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BEFORE THE ARIZONA CORPORATION

Arizona Corporation Commission

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2 CHAIRMAN
3 JIM IRVIN
4 COMMISSIONER
5 MARC SPITZER
6 COMMISSIONER

7 IN THE MATTER OF THE GENERIC
8 PROCEEDINGS CONCERNING ELECTRIC
9 RESTRUCTURING ISSUES.

Docket No. E-00000A-02-0051

10 IN THE MATTER OF ARIZONA PUBLIC
11 SERVICE COMPANY'S REQUEST FOR A
12 VARIANCE OF CERTAIN REQUIREMENTS
13 OF A.A.C. R14-2-1606.

Docket No. E-01345A-01-0822

14 IN THE MATTER OF THE GENERIC
15 PROCEEDING CONCERNING THE
16 ARIZONA INDEPENDENT SCHEDULING
17 ADMINISTRATOR.

Docket No. E-00000A-01-0630

18 IN THE MATTER OF TUCSON ELECTRIC
19 POWER COMPANY'S APPLICATION FOR A
20 VARIANCE OF CERTAIN ELECTRIC
21 COMPETITION RULES COMPLIANCE
22 DATES.

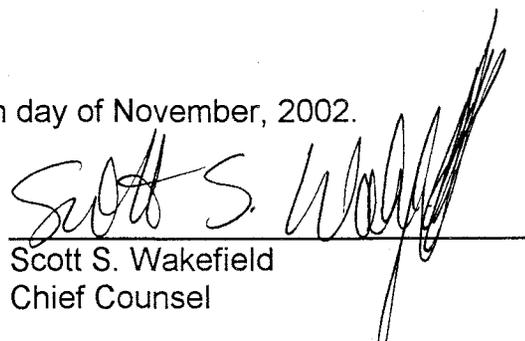
Docket No. E-01933A-02-0069

23 IN THE MATTER OF THE APPLICATION
24 OF TUCSON ELECTRIC POWER
COMPANY FOR APPROVAL OF ITS
STRANDED COST RECOVERY.

~~Docket No. E-01933A-98-0471~~

The Residential Utility Consumer Office ("RUCO") hereby provides notice of filing the Responsive Testimony of Dr. Richard A. Rosen on Track B issues, in the above-referenced matter.

RESPECTFULLY SUBMITTED this 18th day of November, 2002.


Scott S. Wakefield
Chief Counsel

1 AN ORIGINAL AND EIGHTEEN COPIES
2 of the foregoing filed this 18th day
3 of November, 2002 with:

4 Docket Control
5 Arizona Corporation Commission
6 1200 West Washington
7 Phoenix, Arizona 85007

8 COPIES of the foregoing hand delivered
9 this 18th day of November, 2002 to:

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E-01933A-98-0471

By Cheryl Fraulob
Cheryl Fraulob

BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE)
GENERIC PROCEEDINGS)
CONCERNING ELECTRIC)
RESTRUCTURING ISSUES)

Docket No. E-00000A-02-0051 ET AL.

REBUTTAL TESTIMONY

OF

DR. RICHARD A. ROSEN

**On Behalf of the Arizona
Residential Utility Consumer Office**

**Tellus Institute
11 Arlington Street
Boston, MA 02116-3411
Tel: 617/266-5400**

REBUTTAL TESTIMONY ON TRACK B ISSUES

NOVEMBER 18, 2002

1 I. INTRODUCTION AND QUALIFICATIONS

2

3 Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

4 A. My name is Dr. Richard A. Rosen. My business address is Tellus Institute, 11
5 Arlington Street, Boston, MA 02116-3411.

6 Q. ARE YOU THE SAME DR. RICHARD A. ROSEN WHO FILED DIRECT
7 TESTIMONY ON TRACK B ISSUES?

8 A. Yes, I am.

9 Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

10 A. The purpose of my rebuttal testimony is primarily to show how IRP and least-cost
11 planning principles can help the Arizona Corporation Commission (ACC) to sort
12 out the various proposals for the Track B process made by several other witnesses
13 in the Track B portion of the docket. These principles will allow the Commission
14 to determine which of these proposals make sense because they are consistent
15 with least-cost planning, as compared to those proposals that do not make sense
16 because they conflict with least-cost planning. I will comment on the direct
17 testimony of Mr. Broderick, Mr. Kebler, Mr. Roach and Mr. Mitchell.

18 Q. WHAT IS YOUR GENERAL REACTION TO MR. MITCHELL'S DIRECT
19 TESTIMONY?

20 A. I generally agree with everything that Mr. Mitchell says in his direct testimony on
21 Track B. I particularly agree with the description on page 6 of his testimony as to
22 how a least-cost planning process should be carried out. He makes the same key
23 point that I made in my direct testimony, namely that "the only feasible way to

1 evaluate the complex interactions between power opportunities associated with
2 these bids is to simulate the entire electrical system using computer programs
3 designed for this task.” He also agrees with me on page 8 of his testimony that
4 the utilities should not limit their solicitations to a small group of specific
5 products that appear to be needed, especially not to the ones the utilities list in
6 their November 4, 2002 testimony. Finally, if APS does not have a dispatch
7 model that can “capture the impact of transmission constraints in the simulation
8 process” for modeling the dispatch of the company’s power plants, as Mr.
9 Mitchell states on page 10, then APS will need to obtain better software for
10 carrying out that task. An adequate Track B evaluation process should model the
11 full transmission system of both APS and TEP, including load pockets and RMR
12 units.

13 Q. MR. BRODERICK RECOMMENDS THAT THE TRACK B PROCESS
14 UTILIZE THE NEW ECONOMIC CRITERIA FOR LEAST-COST PLANNING
15 ADOPTED BY THE COLORADO PUC. DO YOU AGREE?

16 A. No. While I advocate a least-cost planning process, Colorado’s new criterion is
17 not quite the correct criterion, for a simple reason. The new economic criterion
18 established by the PUC minimizes the net present value of “rate impacts,” which
19 means rates. This compares to the traditional least-cost planning criterion which
20 minimizes the net present value of revenue requirements, not rates. The
21 difference is that rate impacts are equal to revenue requirements divided by the
22 total retail sales. Thus, the new Colorado criterion is an unweighted calculation,
23 namely the rates are not weighted by the amount of power bought at each rate

1 level. Colorado's unweighted calculation does not consider any growth in
2 demand, and as a result, the new Colorado criterion does not minimize the total
3 cost of a given resource portfolio to society, as the traditional criterion does. Yet,
4 this latter criterion is the one that makes more sense for use by any public utilities
5 commission. The traditional least-cost planning criterion minimizes the present
6 value of the total electric bills to customers for a given utility over the relevant
7 planning period.

8 Q. MR. BRODERICK AND SEVERAL OTHER WITNESSES RECALCULATE
9 APS' UNMET NEED FOR POWER IN EACH YEAR, AND THEY ESTIMATE
10 BOTH A NET CAPACITY REQUIREMENT AND A NET ENERGY
11 REQUIREMENT. DOES IT MAKE SENSE TO SPECIFY THE NET NEED IN
12 TERMS OF BOTH OF THESE QUANTITIES?

13 A. No. As I discussed in my direct testimony, it is the net needed amount of capacity
14 that is of primary importance. This capacity could be supplied by additional
15 generation or by DSM. The amount of energy that this capacity produces in each
16 future year will depend on the complete portfolio of resources within which it is
17 evaluated. The same type of capacity product might generate very different
18 amounts of energy in two different portfolios. Therefore, the "unmet need"
19 assessment should not include any statement about the amount of energy that is
20 needed. The amount of energy "needed" from each resource in each year will be
21 a natural result of the least-cost planning process, and will be determined by
22 running an appropriate dispatch model. This is true for both existing resources
23 and new resources, and existing transmission system constraints will strongly

1 influence these dispatch results for both new and existing generation resources,
2 depending upon where they are located.

3 Q. SEVERAL WITNESSES SUCH AS MR. BRODERICK HAVE INDICATED
4 THAT THERE IS A NEED FOR AN ADJUSTMENT TO THE NET NEED
5 CALCULATION FOR THE RMR UNITS OF THE UTILITY SYSTEM. IS
6 THIS TRUE?

7 A. The answer to this question depends on the dispatch modeling approach used. If
8 the least-cost planning model used to determine the least-cost portfolio includes
9 all reasonable detail on the transmission constraints that lead to load pockets in
10 certain hours of the year, then such a model will be able to determine the capacity
11 and energy needs to serve RMR requirements and the more general system
12 generation needs simultaneously. This implies that a separate calculation or
13 adjustment for RMR needs will not have to be made.

14 Q. MR. BRODERICK ALSO SUGGESTS ON PAGE 17 OF HIS TESTIMONY
15 THAT THE TRACK B PROCESS SHOULD SUBJECT ALL OF APS' GAS
16 AND OIL UNITS TO ECONOMIC COMPETITION. DO YOU AGREE?

17 A. Yes, I agree with Mr. Broderick on this proposal in the sense that a proper least-
18 cost planning process will automatically subject all of APS' generating units to
19 competition in every hour of the year. Whatever the least-cost combination of
20 capacity and/or energy from market bids is that can economically substitute for
21 the capacity and/or energy of any APS (or TEP) generating plant will do so.
22 Again, the information as to which utility units will need to run more or less than
23 they have in the past will be automatically provided as the outcome of the

1 dispatch of the least-cost resource portfolio. As Mr. Roach states on page 25 of
2 his testimony, if the capacity chosen as part of the least-cost plan is dispatchable,
3 then “a supplier’s offered prices would determine how much energy it would
4 sell.” However, this also implies that Mr. Roach is contradicting himself when,
5 on page 29, he accepts the Staff’s assumed load factor (really a capacity factor) of
6 38 percent when computing APS’ unmet energy need. No specific capacity factor
7 can be *assumed* for this purpose, and, therefore, Mr. Roach’s calculation of the
8 unmet energy need for APS is not correct.

9 Q. ON PAGE 9 OF HIS TESTIMONY, MR. ROACH IS CONCERNED THAT
10 APS’ PROPOSAL TO PURCHASE ECONOMY ENERGY OUTSIDE THE
11 CONTEXT OF THE TRACK B PROCESS WILL EXPOSE ITS RATEPAYERS
12 TO “RISK IN THE VOLATILE SPOT MARKETS OF THE WEST.” DO YOU
13 AGREE?

14 A. No. As long as both APS and TEP acquire a least-cost portfolio of resources that
15 includes sufficient generating *capacity* to cover their annual peak demand plus
16 their required reserve margin, then they will also be able to generate a sufficient
17 amount of energy from this portfolio to cover their energy requirements. This
18 conclusion follows from the fact that having enough capacity to cover their
19 required reserve margin means that their energy needs are also covered to a very
20 high degree of reliability. (This is true by definition. A required reserve margin is
21 determined by making sure that any unmet energy needs are extremely small.)

22 In addition, the projected costs of spot market energy would also be
23 included in the inputs to the least-cost planning model. Therefore, once the least-

1 cost portfolio is determined, that portfolio will already take into account a “least-
2 cost” level of reliance on the spot market. If, however, cheaper energy than
3 assumed in the inputs to the planning analysis turns out to be available for
4 purchase on a spontaneous basis in the future, then APS is simply proposing to
5 purchase that cheaper energy at that time in order to save ratepayers money. This
6 is quite reasonable, and will not expose ratepayers to any significant risk, since
7 their costs will never be higher than those implied by the initial least-cost plan.
8 That plan can only be improved by purchasing economy energy on an “as
9 available” basis.

10 Q. MR. KEBLER STATES ON PAGES 2-3 OF HIS TESTIMONY THAT IT IS
11 NOT NECESSARY “TO DISCUSS OR RESOLVE LEAST COST PLANNING,
12 DEMAND SIDE MANAGEMENT AND ENVIRONMENTAL RISK
13 MITIGATION IN THIS PROCEEDING.” DO YOU AGREE?

14 A. No, I do not agree with this statement by Mr. Kebler. All three of the issues he
15 mentions need to be addressed simultaneously in the context of IRP. If any one of
16 these issues is omitted, then electric rates to consumers will be unnecessarily high
17 in the long run. Furthermore, one of the reasons that Mr. Kebler gives for
18 maintaining this position is his claim that the Track B process could rely on an
19 auction process to select winning bids for standardized generation products.
20 However, this can not work. The problem with this proposal is that an auction
21 process could never determine *how much* (how many MWs of capacity) of each
22 standardized product would be part of a least-cost portfolio. Such an auction
23 could only determine which bids for a certain standardized product would be the

1 lowest price bids of that type. These lowest price bids for each standardized
2 product would, then, be the ones that should be included in the least-cost
3 optimization process. The higher-priced bids for those standardized products
4 could be omitted from the least-cost planning process as long as there were
5 enough of the lower-priced bids. Thus, there is no auction process that could
6 *directly* determine which standardized products, and how much of each
7 standardized product, it would be prudent for a utility to purchase in each year.

8 Q. SEVERAL WITNESSES INCLUDING MR. KEBLER URGE THAT THE
9 COMMISSION SHOULD PROVIDE A PROMPT PRUDENCY REVIEW FOR
10 THE BIDS ACCEPTED DURING THE TRACK B PROCESS, PRESUMABLY
11 TO HELP ENSURE THAT THE GENERATORS GET PAID. WHAT IS YOUR
12 REACTION TO THAT TESTIMONY?

13 A. First, if a utility signs a purchased power contract with an independent power
14 producer, the generator will get paid whether or not the utility gets to recover
15 those costs from ratepayers, so I do not understand why the potential bidders are
16 stressing this point so strongly. Secondly, a prudent selection process may take at
17 least 6-8 weeks, plus time for Commission approval through an adjudicated
18 hearing process, so the bidders will just have to be patient for the portfolio to be
19 approved by the Commission until the purchased power contracts can be
20 finalized, as appropriate. Thirdly, if, and only if, a least-cost planning process is
21 properly implemented to select the final portfolio of bids for each utility, should
22 that process be deemed to convey a significant degree of prudence on each
23 individual contract signed as a result of that process.

1 The type of prudence conveyed by the portfolio selection process would
2 be “planning prudence.” Each utility would still need to carry out the contract
3 negotiation process, and related implementation tasks needed for the final signing
4 of all contracts, prudently, in order for the utility to have been determined to have
5 acted prudently with respect to all key Track B issues by the Commission. This
6 would include the prudent implementation of all DSM programs selected as part
7 of the least-cost portfolio, as well as the signing of any purchased power
8 contracts. It would also include the construction of any new generation facilities
9 by the utility on a cost-of-service basis, if such a bid was selected as part of the
10 least-cost planning process. I have also discussed this issue in my direct
11 testimony.

12 Q. MR. KEBLER HAS SAID ON PAGE 13 OF HIS DIRECT TESTIMONY THAT
13 THE PARTICIPATION OF THE INDEPENDENT MONITOR IN THE
14 SOLICITATION PROCESS SHOULD CONVEY A SIGNIFICANT DEGREE
15 OF PRUDENCE ON THE SELECTION PROCESS, GIVEN THAT IT DOES
16 NOT MAKE SENSE TO USE THE STAFF’S PROPOSED “PRICE TO BEAT”
17 APPROACH. DO YOU AGREE?

18 A. No, I do not agree. The Independent Monitor can certainly help assure that the
19 selection process for the final portfolio is carried out properly, but, to repeat, only
20 if that selection process is a least-cost planning/IRP process can planning
21 prudence be conveyed to the end results.

22 Q. DOES THIS CONCLUDE YOUR TESTIMONY?

23 A. Yes, it does.