second problem: recovery of uneconomic costs reduces the incentive to mitigate and reduce uneconomic costs. This lack of incentive is often referred to as the moral hazard problem. A moral hazard can be created when, for example, a government agency, usually inadvertently, encourages firms or individuals to act in a manner that is not in the general public's best interest. Assurance of recovery of uneconomic costs creates such a hazard. Simply put, a firm that is given assurances that recovery will be forthcoming will not be as adamant about reducing costs and minimizing potential uneconomic costs. It will also be less aggressive about expanding into new market areas or retaining existing customers if it believes that it will be compensated for its losses.

Finally, recovery of uneconomic costs can distort the competitive market because of an asymmetry of risk and reward that is created. In contrast to Kenneth Gordon's testimony (lines 18 through 19, page 8), with recovery, an affected utility is compensated for investments that turn out to be uneconomic; but for utilities that have competitive gains, there is no mechanism being proposed to pay the gains back to ratepayers. When calculating uneconomic costs, it is good practice to determine the *net* amount by offsetting losses with the gains (see answer to question 3). However, if a utility has a net gain, there is no mechanism to return it back to ratepayers. In effect, only losses are compensated. For consistency and symmetry in the future competitive generation market, the Staff is not proposing such a mechanism be created. This is to point out the asymmetry that recovery causes and note that it is more likely that it could turn out "heads the utility wins, tails customers lose."

Combining these factors suggests that recovery of uneconomic costs can distort the competitive market. In general, the more that is recovered, the greater the impact on the market. For these reasons, the Staff recommends that the Commission consider this impact on the market when it makes its decision whether or how much uneconomic cost to allow.

Q. Some have argued that not allowing uneconomic cost recovery will harm economic efficiency. Can you reconcile that claim with your comments?

A. This is thought to be a consequence of "uneconomic bypass." Uneconomic bypass is said to occur when a customer chooses a supply option that is not the lowest cost in terms of long-run marginal cost. This may arise when customers compare the price of an alternative option that is based on marginal cost to the utility's rate that is based on long-run average cost. This possibility was raised by Kenneth Gordon's testimony (lines 11 through 19, page 4). This is a problem that was first raised when, for example, it was noted that an industrial customer may favor self-generation over utility power when the marginal cost of self-generation is compared to the utility's rate. However, the long-run marginal cost of the utility may be lower. From a productive efficiency standpoint, therefore, the supply option with the lowest marginal cost may not be selected. This productive inefficiency is referred to as "uneconomic bypass." Uneconomic bypass is likely to occur only in a very limited circumstances; when the alternative supply option has a marginal cost less than the utility's rate but greater than the utility's marginal cost. There are, in addition, three other problems with this concept.

First, uneconomic bypass has very little meaning in a competitive generation market. Uneconomic bypass may be a problem when the utilities are vertically integrated and the utility's rate reflects the long-run average cost of all services a utility supplies. However, when services are unbundled, generation from different sources will compete based on price or marginal costs. Customers that choose an alternative supplier will be required to pay for distribution, transmission, and other system charges. This isolates the generation and should avoid the uneconomic bypass problem since suppliers will be competing on a marginal cost basis.

Second, related to the problem of creating a barrier to entry and exit already discussed, recovery of uneconomic costs will prevent *economic* bypass from occurring. If a customer has a choice of an alternative supplier where a surcharge for recovery of the utility's uneconomic cost is added to the supplier's price versus the incumbent utility's generation price, the customer may select the utility. However, it is possible that the alternative's marginal cost is lower. For example, assume the utility's marginal cost is 3.5 cents/kWh and the alternative supplier's marginal cost is 2.5 cents/kWh; if the uneconomic cost surcharge is 2.0 cents/kWh, then the customer will pick the utility since the alternative's *apparent* price is 4.5 cents/kWh versus the utility's marginal cost of 3.5 cents/kWh. This is inefficient in terms of productive efficiency because the alternative's marginal cost is lower.

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And third. even if it does occur. it has a minor effect on overall efficiency when comp d to the gain in dynamic efficiency induced by a competitive market. To prevent uneconomic bypass from occurring. the surcharge would have to be set exactly right so that the "correct" supply option is selected. Given the quickly changing nature of a competitive market and the difficultly in determining the correct amount of a surcharge. it is doubtful that an administratively determined surcharge would ever be correct. Moreover. trying to correct an unlikely and relatively small possible efficiency loss from uneconomic bypass is more likely to result in much larger efficiency losses by limiting alternative suppliers' penetration into the generation market.

In short. there will likely be more harm done to the development of a competitive generation market from recovery of uneconomic costs than the possible harm (if it were to occur) from uneconomic bypass.

Q. Please explain your perspective on economic efficiency in more detail.

A. Any attempt to put in place a mechanism to prevent uneconomic bypass will only im de the market's ability to reduce production costs to the minimum possible level. In effect this bec es a self-defeating process; where the process to avoid uneconomic bypass prevents from being met the very condition that it was designed to address. In other words, policies designed to avoid static losses from possible uneconomic bypass only sacrifice the longer-term and more important goal of fostering a dynamic competitive market.

This can be explained by considering that there are two general types of economic efficiency: static efficiency and dynamic efficiency. Static efficiency is achieved when power is generated by the lowest cost sources. Thus, static efficiency requires only economic bypass of the utility's system and no uneconomic bypass. This assumes that the utility's and the alternative supplier's marginal costs are minimized and remain unchanged. In this case, prices and the utility's and its competitors' marginal costs do not shift from their positions and are. assumed to be at minimum costs. However. this is not very realistic since it is expected that the competitive generation market will be ve d and dynamic.

Because of regulation, utilities are likely to have cost inefficiencies. Over time it should be expected that costs would change so that rates and marginal costs will be expected to shift. This can be caused by changes in technology, fuel prices, or regulatory policy. Obviously, it is this last exogenous factor that is now changing. These shifts in the curves over time are caused by dynamic effects. When developing a regulatory policy, therefore, it is important to also consider this second, and in many respects more important type of efficiency.

A key difference between static and dynamic efficiency is the element of time. Dynamic efficiency assumes that the utility's marginal cost can or does change over time or, more importantly, can be induced by policy to change. Competitive markets are by nature dynamic and it is these dynamic effects that are sought in the current electric industry restructuring efforts. Market competitors are driven to innovate and control costs to retain or attract customers (as long as it is or is expected to be profitable). Dynamic efficient regulatory options provide more incentives for the utility to reduce its costs. Utilities can reduce costs by, for example, renegotiating fuel contracts, reducing operation and maintenance costs, or reducing the carrying cost of capital.

In theory, static efficiency requires that only economic bypass occurs. This is a necessary but not sufficient condition for dynamic efficiency, however. While there may be static efficiency, or no uneconomic bypass with production of a given output only from the lowest cost suppliers, this does not mean that there is dynamic efficiency. Although, complete dynamic efficiency would require that static efficiency be achieved. In short, dynamic efficiency is the broader and overall efficiency condition to measure social welfare. Static efficiency would only indicate that production was from the lowest cost producers at a given time.

In practice, these two definitions of economic efficiency are distinct in other ways. Regulators may be able to determine if the lowest cost producer is supplying the power, by comparing *known* costs, however, determining whether this is dynamically efficient would probably be impossible. Dynamic efficiency is found through the workings of the market where customers are choosing their supplier and producers are seeking every opportunity to reduce costs. For example, any action that limits the number of competitors may appear to ensure economic efficiency, but may remove competitive pressure on the utility to control costs. Also, regulators may impose access, entrance, or exit fees, in the interest of static efficiency, but could interfere with the market finding the dynamic efficient solution. This is an inescapable (and perhaps paradoxical) outcome

— attempts by the regulator to "correct" for static inefficiencies would only harm long-run ove efficiency.

Over time, it should be expected that a competitive market would lead to the utility's marginal costs being reduced to the market price. This market price would reflect a combination of the marginal costs of utilities, alternative suppliers, and so on. To be dynamically efficient, it is required that the market price of electricity be the marginal cost of all suppliers. This also has the effect of reducing the amount of uneconomic costs over time.

Q. Have others discussed this issue of economic efficiency?

A. Yes. Kahn separates the concepts of static and dynamic efficiency and examines a case where dynamic efficiency gains may outweigh static efficiency losses. In a discussion of the merits of allowing a utility to charge marginal cost for a service, he points out that while it may be efficient "in the static sense" to allow the utility to drive out its rivals, there may be some "dynamic loss if the result is the elimination of those competitors."[3] He adds that preserving the competitors (by setting a price above marginal cost) would provide a "stimulus" to the utility's performance and "might in the long run contribute sufficiently to a greater and more varied innovation, to continual improvements in the industry's service and efficiency to outweigh the static welfare loss involved in keeping it [the competitor] alive."[4] However, restricting competition in this way, he states, would require "a very heavy burden of proof." Of course, for electric utilities at this time, the debate on uneconomic costs is not whether competitors should be supported, but whether the utility should be allowed to recover uneconomic costs. Because, allowing recovery would restrict the competitive outcome, the "heavy burden of proof" is on those who argue for recovery. Restricting the market's outcome (and its dynamic benefits) by supporting uncompetitive utilities (in the interest of static efficiency) only serves to delay the benefits of competition for consumers and hobbles potential

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3. Alfred E. Kahn, *The Economics of Regulation: Principles and Institutions. Vol. I, Economic Principles* (Cambridge, MA: The MIT Press, 1988), 176. This discussion concerned AT&T's ability to, at its long-run marginal cost, drive out most or all rivals.

4. Ibid., 176-77.

competitors. The dynamic efficiency gains from reduced costs, innovation, and lower prices to consumers, while difficult to predict, almost certainly outweigh any loss in static efficiency.[5]

Wenders attacks the entire notion of uneconomic bypass and questions whether it actually exists. In his view, the notion of uneconomic bypass "misses the whole disequilibrium feature of the competitive *process*. Competition is a process by which economic efficiency, in a static equilibrium sense, is brought about"[6] (emphasis in the original). Any "uneconomic" competition is "the most efficient means of bringing about the economic end" and "in the real world. . . . competition by allegedly inefficient providers happens all the time, and in fact in the long-run improves economic efficiency."[7] He adds that the "'cost' is not only noneconomic and sunk: It is a fiction created by the regulatory process to begin with — a regulatory process that has resulted in the massive distortions to economic efficiency."[8]

On the issue of regulators attempting to correct or prevent the loss from static inefficiency, he notes that it would "entrench the existing efficiency-distorting regulatory mechanism and deflect the corrective forces of competition."[9] Moreover, to suggest that the regulator "is suddenly going to come up with a costing methodology that solves the uneconomic bypass problem in the litigious atmosphere of a regulatory environment is naive."[10] These practical problems of "entrenchment" of inefficient regulatory costs and the measurement of the inefficiency are serious limitations that cast significant doubt on the practicality of attempting to prevent uneconomic bypass.

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[5] Uneconomic bypass will likely only occur in a limited range and the loss in efficiency relatively small. The potential loss from "insufficient" bypass, on the other hand, could occur over a much wider range and be much larger.

[6] John T. Wenders, *The Economics of Telecommunications: Theory and Policy* (Cambridge, MA: Ballinger Publishing Company, 1987), 259.

[7] Ibid., 260.

[8] Ibid., 261.

[9] Ibid.

[10] Ibid., 262.

Q. It has also been asserted that allowing recovery of uneconomic cost does not distc competitive market. Do you agree?

A. No. Typically when this claim is made, it is already presumed that recovery will be allowed (or should be allowed). In this view, the collection of the uneconomic costs through a customer surcharge is simply like a tax that is collected from all suppliers. This will reduce the amount of the quantity supplied from alternative sources, just as a tax will raise the supply schedule and reduce the equilibrium quantity and raise the price. It will in fact change the outcome from what would occur under competition without recovery. The proper comparison, therefore, is how the competitive market is changed compared to a market with no recovery. When it is presumed that recovery must be granted to start with, this is a prior assertion based on the analyst's view that recovery of uneconomic costs is justified: it then ceases to be an analysis of just economic efficiency.

Q. Is there an alternative to simply calculating the amount of uneconomic cost and allowing some portion of recovery?

A. The term "stranded cost," while now commonly used, is a misnomer. What is actually m[illegible]t by the term is to determine the amount that the utility's generation costs exceeds the market price for generation. An estimation of the production loss due to competition is usually attempted before the start of retail competition for generation. Since, at this point in Arizona, there are currently no actual "stranded costs," the focus is on predicting utility loss in the future competitive market or *potential*stranded costs. Another aspect of the term "stranded cost" that can also be misleading is that it suggests that costs are fixed and permanent and that the utility can do little to reduce the potential competitive losses.

A more appropriate way to describe these competitive losses and the revenues a utility will be allowed to collect from customers is "transition revenues." When the focus is shifted to the temporary revenues the utility will receive, the emphasis is shifted to determining the amount necessary to meet specific criteria set by the Commission, if the Commission decides to recovery. For example, the Commission could determine the amount necessary to maintc financial stability of the utility. This may be an amount to pay the company's debts and, perhaps, a reduced return. This changes the focus from rate base and expense items to the maintenance of the financial integrity of the utility. This would not necessarily maintain the same level of profitability as under regulation. In this case, the Commission estimates the market revenue and any additional revenues required to maintain the financial integrity of the company for each year in the transition period. This would require detailed analysis of the utility's books and records by the Commission. The utility would only be allowed these revenues during the transition period.

As is discussed in response to question 7, if this "transition revenue" amount is less than the estimated uneconomic cost, then the Commission may consider determining an amount up front and not adjusting it throughout the transition period. The amount can be reduced each year during the transition period and be zero after the transition period.

If it is decided by the Commission to allow recovery, the Staff prefers a transition revenues approach.

Q. **Has any other state adopted or proposed such an approach?**

A. Yes. There is a proposal under discussion by Ohio state legislators. No state, however, has adopted such an approach.

Q. **Please summarize your understanding of how economic efficiency is harmed by recovery of uneconomic costs?**

A. Recovery of uneconomic costs distorts the development of a competitive generation market and reduces overall long-term economic efficiency. This occurs by making it more difficult for alternative suppliers to compete with the incumbent utility, discourages mitigation of uneconomic costs by utilities, and provides an unfair advantage to incumbent utilities. Of far more long-term importance to the state than avoiding uneconomic bypass is the development of a truly competitive market. This is best done by not favoring or hobbling one supplier over another.

Question 2

Q. **When should "Affected Utilities" be required to make a "stranded cost" filing pursuant to A.A.C. R14-2-1607?**

A. Sixty days from when the Commission issues an Order from this Proceeding.

. . . .

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Question 3

Q. What costs should be included as part of "stranded costs" and how should those costs be calculated?

A. There are three general types of "stranded costs" that states have been considering when examining electric restructuring. They are: (1) costs related to the generation of electricity, or "production costs," (2) "regulatory assets" that are currently carried on the utility's books, and (3) public-policy obligations that a utility may have been required to support by state or federal law or regulation. For most utilities in the country, the first category is the largest. Unfortunately, it is also the most difficult to calculate with precision. The second two categories of stranded costs are usually determined administratively by examining the utilities books, contracts, and public policy obligations. It is the Staff's view that the third category of uneconomic costs is not a major problem in Arizona.

There are several ways to estimate potential production "stranded costs." While no m[illegible]d is ideal, they can be evaluated in terms of tractability and ability to evaluate the results. The two basic forms of estimation are asset-by-asset or "bottom-up" approach and the lost revenue or "top-down" approach. The bottom-up approach can use either an estimate of the market value of the utility's assets or assets can be sold at auction to determine their value. Estimating the market value for all generating assets is time consuming and very speculative. Determining the value in an auction may provide a more unbiased value, but would, of course, require divestiture of utility generation assets. The bottom-up approach requires considerable investment in time, both in terms of time to conduct the analysis or in terms of time needed to sell the assets and resolve the issue.

The top-down approach projects the net present value of the difference between the generation revenues that would be received if cost-based regulation continued and the projected revenues expected with competition. Obviously, this also requires a great deal of speculation and numerous assumptions as well, but the data requirements are less than the bottom-up ap[illegible]. Another advantage to the top-down approach is that impacts from changes in the assumption[illegible]e utility's system as a whole can be seen more readily. Also this method, by definition, nets the above and below market assets when it is calculated (since both market and regulatory total revenues are considered). For these reasons the Staff believes that, while not ideal, the top-down approach is a satisfactory alternative.

The Staff believes that this approach is only appropriate for estimating the size and direction of uneconomic costs of affected utilities in Arizona. The result of the analysis should not be used to determine an amount of uneconomic cost that should be recovered from customers. The Commission should decide the amount of transition revenues, if any, that are needed to meet the predetermined criteria discussed previously.

Q. **What is the recommended calculation methodology and assumptions made including any determination of the market clearing price?**

A. As noted, the Staff believes that there are many important assumptions that will have considerable impact on the estimate of uneconomic costs. The impact of the assumptions should be explicitly analyzed and discussed when the results are presented to the Commission.

Specifically, the Staff recommends that when the top-down approach is used to estimate affected utilities uneconomic costs, several assumptions should be discussed in detail and a sensitivity analysis conducted on their impact on the outcome. The projection of the market price for power in the region has a particularly significant impact on the estimate of uneconomic costs. For example, a relatively small increase in the forecasted price, fractions of a cent per kilowatthour, can significantly lower or even eliminate the estimated amount of uneconomic cost. The Staff, therefore, recommends that a range of prices be analyzed, using at least two price scenarios. Also, these price scenarios must reflect the projection of a *retail* price that end-use customers will likely see. It should not be based on a projection of wholesale prices that wholesale and other large customers face in the spot market.

Other important assumptions that should be discussed include:

- Retail demand— assumptions on the future demand for electricity in the area should also be described. Specifically, whether it is believed that there will be an increase, decrease or that demand will remain constant over the period.

- Discount rate — when calculating the net present value of the difference between the regulatory and competitive revenue streams, the affected utility should use several different discount rates to demonstrate the effect. Also, the logic behind the number or numbers used that are believed to be the most appropriate should be discussed.

- Profit— when calculating the regulatory revenue stream. if there is a return investment. such as assuming the current level remains the same throughout the period. it should be stated. Alternatively. this may be implied in the discount rate: if so, this should also be explained.

- Future variable costs— it is expected that affected utilities will be able to reduce their variable production costs over time. This is because. as is often assumed. utilities where not always as vigilant in controlling cost as under cost-based regulation as is likely to occur in a competitive market. Reasonable assumptions of variable cost reductions should be included in the projections and explained.

- Future capital carrying costs— while sunk costs that have already been incurred cannot be reduced. the carrying cost of that capital may be reduced through refinancing of debt or replacing higher cost equity with debt (assuming that a higher level of debt will be permitted with competition).

- Capital additions— any additions to the existing plant that is added. such as refurbishment of existing plants. should be described in detail. This should not include any new plant additions since these cannot be described today as "stranded."

In addition. any other important assumptions that the company deems important should also be discussed explicitly and in detail.

Since competition will be phased in over four years, the estimate of uneconomic costs should only reflect the limited exposure to a possible loss that the company will have during the phase-in period.

Q. **Please describe the Staff's position on the recovery of regulatory assets.**

A. Regulatory assets categorized as post-in service Allowance for Funds Used During Construction (AFUDC) should generally be classified as production costs for purposes of the top-down approach. AFUDC is indistinguishable from other plant costs. Revenues from plant are production revenues or are achieved through mitigation efforts. Therefore, the collectability of AFUDC should be bound up in the overall future competitiveness of the particular plant to which the AFUDC charges are booked.

As was pointed out by Kissinger on page 4 of her testimony, Tucson Electric Power has regulatory assets of $94 million as of December 31, 1996. These regulatory assets represent certain excess capacity costs associated with Springerville Unit 2 that are deferred costs. Although is a regulatory asset on Tucson Electric Power's regulatory books. there is not a corresponding reflected on Tucson Electric Power's financial books. The Company has already taken a financial write-off of these assets. This asset too is a production asset. Since the Company here has already written off the asset for financial reporting purposes. it is only consistent with our suggested general treatment of post-in service AFUDC that revenues from any production assets would be receivable as production revenues or through mitigation efforts.

In addition. regulatory assets pursuant to FAS 109 should be classified as production costs as well. These regulatory assets are customer receivables for future income taxes. FAS 109 assets are deferred tax liabilities where customer receivables for future income taxes are expected. Although the booking of deferred tax liabilities as a regulatory asset reflects general accepted accounting principles, the balance sheets of electric utilities also reflect FAS-109 related "credits" associated with plant. As plant is depreciated over time these asset and credit balances disappear. Further, FAS 109 regulatory assets are bound up in the future productivity and future profitability of the utility as a whole.

Regulatory assets that should be considered are those. not otherwise dealt with above, which were explicitly created and booked as a direct result of an entry or order of the Arizona Corporation Commission. Any other regulatory asset should be viewed as production costs or in connection with mitigation efforts of the electric utility.

Question 4

Q. Should there be a limitation on the time frame over which "stranded costs" are calculated?

A. The time frame over which uneconomic costs are estimated is another important assumption. The maximum is clearly the expected life of the generation assets. Generation assets will likely be retired at different intervals. Thus, when the estimate is made of the regulatory revenues, retiring assets should be removed from the revenue stream. This is usually the point where the original investment is depreciated. As noted, new capital additions should not be factored into the analysis.

Question 5

Q. Should there be a limitation on the recovery time frame for "stranded costs"?

A. Since the recovery of uneconomic costs distorts the development of a competitive market as discussed, the time frame should be a short as possible. The Staff recommends that, if recovery is allowed, that the recovery time frame, or transition period, be five years or less.

Costs, such as nuclear decommissioning costs, which will continue past this transition period, are included in System Benefits Charge calculations and will not be considered part of stranded costs. Staff agrees with APS that nuclear fuel disposal costs should also be part of the System Benefits Charge and not stranded costs.

Question 6

Q. How and who should pay for "stranded costs" and who, if anyone, should be excluded from paying for stranded costs?

A. The allowed transition revenues should be recovered through a "non-bypassable" customer or "wires" charge. This could be in the form of a surcharge added to the distribution charge. This surcharge should be a separate item on customers' bills. To the extent that uneconomic costs or transition revenues are allowed, distribution customers of the affected utility should be assessed the surcharge during the transition period.

Question 7

Q. Should there be a true-up mechanism and, if so, how would it operate?

A. The question of whether there should be a true-up mechanism depends on how the Commission addresses the recovery of uneconomic costs. If the Commission decides to allow recovery of all uneconomic costs, for example, there would certainly be a need for a true-up mechanism. Since there will inevitably be errors in the forecast of uneconomic costs, a true-up is needed to reconcile the difference between the actual amount and the amount recovered from customers. This prevents customers from paying too much. However, the need for a true-up diminishes as less recovery of uneconomic cost is allowed. Therefore, the closer the amount allowed is to the estimate, the greater the chance that the utility will recover more than the actual amount of uneconomic costs and the stronger the need for a true-up. If the Commission allows a portion of the uneconomic costs, then there is diminished need for a true-up mechanism.

Another consideration is the administrative burden. A true-up mechanism will require s by affected utilities and proceedings to determine both the actual amount of uneconomic costs and the amount collected so that reconciliation can occur. This will likely be a lengthy and drawn out process.

An additional consideration is incentives. Determining the amount of recovery up front and allowing an affected utility to retain the proceeds, may provide more incentive to mitigate uneconomic costs. If the utility believes that the difference between the actual and amount recovered will simply be returned to the customer, they will likely have a diminished incentive to mitigate.

The tradeoff between accuracy and ease of implementation, and the diminished incentives are strong argument against having a true-up mechanism. Also, the Staff believes that there is no need for a true-up mechanism if the Commission decides to allow transition revenues that is less than the amount of estimated uneconomic costs.

Question 8

Q. **Should there be price caps or a rate freeze imposed as part of the development of a stranded cost recovery program and if so, how should it be calculated?**

A. The Commission may consider a price cap as a safeguard against the possibility of the components of the unbundled rate totaling more than the old tariff. That is, the sum of the generation price, the transition revenues allowed, transmission and distribution charge, and charges for other services does not exceed the customer's former tariff. A price cap or freeze, if used, should only exist for the transition period while the transition revenues are being collected from customers.

Question 9

Q. **What factors should be considered for "mitigation" of stranded costs?**

A. To be consistent with dynamic efficiency and less costly administratively, the best way to encourage mitigation would be to simply not allow, and certainly not to guarantee up-front, full recovery of uneconomic costs. This provides a much more robust incentive to reduce uneconomic costs than any accounting or auditing means. This would also be more consistent with the treatment of uneconomic costs in other deregulated industries.

The Federal Energy Regulatory Commission (FERC) was one of the first to ask this question. They asked "how should the Commission ensure that the utility takes all reasonable steps to mitigate its own costs so as to minimize what the customer would have paid? How should the Commission ensure that the utility does its best to sell the power at its highest possible value so as to mitigate the customer's stranded cost liability?"[11] Related to the decreased incentive to reduce costs already discussed, if it is stated up front that utilities will be allowed to recover all uneconomic costs, then it probably cannot be practically ensured that all is being done to reduce the affected utility's uneconomic costs. The reason is that there is no realistic or practical way for any commission (or any other state agency) to examine all available utility costs and options. The utility knows its system, assets, and options better than any state agency can, without spending a great deal of time and money to find the information itself.

Moreover, it is possible that affected utilities, when given assurance up-front, will become more interested in maximizing their uneconomic costs by overstating the amount of uneconomic costs and putting forth little effort to reduce it.[12] For example, it is not unusual to see utility forecasts of market prices much lower than independent analysts' projections which, of course, result in higher uneconomic cost estimates.[13]

Q. **Are there any other issues related to stranded cost the Staff would like to raise?**

A. Yes. The final issue raised here is securitization of uneconomic costs. This is a technique that has been adopted by at least six states so far. The Staff, however, does not believe that this technique is in the best long-term interest of Arizona customers or the development of a competitive market since it results in a significant transfer of risk from the utility to customers.

Briefly stated, securitization refers to the creation of a financial security that is backed by a revenue stream pledged to pay the principal and interest of that security. This device provides utilities an up-front, lump-sum payment from the sale of the security or bond. Securitization requires the creation of a transferrable property right to collect the utility's uneconomical cost from ratepayers

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11. FERC, Notice of Proposed Rulemaking, "Recovery of Stranded Costs by Public Utilities and Transmitting Utilities," 222-23.

12. Robert J. Michaels, letter to the editor, *The Electricity Journal*, 8, no. 2 (March 1995): 86.

13. Compare, for example, the price forecasts by Commonwealth Edison with the Illinois Commerce Commission's or the U.S. Department of Energy's forecasts.

through a collection mechanism, such as a "transition charge" or other "non-bypassable" obligation placed on ratepayers. The property right can be transferred by the utility to a designated trustee. If this option is exercised by the utility, the trustee then issues a security or bond and pays the utility the cash proceeds from the sale of the security in the financial market less transaction costs in exchange for the property right. The cash proceeds the utility receives should equal the discounted present value of the customer charge revenue stream. The utility or distribution company collects the customer charge from the customers and transfers the funds to the trustee that then transfers it to the security holders. The benefits of securitization come primarily from the replacement or refinancing of the utility's existing capital structure of debt and equity with lower-cost debt. Any savings realized from securitization are often required to be given back to retail customers.

The securities are essentially backed by a pledge that the securities will be paid in full, including principal, interest, and financing costs. These securities have a value because of the promise to create and sustain the revenue stream from the customer charge until the debt is paid. California, Pennsylvania, Montana, Illinois, Massachusetts, and Rhode Island have adopted legislation that allows utilities to use this option and other states are considering it.

While securitization can potentially lower the capital carrying cost, there are at least two significant drawbacks for customers. First, to obtain a higher bond rating than current utility debt and realize the lower debt cost, any securities issued would have to be irrevocable and provide assurances that recovery is guaranteed for the life of the bond. Securitization provisions usually contain a true-up mechanism that raises or lowers the customer charge to adjust for changes in the number of customers or demand level. However, the amount initially set as the principal of the bond cannot be changed. This may be a problem if the actual amount of competitive loss is less than the amount forecasted when the principal was authorized. As noted, these estimates are based on dozens of explicit and implicit assumptions used in the analysis, any number of which may turn out to be incorrect. This represents a significant risk for customers who would have no recourse if the loss does not materialize as expected.

A second limitation is that securitization results in a large infusion of cash into the utility. The Commission may be able to direct that the cash be used to buy back equity and reduce debt.

however. in a holding company structure the utility can simply transfer the cash to the hc company. This money can be used in any manner the holding company desires. including using it to restrict competition. This would be another special advantage granted to the incumbent utility and could be anticompetitive.

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

A. Yes.

ATTACHMENT 1

R14-2-1607.B should be modified to read:

"The Commission ~~shall~~ MAY allow recovery of unmitigated Stranded Cost by Affected Utilities. IN ORDER TO BE ELIGIBLE TO RECOVER STRANDED COST, AN AFFECTED UTILITY MUST DEMONSTRATE THAT IT HAS SUCCESSFULLY UNDERTAKEN EFFORTS TO ~~INCREASE ITS EFFICIENCY~~."

MINIMIZE AND REDUCE
ITS UNECONOMIC COSTS.

R14-2-1607.I should be modified to read:

The Commission shall, after hearing and consideration of analyses and recommendations presented by the Affected Utilities, staff, and intervenors, determine for each Affected Utility the magnitude of Stranded Cost, IF ANY; WHETHER RECOVERY IS APPROPRIATE AND, IF SO, THE AMOUNT OF RECOVERY; and appropriate Stranded Cost recovery mechanisms and charges IF RECOVERY IS ALLOWED. In making its determinationS ~~of mechanisms and charges~~, the Commission shall consider at least the following factors:

1. The impact of Stranded Cost recovery on the effectiveness of competition~~,~~ AND WAYS TO MINIMIZE THAT IMPACT;
2. The impact of Stranded Cost recovery on customers of the Affected Utility who do not participate in the competitive market;
3. The impact, if any, on the Affected Utility's ability to meet debt obligations;
4. The impact of Stranded Cost recovery on prices paid by consumers who participate in the competitive market;
5. The degree to which the Affected Utility has mitigated or offset Stranded Cost;
6. The degree to which some assets have values in excess of their book values;
7. Appropriate treatment of negative Stranded Cost;
8. The time period over which such Stranded Cost charges may be recovered. The Commission shall limit the application of such charges to a specified time period;
9. The ease of determining the amount of Stranded Cost;
10. The applicability of Stranded Cost to interruptible customers;
11. The amount of electricity generated by renewable generating resources owned by the Affected Utility.

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Ph.D. Economics, University of Illinois at Chicago, 1988.
Areas of Concentration: Applied Microeconomics and Econometrics.
Thesis: Economic Analysis of Electricity Self-Generation by Industrial Firms. Adviser: John McDonald.

M.A. Economics, University of Illinois at Chicago, 1983.

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PROFESSIONAL EXPERIENCE

7/89 - present Senior Institute Economist, Electric and Gas Division, NRRI, Columbus, OH.

Design, manage, write, and present studies on state regulatory issues. Topics have included competitive bidding for power supply, transmission access and pricing, measuring demand-side management benefits, price-cap implementation, electric utilities and the environment, restructuring of the electric services industry, and stranded costs. Organize and conduct workshops and conferences on regulatory issues for state commissions. Present results of research to commissioners, staff, legislators, utility representatives, consultants, government officials, etc. Interact with the University assisting graduate students in their research and presenting occasional lectures on particular topics of interest.

PROFESSIONAL EXPERIENCE — continued

2/84 - 6/89 Economist, Energy and Environmental Systems Division, Argonne National Laboratory, Argonne, IL.

Conducted economic analyses for the U.S. Department of Energy, the U.S. Department of the Interior, Bureau of Land Management, the U.S. Department of Commerce, Bureau of the Census, and the U.S. Army Corps of Engineers, Institute for Water Resources.

PROFESSIONAL SOCIETIES AND ACTIVITIES

Member of the American Economic Association.

Member of the International Association of Energy Economists.

Member of the National Association of Regulatory Utility Commissioners Staff Subcommittee on Electricity, 1990-present.

Participant in the Keystone Center's Dialogue on State Regulation of Allowance Trading, 1991-1993

Member of New York Mercantile Exchange's Emission Allowance Advisory Committee

Member of the National Association of Regulatory Utility Commissioners Staff Subcommittee on Economics and Finance, 1989/90.
Trustee and Chairman of energy economics session for the Illinois Economic Association, 1988.

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Panelist, "Clean Air Auction Press Conference," held at the Chicago Board of Trade, Chicago, Illinois, March 29, 1994.

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Speaker/Panelist, "Public Utility Commission Policy Choices and the Emission Allowance Market," presented at the Southeastern Association of Regulatory Utility Commissioners Annual Conference, "Charting a Brave New World," Little Rock, Arkansas, June 22, 1992.

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"Land Use Suitability Model," presented at the U.S. Army Corps of Engineers Workshop: Land Use Analysis for Water Resource Planners, Institute for Water Resources, Fort Belvoir, Virginia, March 1989.

EXHIBIT

S-2

admitted

SUMMARY OF REBUTTAL TESTIMONY OF DR. KENNETH ROSE

There are four issues addressed in this rebuttal testimony. First, Staff reiterates its position that while it favors a top-down approach to estimate uneconomic costs, this estimate should only be used to indicate the size and direction of the competitive gain or loss in Arizona. If the Commission decides to allow recovery of production uneconomic costs it should be through a "transition revenue" mechanism discussed in the direct testimony that is based on a specific criteria set by the Commission.

Second, Staff does not believe that the Commission should determine up front a percentage of the predicted uneconomic costs that will be allowed for recovery. There is little economic basis for determining the "correct" percentage. Consequently, it will be difficult to determine and likely result in a protracted process to determine it. Third, some witnesses testified that customers who do not choose an alternative supplier should not have to pay for uneconomic costs. The reason for the concern is that customers that leave the utility will not be required to pay or that a broadly defined transition charge will be added to the current rate. Staff believes that its transition revenue and price cap approach will avoid both these possibilities. This is because all distribution customers will pay the transition charge independent of the supplier and the price cap will ensure that no retail customer pays more than their current rate.

Finally, Staff challenges the view that a sale or auction is the best means to value utility assets for purposes of determining uneconomic costs. An unintended consequence of a sale or auction is that the market price may be higher than without the sale or auction. As a result, the apparent "savings" will be paid back by customers over time in the form of higher market prices. Therefore, this option cannot be justified based on only an argument that it will reduce uneconomic costs. If recovery of uneconomic cost is limited, then the utility will have an incentive to decide voluntarily whether to sell its assets based on the company trying to minimize its uneconomic costs. There may be other reasons to require divestiture of generation assets, but reducing uneconomic costs should not be considered one of them.

BEFORE THE ARIZONA CORPORATION COMMISSION

JIM IRVIN
COMMISSIONER-CHAIRMAN
RENZ D. JENNINGS
COMMISSIONER
CARL J. KUNASEK
COMMISSIONER

IN THE MATTER OF THE COMPETITION IN THE PROVISION OF ELECTRIC SERVICES THROUGHOUT THE STATE OF ARIZONA	)))))	DOCKET NO. RE-00000C-94-165

REBUTTAL TESTIMONY OF

DR. KENNETH ROSE

ON BEHALF OF THE

ARIZONA CORPORATION COMMISSION

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I. TOP-DOWN APPROACH FOR ESTIMATING UNECONOMIC COSTS IS APPROPRIATE.

Q. You suggest the use of a top-down approach for estimation of uneconomic costs. Are **there other witnesses and parties that prefer the use of a top-down approach?**

A. The top-down approach, sometimes referred to as the lost revenues approach is endorsed by a majority of the witnesses that addressed the issue, including Robert Malko, witness for Arizonans for Electric Choice & Competition et al.; Richard Rosen, witness for Residential Utility Consumer Office; Sean Breen, witness for Citizens Utilities; Walter Meek, witness for Arizona Utility Investors Association; Charles Bayless, witness for Tucson Electric Power Company; Dirk Minson, witness for Arizona Electric Coop; Jack Davis and William Hieronymus, witnesses for Arizona Public Service Co.; Alan Propper, witness for Navopache Electric Coop; Ralph C. Smith, witness for the Navy, Department of Defense, and Federal Executive Agencies; Carl Dabelstein, CPA; and Elizabeth Firkins, witness for the International Brotherhood of Electrical Workers.

Q. Does this mean that Staff and these parties are in agreement on this issue?

A. Not necessarily. Staff's position is that the top-down approach is an acceptable approach to *estimate* uneconomic cost, but not for determining the amount for recovery. There are several advantages to the top-down approach. First, while it involves making a considerable number of assumptions and forecasts, it is relatively straightforward and requires less data than asset-by-asset or bottom-up approaches. Second, the top-down approach considers the affected utility's system as a whole and implicitly nets out the uneconomic assets (where the book value is greater than estimated market value) with those assets that are economic (where the book value is less than the estimated market value). This is an appropriate method of estimating the fair value of the generation assets in a competitive market. While this means that there is no asset-by-asset comparison, this level of detail is not necessary for the approach to dealing with uneconomic costs that is recommended by Staff. Another important consideration is that the top-down approach, which usually results in a wide range of predictions, yields results that are not substantially different from the bottom-up approach. Staff does not expect pinpoint accuracy and, more importantly, the proposed method of dealing with potential uneconomic costs does not require it.

Where Staff differs substantially from the testimony of others, regardless of their preferred estimation method, is the use of the results of the analysis. Staff believes that the estimate of uneconomic costs should only be used to provide an approximation of the size and direction of each utility's potential uneconomic cost or competitive gain. This is to gather information on the competitiveness of Arizona's affected utilities, not to determine compensation for uneconomic costs.

Under Staff's recommendations, the Commission would determine, if recovery of uneconomic cost is allowed, an amount of "transition revenues" based on a specific set of criteria, such as financial integrity of the utility in light of the fair value of its generation assets in a competitive market. This would not require an exact determination of the amount of potential competitive loss. Rather, the Commission would determine an estimate of the market revenue and determine any additional revenues needed to meet the predetermined criteria. After the transition period (Staff recommends five years or less), the utility would no longer receive any transition revenues for production uneconomic costs.

Alternatively, in another approach to determining transition revenues, the Commission could base it on a performance standard, such as the long-run average cost of generation of power in the region. The transition revenue would be determined on a declining percentage of the difference between the company's average cost and the region's average cost through the transition period. This is not intended to be full compensation for potential competitive losses, any shortfall would be the responsibility of the company to either try to reduce by lowering operating costs or through reduced earnings.

Under either approach, once the transition revenue amount and the length of the transition period are determined, no true-up is necessary if less than the full amount of estimated uneconomic costs is permitted to be recovered. This may provide a stronger incentive to minimize uneconomic costs than would a true-up mechanism that periodically adjusts the amount of transition revenue. Staff recognizes that determining the specific criteria and the transition revenue amount for each affected utility will require additional effort, but this should be determined in the next step in these proceedings. To date, Staff has not developed or attempted to develop a set of specific criteria (financial or performance) or estimated the transition revenues for the affected utilities.

II. TRANSITION REVENUES APPROACH SHOULD BE USED FOR DEALING WITH UNECONOMIC COSTS.

Q. **Several witnesses testified that the Commission should determine the amount of "stranded costs" and then allow recovery of some percentage of that amount.**[1] **Do you think that is an appropriate approach?**

A. No. At best it would be very difficult to determine an exact percentage of uneconomic costs to allow; at worst, it would be arbitrary and cause a protracted proceeding to determine the "correct" percentage. There is simply no economic principle that suggests a particular percentage, except, as noted in my direct testimony, the less that is allowed, the better it is in terms of economic efficiency. This suggests that zero percent is the best percentage to use in terms of just economic efficiency.

Moreover, since this requires taking a percentage of an estimate of the amount of uneconomic costs, the percentage itself would not be based on a solid foundation. As also noted in my direct testimony, any estimate of uneconomic costs is extremely sensitive to relatively small changes in the assumptions. Very small changes in the forecasted market price, for example, will change the estimate substantially. The likelihood of being wrong in guessing the future market price is very high since there is no history of a retail market on which to base the forecast. In addition, there are many other assumptions used to make the estimate that are also very speculative including future demand for power, variable cost, plant capacity factors, capital additions and their cost, and many others.

Again, Staff prefers the approach suggested in my direct testimony and described in the answer to the previous question; that is, the Commission allows an amount of "transition revenues" based on a specific set of criteria, such as financial integrity of the utility or performance standard. This would require no determination of an agreed on amount of competitive loss or a fixed percentage, and would fairly value the affected utilities' generation in the competitive market for

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[1] Richard A. Rosen for The Residential Utility Consumer Office, Enrique A. Lopezlira for Office of the Attorney General, and J. Robert Malko and Kevin C. Higgins both for Arizonans for Electric Choice and Competition.

both the utilities and their customers. Staff believes this is in the public interest because it balances the needs of consumers and utilities in the transition to a competitive market.

Q. **Several parties have indicated that customers that do not choose another supplier should not pay for uneconomic costs.[2] Will Staff's proposal to only allow recovery through transition revenues result in these customers paying for uneconomic costs or paying higher prices than their current rates?**

A. No. There are two basic concerns; one is that when customers leave the utility and purchase power elsewhere, the cost that is "stranded" will be shifted to the remaining customers. The second concern is that a broadly applied transition charge will be added on top of the current rate or standard offer. This first problem has been solved in other states by making the transition component "nonbypassable," that is, the departing customer will pay the transition charge irrespective of where the power originated. Neither concern is a problem under Staff's proposal because current rates will be unbundled into their component parts. For example, all retail customers' bills may have the following breakdown: a generation charge, a transition charge (if any), and a transmission and distribution charge.[3] For the utility the generation charge may be a "standard offer" that represents its generation price. All distribution customers, whether they choose an alternative supplier or not, will pay the transition charge. Also, the price cap discussed in the direct testimony will ensure that the total price paid by retail customers will not exceed their current rate.

III. DIVESTITURE OF ASSETS SHOULD NOT BE USED FOR PURPOSES OF ESTIMATING UNECONOMIC COSTS.

Q. **Several witnesses testified that they believed that an appropriate way to determine the value of utility assets is to sell or auction off the generation plants.[4] This would, they**

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[2] Betty K. Pruitt for Arizona Community Action Association, Sean Breen for Citizens Utilities, and Albert Sterman for Arizona Consumers Council.

[3] A similar point is made by Kevin C. Higgins for Arizonans for Electric Choice and Competition (pages 34 and 35).

[4] Douglas C. Nelson for Electric Competition Coalition, Mona Petrochko for Enron Energy Services, Inc., and Douglas A. Oglesby for PG&E Energy Services Corporation. Others noted that it could be used to mitigate uneconomic costs, including

argue, provide a more precise means to determine generation asset value and estimate uneconomic cost. Do you agree?

A. No. Proponents of this approach argue that if a higher and more accurate value is obtained for the utility's assets, then the amount of uneconomic cost, and presumably the amount customers will have to pay, is reduced. While it may be true that using a sale or auction would provide a better means than an administrative approach to determine asset value and may well result in a higher value for the assets than an administrative method, there is a major limitation to using this approach to determine value for *purposes of estimating uneconomic cost*— the reduction in uneconomic costs from a sale or auction of the utility's assets is only illusionary because of the effect that the sale will likely have on the retail market price for power in the state.

Q. **Can you construct a simple example to explain this point?**

A. Yes. Suppose that a utility has just three plants with a net book value of $50 million, $75 million, and $100 million respectively, with a total book value of $225 million. For this simple example, it is assumed that these three plants are all of the utility's generation assets. By an administrative means, such as the "lost revenues" method, it is found that each plant's estimated value is $75 million, $85 million, and $15 million respectively, with a total value is $175 million. Assume also, for illustration purposes, that the utility will be allowed to recoup one hundred percent of their uneconomic costs. In this case, the uneconomic cost is $50 million (book value minus the estimate value or $225 - $175), and is the amount customers will be required to pay.

If the utility's generating assets were required to be sold or auctioned off, it is likely that it would result in a higher value for some plants than estimated through administrative means. Again for illustration purposes, assume that the plants are sold and results in a market value of $100 million, $100 million, and $10 million, respectively for a total value of $210 million. In this case the uneconomic value is reduced to $15 million, precisely the point being made by supporters of a sale or auction of generation assets.

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Sean Breen for Citizens Utilities, Charles Bayless for Tucson Electric, and Carl Dabelstein, CPA.

Example 1

Significant Uneconomic Cost in Plant 3

Value Method	Plant 1	Plant 2	Plant 3	Total
Book Value (net)	50	75	100	225
Administrative Value	75	85	15	175
Market Value	100	100	10	210

However, there is an important factor that is being overlooked by supporters of this method. Note that the new owners of the plants after the sale will want to recover their capital investment ($210 million), which is now higher than under the administrative method ($175 million). These new owners will want to recover this capital cost through the price they charge customers. Therefore, the "savings" from lowering the amount of uneconomic costs that resulted from the sale or auction is simply returned to the new owners through a higher market price. The apparent "savings" to the customer is only an illusion. The same result occurs when there is a split between the customers and the utility of the uneconomic cost recovered, except, of course, the utility is not paying the higher market price for power, customers are. Therefore, a sale or auction will reduce any share the utility is required to shoulder of potential uneconomic costs, but provides little or no benefit to customers.

It should be noted that the aim of administrative estimation methods is to estimate the market value relative to the current book value of the generation assets. This is accomplished by estimating the net present value of the expected revenue stream that an asset will produce over its estimated life. This is similar to the way a potential purchaser of the plants may try to estimate the plants' value. They would take into account their expectations of future market conditions and desired profit. For a utility that currently owns the plants, if the net book value is greater than the market estimate, the difference is the estimate of uneconomic cost or competitive loss. If the market value is greater than the book cost, then there is a net competitive gain. The reason that administrative valuation methods may undervalue the assets may be due to the value potential purchasers may place on intangibles such as siting certification, location proximity to loads, and access to transmission and distribution lines. Purchasers may also place a high value on being among the early suppliers to be established in the area. The value of these intangibles will not be reflected on the utility's accounting books but will be reflected in the price paid for an asset.

Q. **What if the net result is no uneconomic costs, but a net gain from the sale or auction?**

A. In a second example, the same result can occur even when the auction is much more successful and results in no net uneconomic cost. Example 2 has the same values for each plant for both the net book and administrative values. In this case assume the sale or auction is very successful and results in a much higher amount paid for plants 1 and 2 than the first example. In this case the sale or auction results in $125 million, $125 million, and $10 million or $260 million in total value. The result is that there is a net *gain* of $35 million. If the rule is full recovery of uneconomic costs, then it is appropriate to assume that customers would be given a full *refund* if there was a net gain. Thus, customers get a refund, but the new owners of the plants must now recover a capital cost of $260 million in the market price.

Example 2

Higher Values Obtained from Sale Results in Net Gain

Value Method	Plant 1	Plant 2	Plant 3	Total
Book Value (net)	50	75	100	225
Administrative Value	75	85	15	175
Market Value	125	125	10	260

This illustrates the point that no matter how successful the sale or auction is, the apparent "savings" in uneconomic cost to customers is illusionary. This also demonstrates what would be the worst condition for customers, an administrative valuation method with one hundred percent recovery of uneconomic costs and the utility later sells the assets for a higher value but none of the difference is given back to the customers. What Staff proposed in the direct testimony would prevent this from occurring by limiting the amount of uneconomic costs and by not basing recovery of uneconomic cost on an administratively estimated amount.

Q. **Are there any mitigating factors that may offset this market price affect?**

A. A mitigating factor may be that the new owners of the plants may be able to reduce variable operating costs more than the utility. However, it should be expected that in a dynamic competitive market, the pressure to reduce costs will be present irrespective of who owns the asset. Also, potential purchasers will factor in their expectations of future operating costs and this will also be reflected in their offer price for the asset. For example, if they expect that they can reduce operating costs of the plant, they will be willing to pay relatively more for the asset.

Another mitigating factor may be that the retail market price in the region will be affected by power supplied from outside Arizona so that there is not necessarily a one-to-one relationship between the sale price of the generation assets in Arizona and the state's retail price. However, a requirement to sell all investor-owned plants in the state will mean that a substantial portion of the state's and the region's generation resources will be revalued at the market price. This will undoubtedly, with all other factors being equal, result in a higher market price for the state's retail customers. Also, this will affect the price in the state for many years in the future.

Q. **Are there any other problems with using the sale or an auction to value utility assets?**

A. Yes. The Commission should consider that it may be difficult, with divestiture, to return the net benefit to customers. The Commission would have to create a mechanism to return any competitive gain to customers. Also, auctions do not automatically "get it right." Michael Rothkopf[5] points out that the auction design would have considerable impact on the outcome. An improperly designed auction could undervalue or overvalue the generation assets. The Commission would need to carefully consider the sale or auction design options.[6] Depending on the relative amount of economic and uneconomic costs and future market prices, customers may be made worse off.

Q. **Please clarify Staff's position with respect to divestiture and the sale or auction of assets to value uneconomic costs.**

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[5] Michael H. Rothkopf, "On Misusing Auctions to Value Stranded Assets," *The Electricity Journal*, December 1997.

[6] Design questions include (among many others): Should there be sealed or open bidding, first or second price bidding, should the utility be allowed to bid for its own assets, and what kind of Commission oversight of the process should there be? A discussion of the advantages and disadvantages of the different sale and auction design options is beyond the scope of this generic proceeding.

A. Staff is not arguing that there should or should not be divestiture of utility generating assets. Rather, Staff believes that the Commission should not base its decision on whether there should or should not be divestiture of utility assets based solely on valuing utility assets for purposes of determining uneconomic costs. There may be valid reasons to require divestiture, but these should be explored in a separate proceeding on, for example, market power.

If divestiture is left as being only voluntary, the utility will decide when the sale of its assets makes economic sense to reduce its uneconomic costs. The utility will consider its options by comparing a sale or auction (where it would choose a sale method to maximize the sale price) to continuing to own the plants itself. If it decides to remain the owner, the utility has the option to either have someone else operate the plants or continue to operate the plants itself, depending on what it determines to be the best (that is, lowest cost) option.

This corresponds with Staff's position in the direct testimony on the recovery of uneconomic costs, that is, the best way to mitigate uneconomic costs and the likeliest way to have a truly competitive generation market[7] develop is to limit recovery. In both cases, the utility is given the correct economic signal to minimize uneconomic cost. Allowing full recovery of potential uneconomic costs only impedes this process. If recovery of potential uneconomic cost is limited, then the effect on the market price from a sale or auction described above will be less of a concern. Ideally, what should occur is that what the company decides is in its own best interest, is also in the customers' when it comes to the treatment of uneconomic cost.

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

A. Yes.

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[7] What is meant by "truly competitive generation market" is one where the market price is determined by the interaction of suppliers and customers and is not influenced or distorted by a single producer or group of producers seeking to raise the price above a competitive equilibrium level.

BEFORE THE ARIZONA CORPORATION COMMISSION

RENZ D. JENNINGS
Chairman
MARCIA WEEKS
Commissioner
CARL J. KUNASEK
Commissioner

IN THE MATTER OF ARIZONA PUBLIC SERVICE COMPANY'S RATE REDUCTION AGREEMENT.	))))	DOCKET NO. U-1345-95-491

TESTIMONY

OF

RANDALL W. SABLE, CPA

CHIEF, ACCOUNTING AND RATES

UTILITIES DIVISION

EXHIBIT
APS 6
Admitted

MARCH 15, 1996

Agreement would cost them approximately $4 million. Over the approximate 21 month period before new (presumably lower) rates could go into effect, based on a Show Cause proceeding initiated in January 1997, ratepayers will have received, through the rate reduction included in the proposed Rate Reduction Agreement (on a nominal dollar basis), approximately $84 million. Even on a present value basis, ratepayers receive more in savings with the 3.25 percent reduction today, than they would if a 4.5 percent decrease were implemented in 1998. Therefore, ratepayers will be better off having a 3.25 percent reduction today rather than waiting for and "chasing" probable future rate reductions beginning in 1997 and beyond.

ACCELERATED AMORTIZATION OF REGULATORY ASSETS

Q. You have mentioned the proposal by APS to accelerate the amortization of its regulatory assets several times. Could you please define what regulatory assets are and explain the reasons the Company is proposing to accelerate its amortization of these regulatory assets?

A. Yes. Regulatory assets arise only in the context of rate-regulated enterprises. In their simplest terms, regulatory assets consist of costs that would have been charged to operating income (as expense) in the period incurred absent an implicit promise by the entity's regulator that they can be deferred on the balance sheet as an asset and charged to expense and collected from ratepayers in future periods. APS presently has more than $1 billion booked as regulatory assets.

The Company is making its proposal to rapidly amortize its regulatory assets to reduce its potential stranded costs, if and when, competition and retail open access become a reality. Of all the potential stranded costs that may be present in a utility's cost structure, regulatory assets are the most likely not to be recovered in a competitive environment. This occurs, in large part, because of the fact that their recovery is premised on a regulatory promise. Additionally, potential competitors who have not been subject to rate regulation will not have these costs built into their cost structure. As a result, APS will likely face competition from entities that are not burdened with these costs, and thus, it will not be able to set its prices at levels to recover the regulatory assets. The regulator, assuming it is still setting rate levels for a utility's captive customers (generally residential and small commercial), will be faced with burdening these captive customers with additional and significant cost responsibility for the regulatory assets or reversing past decisions that enabled the Company to recover these cost. Should the Commission decide to reverse past decisions allowing recovery, this would lead to significant write-offs of these assets. In APS' case, a write-off of its regulatory assests would seriously impair the financial integrity of the utility and lead to possible bond rating downgrades and, in turn, higher capital costs.

Q. Why did Staff and APS agree to an 8 year amortization period for these regulatory assets?

A. APS initially proposed an 8 year period based on its assumptions and expectations as to when competition and open retail access may occur. Staff reviewed the proposed 8 year period and felt it reasonably encompassed a possible range of possibilities. First, if the 8 year amortization period is longer than the transition to competition and open access, at least APS would have significantly reduced the net book value of the regulatory assets, thus mitigating its exposure, as well as the ratepayers' exposure, to massive write-offs and potentially higher capital costs. Second, if the 8 year amortization period proves to expire prior to the onset of competition and open access, APS' cost of service would be dramatically reduced and ratepayers would be entitled to significant rate reductions. It is important to remember, that the choice of an amortization period for regulatory assets is typically arbitrary. For these reasons, as well as the fact that APS is proposing to lower rates while substantially increasing its cost of service, Staff believed an 8 year amortization period was appropriate.

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EXHIBIT
S-3
admitted

TESTIMONY OF SHERYL L. HUBBARD
SUMMARY

<u>The Implications Of The Statement Of Financial Accounting Standards No. 71 Resulting From The Recommended Stranded Cost Calculation And Recovery Mechanism</u>

The predominant position of the accounting community is that when a rate order is issued or deregulatory legislation is passed (whichever is necessary to effect change in the jurisdiction) that contains sufficient detail for the enterprise to reasonably determine how the transition plan will affect the unregulated portion of its business, the enterprise should stop applying FAS 71 to that portion of its business. The application of FAS 71 is appropriate, until the point in time when the Commission directives are issued.

"Regulated cash flows" are the determinant of whether assets will be recovered or need to be written down. No elimination of regulatory assets and regulatory liabilities is required until one of three events occurs. The three events are recovery or collection of the regulatory asset or regulatory liability, respectively through regulated cash flows, impairment of the regulatory asset by the regulator or elimination of the regulatory liability by the regulator, or the separable portion of the business from which the regulated cash flows are derived no longer meets the criteria for application of FAS 71.

Generally and simplistically, an analysis will be necessary of all regulated cash inflows with an associated comparison of costs to be recovered, i.e. cash outflows. To the extent that the inflows exceed the outflows, no write-offs or write-downs will be required. If the outflows exceed the inflows, write-offs and write-downs will occur.

The financial community will continue to look for assurances from the regulator that the assets remaining on the books of the company will be provided a return on and recovery of the investments. To the extent that assurances are not provided, the financial community will require some recognition of impairment, i.e. write-downs and write-offs, in accordance with the provisions of FAS 121.

BEFORE THE ARIZONA CORPORATION COMMISSION

JIM IRVIN
Commissioner - Chairman
RENZ D. JENNINGS
Commissioner
CARL J. KUNASEK
Commissioner

IN THE MATTER OF THE COMPETITION IN THE PROVISION OF ELECTRIC SERVICES THROUGHOUT THE STATE OF ARIZONA	))))	DOCKET NO. U-0000-94-165

DIRECT

TESTIMONY

OF

SHERYL L. HUBBARD

CHIEF, ACCOUNTING AND RATES

UTILITIES DIVISION

JANUARY 21, 1998

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APPENDIX

INTRODUCTION

Q. Please state your name and business address.

A. My name is Sheryl L. Hubbard. My business address is Arizona Corporation Commission (Commission), 1200 W. Washington, Phoenix, Arizona 85007.

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

A. I am currently employed by the Commission as the Chief of Accounting and Rates.

Q. What is your educational background?

A. In 1978, I received a Bachelors of Arts degree with a major in Accounting from Michigan State University. In addition to my formal education, I have attended seminars on utility regulation, utility finance and accounting, utility income taxes, and numerous seminars designed to provide updates to changes in the regulation of public utilities, accounting and auditing standards, as well as tax matters. Various professional organizations, national public accounting firms, and industry organizations sponsored these seminars.

Q. Please describe your professional experiences.

A. A description of my professional experiences is attached hereto as Appendix A.

Q. What is the purpose of your testimony in this proceeding?

A. In the Commission's First Amended Procedural Order in Docket No. U-0000-94-165 dated December 11, 1997, it was ordered:

> "...that Issue No. 3 as set forth in our December 1, 1997 Procedural Order includes the following sub-issues: ...The implications of the Statement of Financial Accounting Standards No. 71 resulting from the recommended stranded cost calculation and recovery mechanism."

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The purpose of my testimony in this proceeding is to present a general overview of the Statement of Financial Accounting Standards No. 71 (FAS 71), Accounting for the Effects of Certain Types of Regulation, implications of implementing a competitive market also referred to as a customer choice program for regulated utilities.

Q. Will you summarize the criteria that must be met for the application of FAS 71 to financial statements of enterprises with regulated operations?

A. Yes, there are three criteria that must be met and they are that the enterprise's rates are established by or are subject to approval by an independent third-party regulator or by its own governing board empowered by statute or contract to establish rates that bind customers; the regulated rates are designed to recover the specific enterprise's cost of providing the regulated services or products; and in view of the demand for the regulated services or products and the level of competition, direct and indirect, it is reasonable to assume that rates set at levels that will recover the enterprise's costs can be charged to and collected from customers.

Q. Has the Financial Accounting Standards Board (FASB) issued other statements that relate primarily to regulated enterprises?

A. Yes. FASB Statement No. 101 (FAS 101) titled Regulated Enterprises-Accounting for the Discontinuation of Application of FASB Statement No. 71 was issued in response to the potential deregulation of regulated entities. This statement was issued in December 1988 with an effective date for discontinuation of FAS 71 that occurs in fiscal years ending after December 15, 1988. FASB Statement No. 90 (FAS 90) titled Regulated Enterprises-Accounting for Abandonments and Disallowances of Plant Costs as well as FASB Statement No. 92 (FAS 92) titled Regulated Enterprises-Accounting for Phase-In Plans relate primarily to regulated enterprises. FASB Statement No. 121 (FAS 121) titled Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to be Disposed of though more general accounting is applicable to regulated enterprises.

Q. Are there other pronouncements or guidance for regulated enterprises associated with the deregulation of regulated entities that affect when or how FAS 101 is applied to the accounting records of public utilities?

A. Yes. The Emerging Issues Task Force (EIFT), a body created by FASB in 1984 to reach a consensus on how to account for new and unusual financial transactions that have the potential for creating differing financial reporting practices, has addressed issues related to the application of FASB Statements No. 71 and 101 in response to the deliberations of state legislatures and/or regulatory commissions and others including federal legislators over potential changes to laws and regulations governing the pricing of electricity.

Q. What specifically was the subject of the deliberations of governmental regulatory bodies?

A. The deliberations of the governmental regulatory bodies were specifically related to the element of the total price of a kilowatt of electricity that is intended to cover its production or generation cost, as opposed to the portion intended to cover the transmission cost to a local area or the portion intended to cover the cost of distribution to individual residences.

Q. If some of an enterprise's operations are regulated and other operations are not, should FAS 71 continue to be applied to the entity's operations?

A. FAS 101 addresses how an enterprises that ceases to meet the criteria for application of FAS 71 to all or part of its operations should report that event in its financial statements.

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Q. What guidance does FAS 101 provide regarding when an enterprise should stop applying FAS 71 to the separable portion of its business whose service pricing is being deregulated once a rate order is issued or legislation is passed (whichever is necessary to effect change in the jurisdiction) that has the effect of deregulating the rates charged to customers?

A. The consensus reached by the EIFT on this issue is that when a rate order is issued or deregulatory legislation is passed (whichever is necessary to effect change in the jurisdiction) that contains sufficient detail for the enterprise to *reasonably determine* how the transition plan will affect the separable portion of its business whose pricing is being deregulated, the enterprise should stop applying FAS 71 to that separable portion of its business.

Q. Does FASB 101 provide guidance for regulated entities on how they should evaluate whether to continue to recognize all or some portion of the regulatory assets and regulatory liabilities, respectively, that originated from the separable portion of the business whose pricing is being deregulated and exist at the date that FAS 101 is applied?

A. The consensus reached by the EIFT is that the regulatory assets and regulatory liabilities that originated in the separable portion of an enterprise to which FAS 101 is being applied should be evaluated on the basis of where the regulated cash flows to realize and settle them will be derived.

Q. What exactly is meant by the term "regulated cash flows"?

A. "Regulated cash flows" are defined by the EIFT as being from rates that are charged to customers and intended by regulators to be for the recovery of the specified regulatory assets and the settlement of regulatory liabilities. The EIFT goes further to define "regulated cash flows" as being derived from a "levy" on rate-regulated goods or services provided by another separable portion of the enterprise that meets the criteria for the application of FAS 71.

Q. Did the EIFT reach a consensus on when elimination of the regulatory assets and regulatory liabilities from the enterprises balance sheet would occur?

A. The consensus of the EIFT is that there is no elimination of the regulatory asset and regulatory liabilities that originated in the separable portion of the business to which FAS 101 is being applied and for which the rate order or deregulatory legislation (whichever is necessary to effect change in the jurisdiction) specifies the collection of regulated cash flows until one of three events occurs. One, the regulatory assets are recovered by regulated cash flows or the regulatory liabilities are settled through collection of regulated cash flows. Two, the regulatory assets are impaired or the regulatory liabilities are eliminated by the regulator. Third, the separable portion of the business from which the regulated cash flows are derived no longer meets the criteria for application of FAS 71.

Q. Were other issues addressed by the EITF in relation to the application of FAS 101?

A. Yes. The EIFT also attempted to determine how an enterprise should evaluate whether to establish additional assets and regulatory liabilities related to expenses and obligations that will originate from the separable portion of the business whose pricing is being deregulated but that will arise subsequent to applying FAS 101.

Q. Did the EIFT reach a consensus on this issue?

A. Yes. The EIFT reached a consensus that the source of cash flow approach should be used for recoveries of all costs and settlements of all obligations for which regulated cash flows are specifically provided in the rate order or deregulatory legislation (whichever is necessary to effect change in the jurisdiction).

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Q. Can you summarize how these accounting pronouncements will be applied, in general?

A. Generally and simplistically, an analysis will be necessary of all regulated cash inflows with an associated comparison of costs to be recovered, i.e. cash outflows. To the extent that the inflows exceed the outflows, no write-offs or write-downs will be required. If the outflows exceed the inflows, write-offs and write-downs will occur. The financial community will continue to look for assurances from the regulator that the assets remaining on the books of the company will be provided a return on and recovery of the investments. To the extent that assurances are not provided, the financial community will require some recognition of impairment in accordance with FAS 121.

Q. Based upon the Staff's recommendations sponsored by Dr. Kenneth Rose as they relate to stranded costs recovery, will the accounting standards discussed throughout this testimony require financial statement adjustments by the Affected Utilities if adopted by the Commission in this proceeding?

A. The Staff, through its witness, Dr. Kenneth Rose, is recommending that the Commission adopt a "transition revenues approach" which requires the Commission to determine specific criteria for allowable recovery of the competitive losses. At the time that the Commission determines the specific criteria to apply to the Affected Utilities' potential recovery of competitive losses, accounting implications will be identifiable. Until that time, one is only able to speculate on the accounting implications because the total regulated cash inflows is yet to be determined.

Q. Does this complete your direct testimony?

A. Yes, it does.

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APPENDIX

QUALIFICATIONS

Q. What has been your professional experience?

A. In 1979, subsequent to graduation from Michigan State University, I was employed by the Michigan Public Service Commission as a public utility auditor in the Electric Division. The Electric Division had overall responsibility for electric, steam and water utility regulation. From 1979 through 1985, I progressed from an auditor trainee to the journey-level auditor and then to a senior auditor. In that capacity, I participated in docketed cases for general rate relief, power supply cost recovery reconciliations, fuel and purchased power reconciliations, reconciliations of residential conservation service program costs, and cases involving overall compliance with the Commission's Uniform System of Accounts. The compliance examinations also included telecommunication companies. Additional responsibilities included supervising the work assignments of other auditors in performing examinations on all matters relating to electric utility, steam utility, and water utility operations. I reviewed the work assignments completed by the auditors and evaluated of the effect of the auditor's findings on the overall case. During the time that I functioned as a senior-level auditor, I was also responsible for formulating the Staff's position consistent with the Commission's mission and its overall objective of balancing ratepayer and shareholder interests. This often entailed the presentation and defense of that position in public hearings before the Michigan Commission in numerous cases. I was also responsible for performing special investigations of construction costs such as the Detroit Edison Company's Belle River Power Plant (2 units – coal-fired) and Enrico Fermi 2 Nuclear Power Plant, and Indiana Michigan Power Company's Rockport Power Plant (Unit 1 – coal-fired). The level of construction expenditures to be included in the utilities' rate base was the subject of those examinations.

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In August of 1985, I was promoted to a Construction Audit Specialist. In that capacity, I was responsible for the audit of Consumers Power Company's Midland Nuclear Power Plant construction expenditures as well as the ongoing auditing responsibilities described above. At the time of this promotion, the plant had not yet been abandoned but was facing extreme cost overruns. During the course of the examination, the plant was abandoned. During the abandonment proceedings before the Commission, the abandonment was modified with a portion of the plant being converted to a Public Utility Regulatory Power Act (PURPA) cogeneration facility, which is the infamous Midland Cogeneration Venture (MCV). I presented the accounting implications of the Staff's recommended recovery mechanism which were subject to the Financial Accounting Standards Board Statement Number 90 – Accounting for Plant Abandonments. In August of 1988, I was promoted to Manager of the Auditing Section of the Electric Division. In that position, my responsibilities included the supervision of the Auditing Section in the performance of examinations of electric, steam and water utilities for all matters requiring accounting and auditing expertise. In July of 1995, I transferred to the position of Executive Assistant to one of the Commissioners. In that capacity, it was my responsibility to provide guidance to the Commissioner on ratemaking and accounting implications of proposals of all parties' positions in proceedings before the Commission. During this timeframe, the gas industry was evaluating the merits of customer choice at the local distribution level, deregulation of the telecommunications industry was being legislated at the state and federal levels, and a customer choice alternative for the electric industry was being advocated by the Governor of the State. It was my responsibility to monitor the developments at the federal and state levels and advise the Commissioner when necessary.

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In November of 1997, I began my employment with the Arizona Corporation Commission in my present capacity of Chief of the Accounting and Rates Section of the Utilities Division. In this capacity, my responsibilities include directing the assignments of finance and accounting professionals in the analysis of complex regulatory issues in the energy, telecommunications and water industries. This section also has responsibility for the revenue requirements, cost of capital and capital structure determinations in rate applications, and tariff and rate design issues as well as financing applications before this Commission.

Q. Are you a Certified Public Accountant?

A. Yes, I am a Certified Public Accountant licensed to practice public accountancy in the State of Michigan.

Q. What has been your experience in regulatory proceedings?

A. During the past eighteen year, I have participated in numerous rate cases and other regulatory proceedings involving electric, steam and water utilities conducted before the Michigan Public Service Commission. I have testified on matters involving regulatory accounting, auditing, and taxation.

Q. Have you ever testified before the Arizona Corporation Commission?

A. No, I have not.