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IN THE MATTER OF THE COMPETITION IN
THE PROVISION OF ELECTRIC SERVICES
THROUGHOUT THE STATE OF ARIZONA.

DOCKET NO. U-0000-94-165

NOTICE OF FILING

Staff of the Arizona Corporation Commission hereby files the testimony Dr. Kenneth
Rose and Sheryl L. Hubbard in the above-captioned docket.

RESPECTFULLY SUBMITTED this 21st day of January, 1998.

ARIZONA CORPORATION COMMISSION

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BEFORE THE ARIZONA CORPORATION COMMISSION

REC'D
AZ CORP COMMISSION

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

JAN 21 11 31 AM '98

RECORD CONTROL

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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1 **INTRODUCTION**

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

3 **A.** My name is Kenneth Rose. I am a Senior Institute Economist at the National Regulatory
4 Research Institute (NRRI), the research institute of the National Association of Regulatory Utility
5 Commissioners and its member state public utility commissions. The NRRI is a research department
6 at The Ohio State University and I work in its Electric and Gas Division. My business address is
7 1080 Carmack Road, Columbus, Ohio 43210. I received my B.S., my M.A., and my Ph.D. in
8 economics from University of Illinois at Chicago in 1981, 1983, and 1988, respectively. My
9 dissertation thesis was an *Economic Analysis of Electricity Self-Generation by Industrial Firms*.

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

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

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

27 **A.** The staff's highest priorities are issue #1, should the Electric Competition Rules be modified
28 regarding stranded costs and if so how; issue #3, what costs should be included as part of stranded

1 costs and how should those costs be calculated; and issue #5, should there be a limitation on the
2 recovery time frame for “stranded costs.”

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

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

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

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

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

3 **Q. Can you elaborate on your economic interpretation of the “regulatory compact”?**

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

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

24
25 ^{1/} The most recent case was *Duquesne Light Co. et al. v. Barasch et al.* in 1989.
26 In footnote number 10, the Court stated that a “rigid requirement of the prudent investment
27 rule would foreclose hybrid systems. . . [and] would also foreclose a return to some form of
28 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.”

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

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

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

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

25

26

27

28

1 **Question number 1**

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

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

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

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

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

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

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

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

27

28

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

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

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

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

26
27 ^{2/} A. Lawrence Kolbe and William B. Tye, "The *Duquesne* Option: How Much
28 'Hope' Is There for Investors in Regulated Firms?" 8 *Yale Journal on Regulation*, 113
(1991).

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

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

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

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

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

1 it is not known exactly how the generation market will develop, and hence the extent of the
2 uneconomic cost problem is likewise unknown.

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

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

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

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

1 that recovery impedes the development of a competitive generation market and reduces overall
2 economic efficiency.

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

12 **Q. If “stranded cost” recovery is allowed, what effect will it have on the development of**
13 **a competitive market?**

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

26 In addition, inefficient suppliers are encouraged to continue to operate inefficient plants. In
27 this way recovery of uneconomic costs acts as a barrier to exit from the market when it would
28 otherwise be economic to do so. This is related to the second problem: recovery of uneconomic

1 costs reduces the incentive to mitigate and reduce uneconomic costs. This lack of incentive is often
2 referred to as the moral hazard problem. A moral hazard can be created when, for example, a
3 government agency, usually inadvertently, encourages firms or individuals to act in a manner that
4 is not in the general public's best interest. Assurance of recovery of uneconomic costs creates such
5 a hazard. Simply put, a firm that is given assurances that recovery will be forthcoming will not be
6 as adamant about reducing costs and minimizing potential uneconomic costs. It will also be less
7 aggressive about expanding into new market areas or retaining existing customers if it believes that
8 it will be compensated for its losses.

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

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

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

26 **A.** This is thought to be a consequence of "uneconomic bypass." Uneconomic bypass is said
27 to occur when a customer chooses a supply option that is not the lowest cost in terms of long-run
28 marginal cost. This may arise when customers compare the price of an alternative option that is

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

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

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

28

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

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

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

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

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

27 Because of regulation, utilities are likely to have cost inefficiencies. Over time it should be
28 expected that costs would change so that rates and marginal costs will be expected to shift. This can

1 be caused by changes in technology, fuel prices, or regulatory policy. Obviously, it is this last
2 exogenous factor that is now changing. These shifts in the curves over time are caused by dynamic
3 effects. When developing a regulatory policy, therefore, it is important to also consider this second,
4 and in many respects more important type of efficiency.

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

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

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

1 — attempts by the regulator to “correct” for static inefficiencies would only harm long-run overall
2 efficiency.

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

8 **Q. Have others discussed this issue of economic efficiency?**

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

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25
26 ^{3/} Alfred E. Kahn, *The Economics of Regulation: Principles and Institutions*,
27 *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.

28 ^{4/} *Ibid.*, 176-77.

1 competitors. The dynamic efficiency gains from reduced costs, innovation, and lower prices to
2 consumers, while difficult to predict, almost certainly outweigh any loss in static efficiency.^{5/}

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

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

21 ^{5/} Uneconomic bypass will likely only occur in a limited range and the loss in
22 efficiency relatively small. The potential loss from “insufficient” bypass, on the other hand,
could occur over a much wider range and be much larger.

23 ^{6/} John T. Wenders, *The Economics of Telecommunications: Theory and Policy*
24 (Cambridge, MA: Ballinger Publishing Company, 1987), 259.

25 ^{7/} Ibid., 260.

26 ^{8/} Ibid., 261.

27 ^{9/} Ibid.

28 ^{10/} Ibid., 262.

1 **Q. It has also been asserted that allowing recovery of uneconomic cost does not distort a**
2 **competitive market. Do you agree?**

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

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

14 **A.** The term "stranded cost," while now commonly used, is a misnomer. What is actually meant
15 by the term is to determine the amount that the utility's generation costs exceeds the market price
16 for generation. An estimation of the production loss due to competition is usually attempted before
17 the start of retail competition for generation. Since, at this point in Arizona, there are currently no
18 actual "stranded costs," the focus is on predicting utility loss in the future competitive market or
19 *potential* stranded costs. Another aspect of the term "stranded cost" that can also be misleading is
20 that it suggests that costs are fixed and permanent and that the utility can do little to reduce the
21 potential competitive losses.

22 A more appropriate way to describe these competitive losses and the revenues a utility will
23 be allowed to collect from customers is "transition revenues." When the focus is shifted to the
24 temporary revenues the utility will receive, the emphasis is shifted to determining the amount
25 necessary to meet specific criteria set by the Commission, if the Commission decides to allow
26 recovery. For example, the Commission could determine the amount necessary to maintain the
27 financial stability of the utility. This may be an amount to pay the company's debts and, perhaps,
28 a reduced return. This changes the focus from rate base and expense items to the maintenance of the

1 financial integrity of the utility. This would not necessarily maintain the same level of profitability
2 as under regulation. In this case, the Commission estimates the market revenue and any additional
3 revenues required to maintain the financial integrity of the company for each year in the transition
4 period. This would require detailed analysis of the utility's books and records by the Commission.
5 The utility would only be allowed these revenues during the transition period.

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

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

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

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

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

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

23 **Question 2**

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

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

27

28

1 **Question 3**

2 **Q. What costs should be included as part of “stranded costs” and how should those costs**
3 **be calculated?**

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

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

22 The top-down approach projects the net present value of the difference between the
23 generation revenues that would be received if cost-based regulation continued and the projected
24 revenues expected with competition. Obviously, this also requires a great deal of speculation and
25 numerous assumptions as well, but the data requirements are less than the bottom-up approach.
26 Another advantage to the top-down approach is that impacts from changes in the assumptions on the
27 utility’s system as a whole can be seen more readily. Also this method, by definition, nets the above
28 and below market assets when it is calculated (since both market and regulatory total revenues are

1 considered). For these reasons the Staff believes that, while not ideal, the top-down approach is a
2 satisfactory alternative.

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

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

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

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

23 Other important assumptions that should be discussed include:

- 24 • Retail demand— assumptions on the future demand for electricity in the area should
25 also be described. Specifically, whether it is believed that there will be an increase,
decrease or that demand will remain constant over the period.
- 26 • Discount rate — when calculating the net present value of the difference between the
27 regulatory and competitive revenue streams, the affected utility should use several
28 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.

- 1 • Profit— when calculating the regulatory revenue stream, if there is a return on
2 investment, such as assuming the current level remains the same throughout the
3 period, it should be stated. Alternatively, this may be implied in the discount rate;
4 if so, this should also be explained.
- 5 • Future variable costs— it is expected that affected utilities will be able to reduce their
6 variable production costs over time. This is because, as is often assumed, utilities
7 where not always as vigilant in controlling cost as under cost-based regulation as is
8 likely to occur in a competitive market. Reasonable assumptions of variable cost
9 reductions should be included in the projections and explained.
- 10 • Future capital carrying costs— while sunk costs that have already been incurred
11 cannot be reduced, the carrying cost of that capital may be reduced through
12 refinancing of debt or replacing higher cost equity with debt (assuming that a higher
13 level of debt will be permitted with competition).
- 14 • Capital additions— any additions to the existing plant that is added, such as
15 refurbishment of existing plants, should be described in detail. This should not
16 include any new plant additions since these cannot be described today as “stranded.”

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

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

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

23 **A.** Regulatory assets categorized as post-in service Allowance for Funds Used During
24 Construction (AFUDC) should generally be classified as production costs for purposes of the top-
25 down approach. AFUDC is indistinguishable from other plant costs. Revenues from plant are
26 production revenues or are achieved through mitigation efforts. Therefore, the collectability of
27 AFUDC should be bound up in the overall future competitiveness of the particular plant to which
28 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 there
is a regulatory asset on Tucson Electric Power's regulatory books, there is not a corresponding asset
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

1 written off the asset for financial reporting purposes, it is only consistent with our suggested general
2 treatment of post-in service AFUDC that revenues from any production assets would be receivable
3 as production revenues or through mitigation efforts.

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

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

16 **Question 4**

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

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

24 **Question 5**

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

26 **A.** Since the recovery of uneconomic costs distorts the development of a competitive market as
27 discussed, the time frame should be as short as possible. The Staff recommends that, if recovery is
28 allowed, that the recovery time frame, or transition

1 period, be five years or less.

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

6 **Question 6**

7 **Q. How and who should pay for “stranded costs” and who, if anyone, should be excluded**
8 **from paying for stranded costs?**

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

14 **Question 7**

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

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

26 Another consideration is the administrative burden. A true-up mechanism will require filings
27 by affected utilities and proceedings to determine both the actual amount of uneconomic costs and
28

1 the amount collected so that reconciliation can occur. This will likely be a lengthy and drawn out
2 process.

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

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

11 **Question 8**

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

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

19 **Question 9**

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

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

26 The Federal Energy Regulatory Commission (FERC) was one of the first to ask this question.
27 They asked "how should the Commission ensure that the utility takes all reasonable steps to mitigate
28 its own costs so as to minimize what the customer would have paid? How should the Commission

1 ensure that the utility does its best to sell the power at its highest possible value so as to mitigate the
2 customer's stranded cost liability?"^{11/} Related to the decreased incentive to reduce costs already
3 discussed, if it is stated up front that utilities will be allowed to recover all uneconomic costs, then
4 it probably cannot be practically ensured that all is being done to reduce the affected utility's
5 uneconomic costs. The reason is that there is no realistic or practical way for any commission (or
6 any other state agency) to examine all available utility costs and options. The utility knows its
7 system, assets, and options better than any state agency can, without spending a great deal of time
8 and money to find the information itself.

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

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

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

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

24 ^{11/} FERC, Notice of Proposed Rulemaking, "Recovery of Stranded Costs by
25 Public Utilities and Transmitting Utilities," 222-23.

26 ^{12/} Robert J. Michaels, letter to the editor, *The Electricity Journal*, 8, no. 2
27 (March 1995): 86.

28 ^{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.

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

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

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

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

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

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

6 **A. Yes.**

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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.”

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.

Testimony of Dr. Kenneth Rose
Summary

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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.

KENNETH ROSE -- continued

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EDUCATION

- 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.
- B.S. Economics, University of Illinois at Chicago, 1981.

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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"Electric Utility Securitization," presented to State of Vermont House of Representatives, House Electric Utility Regulatory Reform Committee, Montpelier, Vermont, October 1, 1997.

"Performance-Based Ratemaking," presented to State of Vermont House of Representatives, House Electric Utility Regulatory Reform Committee, Montpelier, Vermont, October 1, 1997.

"Securitization of 'Stranded Costs': Benefits and Risks to Customers," presented at Fall Meeting, NARUC Staff Subcommittee on Accounts, Portland, Oregon, September 22, 1997.

"Electric Industry Restructuring: Activities and Issues Around the Country," presented to Indiana General Assembly, Regulatory Flexibility Committee, Indianapolis, Indiana, September 10, 1997.

"Securitization of 'Stranded Costs': Benefits and Risks to Customers," presented at conference, "Implementing Electric Retail Access in Illinois," Springfield, Illinois, September 5, 1997.

"Securitization of 'Stranded Costs': Benefits and Risks to Customers," presented to the Kansas Retail Wheeling Task Force, Topeka, Kansas, September 3, 1997.

"Stranded Costs," presented to the Kansas Retail Wheeling Task Force, Topeka, Kansas, September 3, 1997.

"Electric Industry Restructuring: Activities and Issues Around the Country," presented at 1997 American Bar Association Annual Meeting, Section of Public Utility, Communications and Transportation Law, San Francisco, California, August 5, 1997.

"Scrutinizing Securitization: A 'Win-Win' Solution or a Catch-22 for Consumers?" presented at NARUC Summer Committee Meetings, Committee on Electricity, San Francisco, California, July 21, 1997.

PRESENTATIONS — continued

Forum Co-Chair at IBC's 3rd Annual Industry Forum, Washington, D.C., June 25, 1997.

"Will Nuclear Power Be Competitive in the Future Electric Generation Market?" presented at IBC's 3rd Annual Industry Forum, Washington, D.C., June 25, 1997.

"Electric Industry Restructuring: Activities and Issues Around the Country," presented at the Electric Competition Roundtable of the Public Utilities Commission of Ohio, Columbus, Ohio, June 19, 1997.

"Securitization: A Free Lunch or Market Risk Trap for Consumers?" presented at 1997 NASUCA Mid-Year Meeting, Charleston, South Carolina, June 10, 1997.

"Nuclear Power in a Restructured Electric Utility Industry," presented at Nuclear Engineering Seminar, NE 881, The Ohio State University, Columbus, Ohio, May 27, 1997.

Presentation before Stranded Cost Working Group of the Virginia State Corporation Commission, Richmond, Virginia, May 21, 1997.

"The U.S. Experience with Wholesale Market Competition," presented at The Canadian Institute Conference, "Electricity Competition and Transmission: Open Access in Canada and U.S. Trade," Toronto, Canada, May 15, 1997.

"Electric Industry Restructuring: Activities and Issues Around the Country," presented at Georgia Public Service Commission Electric Restructuring Workshop, Atlanta, Georgia, April 4, 1997.

"Nuclear Power In a Competitive Generation Market: Delicate Hothouse Flowers or Invasive Kudzu?" presented at Oak Ridge National Laboratory, Oak Ridge, Tennessee, January 30, 1997.

"Nuclear Power In a Competitive Generation Market: Delicate Hothouse Flowers or Invasive Kudzu?" presented at "Nuclear Power In a Competitive Era: Asset or Liability?" sponsored by NARUC and The Nuclear Waste Program Office, Fort Myers, Florida, January 24, 1997.

"Economics of 'Stranded Cost' for Electric Utilities," presented at University of Illinois at Chicago, Department of Economics Seminar, Chicago, Illinois, December 6, 1996.

PRESENTATIONS — continued

"Developing a Merger Policy in a Competitive Electric Market," The Federal Energy Bar Association Mid-Year Meeting, Energy Mergers Panel, Washington, D.C., November 14, 1996.

"The Impact of Mergers on Retail Competition," presented at Institute of Public Utilities Michigan State University Conference, "Antitrust, Merger Guidelines, and Regulation of Utility Consolidation, Washington, D.C., November 7, 1996.

"A State Regulatory Perspective on FERC Open Access," presented at American Public Power Association "Pre-Seminar Workshop: FERC Orders No. 888 and No.889 on Open Access," Williamsburg, Virginia, October 27, 1996.

"Determining Stranded Cost Liability," presented to the Public Utilities Commission of Ohio, Columbus, Ohio, August 26, 1996.

"Implications of Changing Risks in the Electric Utility Industry: Regulatory Strategies," presented at the 1996 Western Conference of Public Service Commission's 55th Annual Convention, Snowbird, Utah, June 10, 1996.

"Overview of Stranded Cost Issues: A Regulatory Perspective," presented at EDS Financial Issues Conference, Stone Mountain, Georgia, May 7, 1996.

"Regulatory Treatment of Stranded Costs and Benefits," presented at the Seventh Institute of Public Utilities' NARUC Advanced Regulatory Studies Program, Annapolis, Maryland, January 25, 1996.

"Implementation and State Repercussions of the FERC Mega-NOPR," presented at the Seventh Institute of Public Utilities' NARUC Advanced Regulatory Studies Program, Annapolis, Maryland, January 25, 1996.

"Overview of State Commission Action on Electric Utility Industry Restructuring," presented to the Virginia-Maryland-Delaware Association of Electric Cooperatives, Richmond, Virginia, January 22, 1996.

"Overview of State Commission Action on Electric Utility Industry Restructuring," presented to the Ohio Public Utilities Commission, January 17, 1996.

"Mitigating Transition Costs: Options for Regulators and Utilities," presented at "Transition Costs in a Restructuring Electric Industry Workshop," at the Third DOE-NARUC National Electricity Forum, Washington, D.C., December 3, 1995.

PRESENTATIONS — continued

"Overview of Electric Power Issues," for the Georgia Public Service Commission, Atlanta, Georgia, October 12 and 13, 1995.

"Public Utility Commissions and the SO₂ Allowance Trading Program," presented at MIT Energy and Environmental Policy Workshop, Massachusetts Institute of Technology, Cambridge, Massachusetts, October 5, 1995

"Achieving Compliance with FERC's Evolving Regulations," presented at "Valuing and Recovering Stranded Costs in the New Age of Competitive Power," held by The Center for Business Intelligence, Washington, D.C., September 22, 1995.

Panel Participant at "The Illinois Electricity Policy Summit," panel on "The Influence of Technology," sponsored by the Illinois Commerce Commission and the Kellogg School of Management, Northwestern University, Evanston, Illinois, September 21, 1995.

"State vs. Federal: Whose Way Will Prevail in the Move to Deregulation?" 1995 Proscreen II Forum, "The Transition to Market-Based Planning," Atlanta, Georgia, September 19, 1995.

"The Future of Environmental Regulation," 1995 Proscreen II Forum, "The Transition to Market-Based Planning," Atlanta, Georgia, September 18, 1995.

"Summary of State Commission Comments on the Federal Energy Regulatory Commission's Supplemental Notice of Proposed Rulemaking (Docket No. RM94-7-001) 'Recovery of Stranded Costs by Public Utilities,'" NARUC Committee on Electricity Retreat, Knoxville, Tennessee, September 14, 1995.

"Regulatory Treatment of Stranded Costs," (with Scott Hempling) presented at the NARUC Annual Regulatory Studies Program, Michigan State University, East Lansing, Michigan, August 9, 1995.

"Environmental Issues and Externalities in Regulation," presented at the NARUC Annual Regulatory Studies Program, Michigan State University, East Lansing, Michigan, August 3, 1995.

"How is the Clean Air Act's Allowance Trading Program Working?" Mid-America Regulatory Commissioners Conference, "The Regulatory Forecast: Change for the Better?" Indianapolis, Indiana, June 12, 1995.

PRESENTATIONS — continued

"What State Commissions Will Look for When Dealing with Stranded Cost," presented at "Successfully Overcoming Stranded Investment in the New Competitive Power Market," held by International Business Communications, Lake Buena Vista, Florida, May 16, 1995.

Round Table Participant, Stranded Costs Plenary Session at The U.S. Department of Energy and National Association of Regulatory Utility Commissioners' Second National Electricity Forum, Providence, Rhode Island, April 21, 1995.

"Should Externalities be Considered, and if so, by Whom?" Social Costing Workshop, held by the British Columbia Utilities Commission, Vancouver, British Columbia, March 29, 1995.

"Incentives-Based Approaches to Controlling Externalities," presented at Brave New World: Managing Externalities in a Competitive Electric Utility Industry, sponsored by Center for Regulatory Studies, Chicago, Illinois, November 17, 1994.

"Stranded Costs. Through the Looking Glass: Regulatory Adventures in the Land of Retail Wheeling in Electric Utilities and Bottleneck Competition in Telecommunications," National Association of State Utility Consumer Advocates (NASUCA) Annual Meeting, Reno, Nevada, November 14, 1994.

Round Table Participant, "Equity and Efficiency in Retail Markets: How Can They Be Optimized?," The U.S. Department of Energy and National Association of Regulatory Utility Commissioners' National Electricity Forum, Washington, D.C., November 2, 1994.

Moderator and speaker, session on "Application of Market-Based Mechanisms for Environmental Protection--What Works? What Doesn't? What is Next?," Public Policy Roundtable on Business and the Environment, Sponsored by the School of Public Policy and Management and the School of Natural Resources, The Ohio State University, Columbus, Ohio, October 14, 1994.

"Electric Utility Regulation and the Environment: Recent Actions and Debate in the U.S.," Principles and Practices of Social Costing Conference, Saskatoon, Saskatchewan, September 22, 1994.

Chairperson, Electricity Industry Restructuring Sessions of the Ninth NARUC Biennial Regulatory Information Conference, Columbus, Ohio, September 7-9, 1994.

PRESENTATIONS — continued

"Regulatory Treatment of Environmental Issues," presented at the NARUC Annual Regulatory Studies Program, East Lansing, Michigan, August 3, 1994.

"Implications of the Clean Air Act Amendments of 1990 for State Regulation," presented at the NARUC Annual Regulatory Studies Program, East Lansing, Michigan, August 4, 1994.

Participant in Harvard Electricity Policy Group Seminar "The Environmental Impacts of Increased Competition in the U.S. Electric Industry," Harvard University, Cambridge, Massachusetts, April 28, 1994.

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

Panelist, "New Partnerships: Economic Incentives for Environmental Management," cosponsored by Air & Waste Management Association, the U.S. EPA, Office of Policy, Planning and Evaluation, and the U.S. EPA, Office of Air Quality Planning and Standards, Rochester, New York, November 3, 1994.

"New Times for the U.S. Electric Power Industry," presented at the Fifty-Third Annual Meeting of the Membership of the Ohio Association of Economists and Political Scientists, Ohio Wesleyan University, Delaware, Ohio, October 22-23, 1993.

"State Implementation of the Clean Air Act of 1990 and the Energy Policy Act of 1992," presented to the National Association of Regulatory Utility Commissioners Staff Subcommittee on Accounts, Aspen, Colorado, September 20-23, 1993. Organizer and Speaker, "National Seminars on the Public Utility Commission Implementation of the Energy Policy Act of 1992," sponsored by U.S. Department of Energy, Eastern Seminar, Indianapolis, Indiana, July 19-20, 1993.

Organizer and Speaker, "National Seminars on the Public Utility Commission Implementation of the Energy Policy Act of 1992," sponsored by U.S. Department of Energy, Western Seminar, Portland, Oregon, July 15-16, 1993.

Panelist, "Overview of the Policy Choices of State Commissions Under the Energy Policy Act of 1992: A Look at the Regulatory Forest," National Conference of Regulatory Attorneys, Whitefish, Montana, June 14, 1993.

Panelist, "Impact of EPA's Allowance Auction," AER*X Symposium, Washington, D.C., May 18, 1993.

PRESENTATIONS — continued

Panelist, "IRP/LCP Versus Competitive Markets and Incentives: Conflicts, Complements, or Evolution?" The Eleventh National Regulatory Conference, Richmond, Virginia, May 18, 1993.

Organizer and Speaker, The "NRRI Clean Air Workshop: Workshop on Developing Public Utility Commission Rules and Procedures for Electric Utility Compliance with the Clean Air Act Amendments of 1990," for Western States, sponsored by U.S. Environmental Protection Agency and U.S. Department of Energy, Albuquerque, New Mexico, March 18-19, 1993.

Discussant, "SO₂ Trading Impacts on a Utility: Internalizing an Externality," Workshop on Market-Based Approaches to Environmental Policy, sponsored by the MacArthur Foundation, Chicago, Illinois, February 17, 1993.

Organizer and Speaker, The "NRRI Clean Air Workshop: Workshop on Developing Public Utility Commission Rules and Procedures for Electric Utility Compliance with the Clean Air Act Amendments of 1990," for New England States, sponsored by U.S. Environmental Protection Agency and U.S. Department of Energy, Portsmouth, New Hampshire, January 21-22, 1993.

Chairperson, Clean Air Act Section of the Eighth NARUC Biennial Regulatory Information Conference, Columbus, Ohio, September 9-11, 1992.

"The Clean Air Act: Ratemaking and Accounting Issues," presented at the NARUC Annual Regulatory Studies Program, Lansing, Michigan, August 5, 1992.

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.

Speaker at Mid-Atlantic Labor And Management Public Affairs Committee meeting, Long Island, New York, May 14, 1992.

PRESENTATIONS — continued

Organizer, Moderator, and Speaker, The "NRRI Clean Air Workshop: Workshop on Developing Public Utility Commission Rules and Procedures for Electric Utility Compliance with the Clean Air Act Amendments of 1990," for Midwestern States, sponsored by U.S. Environmental Protection Agency and U.S. Department of Energy, St. Louis, Missouri, May 7-8, 1992.

Organizer, Moderator, and Speaker, The NRRI Clean Air Workshop: Workshop on Developing Public Utility Commission Rules and Procedures for Electric Utility Compliance with the Clean Air Act Amendments of 1990, Southern and Eastern States, sponsored by U.S. Environmental Protection Agency and U.S. Department of Energy, Charlotte, North Carolina, April 14-15, 1992.

"Emissions Trading and Regulatory Issues" to the Minnesota Public Utilities Commission, St. Paul, Minnesota, August 20, 1991.

Panelist, "What Price Power? The Electric Utility Industry Meets the Market: PUHCA Reform, PURPA Reform, Competitive Bidding, IPPs, Bulk Power," Mid-America Regulatory Conference (MARC), Little Rock, Arkansas, June 3, 1991.

Panelist, "Roundtable on Energy and the Environment," New England Conference of Public Utilities Commissioners, Inc. 44th Annual Symposium (NECPUC), Newport, Rhode Island, May 22, 1991.

K. J. Rose, Organizer, Presenter, and Moderator, NRRI Workshop on "Implementing the Electric Utility Provisions of The Clean Air Act Amendments of 1990," Chicago, Illinois, May 9 through May 10, 1991.

Organizer and Presenter, NRRI Workshop on "Implementing the Electric Utility Provisions of The Clean Air Act Amendments of 1990," Scottsdale, Arizona, April 19 through April 20, 1991.

Organizer and Moderator, NRRI Workshop on "Implementing the Electric Utility Provisions of The Clean Air Act Amendments of 1990," Arlington, Virginia, January 30 through January 31, 1991.

PRESENTATIONS — continued

“Effect of Competition on Electric Generation Costs,” presented at ORSA/TIMS Joint National Meeting: Productivity and Global Competition, Philadelphia, Pennsylvania, October 1990.

“Efficient Industry Structure of Electric Generation Under Contestable Markets,” presented at the Eleventh Annual North American Conference: Energy Markets in the 1990s and Beyond, International Association for Energy Economics, Los Angeles, California, 1989.

“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.

BEFORE THE ARIZONA CORPORATION COMMISSION

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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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1 **INTRODUCTION**

2 Q. Please state your name and business address.

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

5
6 Q. By whom are you employed and in what capacity?

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

8
9 Q. What is your educational background?

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

16
17 Q. Please describe your professional experiences.

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

19
20 Q. What is the purpose of your testimony in this proceeding?

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

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

28 ...

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

5
6 Q. Will you summarize the criteria that must be met for the application of FAS 71 to
7 financial statements of enterprises with regulated operations?

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

16
17 Q. Has the Financial Accounting Standards Board (FASB) issued other statements that relate
18 primarily to regulated enterprises?

19 A. Yes. FASB Statement No. 101 (FAS 101) titled Regulated Enterprises-Accounting for
20 the Discontinuation of Application of FASB Statement No. 71 was issued in response to
21 the potential deregulation of regulated entities. This statement was issued in December
22 1988 with an effective date for discontinuation of FAS 71 that occurs in fiscal years
23 ending after December 15, 1988. FASB Statement No. 90 (FAS 90) titled Regulated
24 Enterprises-Accounting for Abandonments and Disallowances of Plant Costs as well as
25 FASB Statement No. 92 (FAS 92) titled Regulated Enterprises-Accounting for Phase-In
26 Plans relate primarily to regulated enterprises. FASB Statement No. 121 (FAS 121) titled
27 Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to be
28 Disposed of though more general accounting is applicable to regulated enterprises.

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

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

10

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

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

17

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

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

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

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

12
13 Q. Does FASB 101 provide guidance for regulated entities on how they should evaluate
14 whether to continue to recognize all or some portion of the regulatory assets and
15 regulatory liabilities, respectively, that originated from the separable portion of the
16 business whose pricing is being deregulated and exist at the date that FAS 101 is applied?

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

21
22 Q. What exactly is meant by the term "regulated cash flows"?

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

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

3 A. The consensus of the EIFT is that there is no elimination of the regulatory asset and
4 regulatory liabilities that originated in the separable portion of the business to which FAS
5 101 is being applied and for which the rate order or deregulatory legislation (whichever is
6 necessary to effect change in the jurisdiction) specifies the collection of regulated cash
7 flows until one of three events occurs. One, the regulatory assets are recovered by
8 regulated cash flows or the regulatory liabilities are settled through collection of
9 regulated cash flows. Two, the regulatory assets are impaired or the regulatory liabilities
10 are eliminated by the regulator. Third, the separable portion of the business from which
11 the regulated cash flows are derived no longer meets the criteria for application of
12 FAS 71.

13
14 Q. Were other issues addressed by the EITF in relation to the application of FAS 101?

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

19
20 Q. Did the EIFT reach a consensus on this issue?

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

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1 Q. Can you summarize how these accounting pronouncements will be applied, in general?
2 A. Generally and simplistically, an analysis will be necessary of all regulated cash inflows
3 with an associated comparison of costs to be recovered, i.e. cash outflows. To the extent
4 that the inflows exceed the outflows, no write-offs or write-downs will be required. If the
5 outflows exceed the inflows, write-offs and write-downs will occur. The financial
6 community will continue to look for assurances from the regulator that the assets
7 remaining on the books of the company will be provided a return on and recovery of the
8 investments. To the extent that assurances are not provided, the financial community will
9 require some recognition of impairment in accordance with FAS 121.

10
11 Q. Based upon the Staff's recommendations sponsored by Dr. Kenneth Rose as they relate to
12 stranded costs recovery, will the accounting standards discussed throughout this
13 testimony require financial statement adjustments by the Affected Utilities if adopted by
14 the Commission in this proceeding?

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

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23 Q. Does this complete your direct testimony?

24 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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1 In August of 1985, I was promoted to a Construction Audit Specialist. In that capacity, I
2 was responsible for the audit of Consumers Power Company's Midland Nuclear Power
3 Plant construction expenditures as well as the ongoing auditing responsibilities described
4 above. At the time of this promotion, the plant had not yet been abandoned but was
5 facing extreme cost overruns. During the course of the examination, the plant was
6 abandoned. During the abandonment proceedings before the Commission, the
7 abandonment was modified with a portion of the plant being converted to a Public Utility
8 Regulatory Power Act (PURPA) cogeneration facility, which is the infamous Midland
9 Cogeneration Venture (MCV). I presented the accounting implications of the Staff's
10 recommended recovery mechanism which were subject to the Financial Accounting
11 Standards Board Statement Number 90 - Accounting for Plant Abandonments. In
12 August of 1988, I was promoted to Manager of the Auditing Section of the Electric
13 Division. In that position, my responsibilities included the supervision of the Auditing
14 Section in the performance of examinations of electric, steam and water utilities for all
15 matters requiring accounting and auditing expertise. In July of 1995, I transferred to the
16 position of Executive Assistant to one of the Commissioners. In that capacity, it was my
17 responsibility to provide guidance to the Commissioner on ratemaking and accounting
18 implications of proposals of all parties' positions in proceedings before the Commission.
19 During this timeframe, the gas industry was evaluating the merits of customer choice at
20 the local distribution level, deregulation of the telecommunications industry was being
21 legislated at the state and federal levels, and a customer choice alternative for the electric
22 industry was being advocated by the Governor of the State. It was my responsibility to
23 monitor the developments at the federal and state levels and advise the Commissioner
24 when necessary.

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

9
10 Q. Are you a Certified Public Accountant?

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

13
14 Q. What has been your experience in regulatory proceedings?

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

19
20 Q. Have you ever testified before the Arizona Corporation Commission?

21 A. No, I have not.
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TESTIMONY OF SHERYL L. HUBBARD
SUMMARY

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The Implications Of The Statement Of Financial Accounting Standards No. 71, Resulting From The

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Recommended Stranded Cost Calculation And Recovery Mechanism

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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.

RECOMMENDATIONS

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 potential 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.