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BEFORE THE ARIZONA CORPORATION COMMISSION

WILLIAM A. MUNDELL
Chairman
JIM IRVIN
Commissioner
MARC SPITZER
Commissioner

AZ CORP COMMISSION
DOCUMENT CONTROL

IN THE MATTER OF THE GENERIC
PROCEEDINGS CONCERNING
ELECTRIC RESTRUCTURING

DOCKET NO. E-00000A-02-0051

IN THE MATTER OF ARIZONA PUBLIC
SERVICE COMPANY'S REQUEST FOR
VARIANCE OF CERTAIN
REQUIREMENTS OF A.A.C. 4-14-2-1606

DOCKET NO. E-01345A-01-0822

IN THE MATTER OF THE GENERIC
PROCEEDINGS CONCERNING THE
ARIZONA INDEPENDENT
SCHEDULING ADMINISTRATOR

DOCKET NO. E-00000A-01-0630

IN THE MATTER OF TUCSON
ELECTRIC COMPANY'S APPLICATION
FOR A VARIANCE OF CERTAIN
ELECTRIC POWER COMPETITION
RULES COMPLIANCE DATES

DOCKET NO. E-01933A-98-0471

ISSUES IN THE MATTER OF TUCSON
ELECTRIC POWER COMPANY'S
APPLICATION FOR A VARIANCE OF
CERTAIN ELECTRIC COMPETITION
RULES COMPLIANCE DATES

DOCKET NO. E-01933A-02-0069

**NOTICE OF FILING REBUTTAL
TESTIMONY**

Intervenor Panda Gila River, L.P. hereby provides notice of filing the Rebuttal
Testimony of Craig R. Roach, Ph.D. concerning the "Track A" issues in the above-captioned
dockets.

Arizona Corporation Commission

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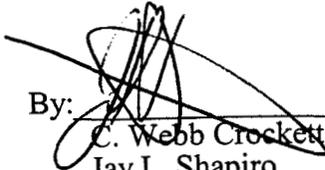
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RESPECTFULLY SUBMITTED this 11th day of June, 2002.

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See attached for filing and service list.

1286016.1/73262.005

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BEFORE THE ARIZONA CORPORATION COMMISSION

WILLIAM A. MUNDELL
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MARC SPITZER
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IN THE MATTER OF THE GENERIC PROCEEDINGS CONCERNING ELECTRIC RESTRUCTURING	DOCKET NO. E-00000A-02-0051
IN THE MATTER OF ARIZONA PUBLIC SERVICE COMPANY'S REQUEST FOR VARIANCE OF CERTAIN REQUIREMENTS OF A.A.C. 4-14-2-1606	DOCKET NO. E-01345A-01-0822
IN THE MATTER OF THE GENERIC PROCEEDINGS CONCERNING THE ARIZONA INDEPENDENT SCHEDULING ADMINISTRATOR	DOCKET NO. E-00000A-01-0630
IN THE MATTER OF TUCSON ELECTRIC COMPANY'S APPLICATION FOR A VARIANCE OF CERTAIN ELECTRIC POWER COMPETITION RULES COMPLIANCE DATES	DOCKET NO. E-01933A-98-0471
ISSUES IN THE MATTER OF TUCSON ELECTRIC POWER COMPANY'S APPLICATION FOR A VARIANCE OF CERTAIN ELECTRIC COMPETITION RULES COMPLIANCE DATES	DOCKET NO. E-01933A-02-0069

REBUTTAL TESTIMONY OF
CRAIG R. ROACH, Ph.D.
ON "TRACK A" ISSUES

ON BEHALF OF
PANDA GILA RIVER, L.P.

June 11, 2002

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I. PURPOSE AND SUMMARY OF TESTIMONY	1
II. I AGREE WITH STAFF THAT APS HAS BOTH GENERATION AND TRANSMISSION MARKET POWER, AND THAT THE ASSET TRANSFER CANNOT GO FORWARD WITHOUT THE COMMISSION ENSURING EFFECTIVE MITIGATION	2
A. It is crucial that the Commission rule, consistent with its original rulings on asset transfer, that competitive procurement be the primary measure for mitigating APS' market power.	2
B. The mitigation measures identified in my Direct Testimony will effectively address Staff's market power concerns	4
C. I also agree with Staff that the Codes of Conduct must be broadened, but I have some concerns about (a) the implementation of Staff's "enhanced prudence standard" and (b) one Staff witness' inclination to intervene in short-term markets	5
III. I AGREE WITH APS THAT VIBRANT WHOLESALE COMPETITION CLEARLY IS IN THE PUBLIC INTEREST, AND THAT THERE ARE A SIGNIFICANT NUMBER OF POTENTIAL COMPETITORS IN THE APS MARKET	7
A. APS does have market power, however, because it can deny these potential competitors an opportunity to compete	7
B. Many of the differences in my SMA and that of APS could be resolved by a better understanding of how transmission constraints affect competition	10
IV. THE RUCO TESTIMONY IS LARGELY MISPLACED SINCE IT IS LARGELY A CRITIQUE OF FERC	15
V. RECOMMENDATIONS TO THE COMMISSION	20

1 I. PURPOSE AND SUMMARY OF TESTIMONY

2 Q. PLEASE STATE YOUR NAME, POSITION, AND BUSINESS ADDRESS.

3 A. My name is Craig R. Roach. I am a partner with Boston Pacific Company, Inc.
4 My business address is 1100 New York Avenue, NW, Suite 490 East, Washington,
5 DC 20005.

6 Q. ARE YOU THE SAME CRAIG R. ROACH WHO FILED DIRECT
7 TESTIMONY IN THIS PROCEEDING?

8 A. Yes.

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

10 A. The purpose of my Rebuttal Testimony is to respond to the Direct Testimony filed
11 by the Arizona Corporation Commission Staff ("Staff") Arizona Public Service
12 Company ("APS"), and by the Arizona Residential Utility Consumer Office
13 ("RUCO").

14 Q. PLEASE SUMMARIZE YOUR TESTIMONY.

15 A. I agree with the Staff that APS possesses generation and transmission market
16 power and I conclude that the best mitigation is for APS to competitively procure
17 (through a combination of bilateral purchases and a bid solicitation process) 100%
18 of its Standard Offer Service requirements. I also conclude that this will allow the
19 Commission to assert and maintain its jurisdiction over APS after the asset
20 transfer.

21 I agree with APS that competitive procurement is the quid pro quo for asset
22 transfer. I disagree with APS' contention that, in the absence of competitive
23 procurement, APS lacks generation and transmission market power; the refusal to
24 conduct competitive procurement is, in-and-of-itself, an exercise of market power
25 by APS.

26 Finally, I conclude that the concerns expressed by RUCO's witness are

1 largely irrelevant because they are largely an argument against FERC policies and
2 do not address the issues of asset transfer and competitive procurement which have
3 been set for this proceeding.

4 Q. IN LIGHT OF THE OTHER TESTIMONIES, HAVE YOU CHANGED YOUR
5 RECOMMENDATIONS TO THE COMMISSION?

6 A. No. My recommendations remain as they were in my Direct Testimony. The key
7 recommendation is that the Commission prohibit the transfer of APS generation
8 assets to its Affiliate unless and until the Affiliate in fact will face competitive
9 challenges on the price and non-price terms at which it will sell back to APS to
10 serve Standard Offer customers. That is, the asset transfer must be conditioned on
11 competitive procurement for 100% of APS' Standard Offer needs.

12 **II. I AGREE WITH STAFF THAT APS HAS BOTH GENERATION AND**
13 **TRANSMISSION MARKET POWER, AND THAT THE ASSET TRANSFER**
14 **CANNOT GO FORWARD WITHOUT THE COMMISSION ENSURING**
15 **EFFECTIVE MITIGATION.**

16 A. It is crucial that the Commission rule, consistent with its original rulings
17 on asset transfer, that competitive procurement be the primary measure
18 for mitigating APS' market power.

19 Q. PLEASE SUMMARIZE YOUR RESPONSE TO STAFF'S DIRECT
20 TESTIMONY.

21 A. I agree with much of what Staff had to say. First and foremost, I agree with Staff's
22 conclusion that APS has both generation and transmission market power, and that
23 this market power simply will be transferred to PWEC with the asset transfer¹
24 unless the Commission implements effective mitigation. I also agree that a broader
25 Code of Conduct is required to govern affiliate transactions.²

26 My only notable disappointment is that Staff did not go on to state that
competitive procurement must be the primary measure for mitigating generation

¹ Direct Testimony of Matthew Rowell at page 8 lines 3 to 9.

² Direct Testimony of Barbara Keene at page 7 line 11 to page 8 line 20.

1 market power. APS has an ample number of potential competitors who could
2 supply power to Standard Offer customers, but the Commission must order APS to
3 conduct competitive procurement so that those competitors actually have an
4 opportunity to compete; i.e., have the opportunity to offer Standard Offer
5 consumers a better deal than APS in terms of price, risk, and reliability.

6 Q. WHAT REMEDY DOES STAFF PROPOSE?

7 A. The Staff proposes that utilities submit a market power study and mitigation plan.
8 Upon Commission approval of the mitigation plan, the utility would be free to
9 transfer its generation assets. The exception would be for must-run plants; here the
10 Staff recommends continued cost-plus regulation. In addition, any utility having or
11 anticipating transactions with an affiliate would also have to propose a Code of
12 Conduct to cover such transactions.

13 Q. DO YOU AGREE WITH A REQUIREMENT FOR A MARKET POWER
14 STUDY AND MITIGATION PLAN?

15 A. Yes. However, the record in this proceeding already contains market power
16 studies and a recommendation for mitigation. Specifically, APS and I each
17 conducted a test for market power using the method now required by FERC; this is
18 called the Supply Margin Assessment (SMA). Both analyses show that there is the
19 potential for aggressive competition in the APS market from (a) in-area merchants,
20 (b) jointly owned plants in-area, and (c) imports from throughout the Western U.S.
21 The problem arises because APS has the ability to block that competition by its
22 exercise of generation and/or transmission market power. Most notably, APS
23 could exercise this market power by simply not allowing these competitors an
24 opportunity to compete for its Standard Offer Customers.

25 Q. DID YOUR MARKET POWER ANALYSIS REACH THE SAME
26 CONCLUSION AS APS' CONCERNING WHETHER APS HAS MARKET

1 POWER?

2 A. No. My analysis concluded that APS had generation market power, APS' analysis
3 concluded that no market power existed. My conclusion was based upon APS'
4 refusal to conduct competitive procurement as part of the quid pro quo for the asset
5 transfer. Again, I do not disagree that there are a good number of potential
6 competitors. My point is that APS' ability to deny those potential competitors an
7 opportunity to actually compete (by failing to live up to its agreement to
8 competitively procure Standard Offer needs) is, in-and-of-itself, an exercise of
9 market power.

10 B. The mitigation measures identified in my Direct Testimony will
11 effectively address Staff's market power concerns.

12 Q. HOW SHOULD THE COMMISSION ADDRESS THE MARKET POWER
13 CONCERNS RAISED BY YOU AND STAFF?

14 A. The Commission should ensure that competitors to APS' current generation have
15 the opportunity to compete. The means to this end is for the Commission to
16 maintain its original requirement that asset transfer be allowed only when linked to
17 competitive procurement. Competitive procurement for longer-term sales to serve
18 Standard Offer customers is the best mitigation for generation market power. That
19 is, it is the threat of a better deal from a competitor that will stop APS from
20 imposing on Standard Offer customers price or non-price terms inferior to those in
21 the competitive marketplace.

22 In addition, the Commission should (a) require APS to establish a short-term
23 energy market and (b) address transmission market power by requiring APS to
24 treat all competing generation as it would its own generation; that is, it must treat
25 all suppliers as Network Resources.

26 Q. DO YOU AGREE WITH STAFF WITH RESPECT TO MUST-RUN

1 FACILITIES?

2 A. I agree with Staff that market power is a special problem in load pockets like
3 Phoenix³ and that the concern should be focused on must-run facilities. However,
4 I disagree that these must-run facilities should remain under cost-plus regulation.⁴
5 As proposed in my Direct Testimony, these facilities can be subject to competitive
6 challenge through an RFP that allows time for other suppliers to build transmission
7 or generation in the Valley. In the interim, the price paid to these must-run plants
8 can be capped at one of the competitive price offers likely to emerge from such a
9 competitive market: the capacity and energy prices of a combustion turbine
10 facility.

11 C. I also agree with Staff that the Codes of Conduct must be broadened,
12 but I have some concerns about (a) the implementation of Staff's
13 "enhanced prudence standard" and (b) one Staff witness' inclination to
intervene in short-term markets.

14 Q. DO YOU AGREE WITH STAFF'S CALL FOR A BROADENED CODE OF
15 CONDUCT?

16 A. Yes. I agree that the Code of Conduct governing affiliate transactions should be
17 broadened.⁵ In my Direct Testimony, I suggested that the change be consistent
18 with that proposed recently by FERC.

19 Q. ARE THERE OTHER AREAS OF STAFF'S TESTIMONY THAT YOU WANT
20 TO ADDRESS?

21 A. Yes, there are two. The first has to do with Staff's proposal for an "enhanced
22 prudence standard." The second is an apparent inclination by one Staff witness to
23 suggest intervention in any short-term market.

24 Q. WHAT IS YOUR RESPONSE TO STAFF'S "ENHANCED PRUDENCE
25

26 ³ Direct Testimony of David Schlissel at page 2 lines 15-17.

⁴ Direct Testimony of Matthew Rowell at page 13 lines 3-6.

⁵ Direct Testimony of Barbara Keene at page 7 line 11 to page 8 line 20.

1 STANDARD?"

2 A. The Staff's "enhanced prudence standard" reflects legitimate goals, but I have
3 some concerns with its implementation. First, prudence is determined on the basis
4 of the information known or knowable at the time of the decision. For example, if
5 a ten-year PPA is won through competitive procurement, then the prudence of the
6 PPA is determined for the entire term on the basis of the information known at the
7 time of the competitive procurement. The prudence of that purchase is not
8 something that ought to be revisited by the Commission on an ongoing basis
9 during the ten-year term.

10 Second, Staff would require that the winning offer not only beat all
11 competing offers, but that it be shown to beat what APS would have charged for
12 power under cost-plus rates had it not transferred its assets.⁶ Such a standard
13 would be hard to implement. In the short-term, the difficulty lies with having to
14 make an adjustment for ratepayer risk; ratepayers face much more risk with a cost-
15 plus offer than with a pay-for-performance contract. In the longer run, the
16 difficulty will be in estimating what cost-plus rates would have been; how, for
17 example, would we account for increased maintenance cost or increased outages as
18 plants age?

19 Q. WHAT IS YOUR COMMENT ON THE STAFF'S APPARENT INCLINATION
20 TO INTERVENE IN SHORT-TERM MARKETS?

21 A. At the outset, I note that the exact nature of the competitive procurement and the
22 shorter-term markets is the subject of the Track B proceeding. As I stated in my
23 Direct Testimony, APS' requested asset transfer should be made contingent upon
24 the resolution of the Track B proceeding and implementation of the results. My
25 general view is that the Commission should focus primarily on assuring that utility

26

⁶ Direct Testimony of Matthew Rowell at page 7 lines 1-3.

1 distribution companies (UDCs) utilize other forms of competitive procurement and
2 that the short-term market account for an insubstantial (up to 5%) portion of their
3 capacity needs. In other words, my advice is to stay out of the short-term markets
4 rather than attempt to make short-term power artificially more appealing by
5 capping prices and limiting bidding behavior. Mr. Peterson's Testimony prompted
6 my concern by reflecting an inclination toward significant price intervention in
7 short-term markets.⁷

8 Q. DO STAFF WITNESSES VOICE CONCERNS REGARDING THE DEPTH OF
9 THE COMPETITIVE WHOLESALE MARKET IN ARIZONA?

10 A. Yes. Staff witness Jerry Smith believes that the wholesale market is currently
11 "thin" for the year 2002.⁸ My analysis has shown that, over time, Arizona has
12 enough new merchant generation coming on-line (around 6,500 MW) to produce a
13 vibrant competitive wholesale market.⁹ Again, I am confident that Arizona has a
14 significant number of potential competitors, my concern is that APS is exercising
15 market power by denying these potential suppliers an actual chance to compete at
16 wholesale to serve Standard Offer customers.

17 **III. I AGREE WITH APS THAT VIBRANT WHOLESALE COMPETITION**
18 **CLEARLY IS IN THE PUBLIC INTEREST, AND THAT THERE ARE A**
19 **SIGNIFICANT NUMBER OF POTENTIAL COMPETITORS IN THE APS**
20 **MARKET.**

21 A. APS does have market power, however, because it can deny these
22 potential competitors an opportunity to compete. APS would do so by
23 failing to use competitive procurement for 100% of the needs of
24 Standard Offer customers, which APS agrees is the quid pro quo for
25 asset transfer.

26 Q. IN WHAT WAYS DO YOU AGREE WITH APS' WITNESSES?

A. I agree with APS' witnesses in three ways. First, I agree that a vibrant wholesale

⁷ Direct Testimony of Paul Peterson at page 5 lines 21-25.

⁸ Direct Testimony of Jerry Smith at page 4 lines 15-28.

⁹ TEP witness Michael J. DeConcini also states that the power market is competitive at the wholesale level. Initial Testimony of Michael J. DeConcini at page 8 lines 13-16.

1 competitive market is in the public interest. I agree with most if not all of the
2 reasons stated by APS' witness in this regard. In particular, I take note and agree
3 with the claim that the switch from cost-plus ratemaking to market pricing creates
4 a significant new incentive to more efficiently produce power. Dr. Hieronymus
5 states:

6 The benefits of a competitive wholesale market flow primarily
7 from three causes. First, the progressive movement from cost
8 of service to market pricing produces powerful efficiency
9 incentives that did not exist previously. Related to this is the
10 improvement in management decision making for competitive
11 services as more profit-oriented managements replace utility
12 monopoly managements and their regulators as decision
13 makers concerning what to build, how to contract for fuels,
14 and how to operate generating facilities.¹⁰

15 Along with the fact that cost-plus ratemaking is risky for consumers, these
16 efficiency gains are a prime reason to move to market pricing.

17 Q. WHAT IS THE SECOND WAY IN WHICH YOU AGREE WITH APS?

18 A. Second, I agree that there are a great number of potential competitors in the APS
19 Market. As illustrated by the SMA analysis presented by APS, potential
20 competitors include (a) in-area merchants; (b) jointly-owned plants in-area; and (c)
21 imports from throughout the Western U.S. As I have explained several times, my
22 concern with market power in the APS Market is not with a lack of potential
23 competitors, but with a lack of real opportunities for those competitors to compete
24 at wholesale. That is, actual opportunities to stand up and offer a lower price,
25 lower risk, or higher reliability to Standard Offer customers. The potential for
26 wholesale competition would be wasted entirely, with respect to APS' customers,
for example, if APS' variance request is granted.

Q. WHAT IS THE THIRD WAY IN WHICH YOU AGREE WITH APS?

A. Third, I agree that asset transfer and competitive procurement are inextricably

¹⁰ Direct Testimony of William H. Hieronymus at page 2 line 21 to page 3 line 5.

1 linked. Mr. Davis states:

2 Q. ARE DIVESTITURE AND COMPETITIVE BIDDING
3 UNDER RULE 1606(B) LINKED?

4 A. Absolutely, both in the historical context of the Electric
5 Competition Rules and in the practical sense. I say
6 historical context because of the two provisions [Rule
7 1606(B) and Rule 1615] arose at the same time and
8 have always been synchronized in their starting date.
9 Even during the approval process of the 1999 APS
10 Settlement Agreement, the variance granted to Rule
11 1606(B) was referred to as a "corresponding delay," that
12 is, "corresponding" to the delay in implementation of
13 Rule 1615...

14 Moreover, the competitive bidding and other power
15 procurement provisions of Rule 1606(B) refer only to
16 "Utility Distribution Companies," which in the parlance
17 of the Electric Competition Rules is used only to
18 describe Affected Utilities such as APS in their post-
19 divestiture state of restructuring. Practically speaking, it
20 would make little sense for a still vertically-integrated
21 utility to bid for resources it already owns, a concession
22 that even merchant generators such as Sempra have
23 acknowledged in response to the Company's data
24 requests.

14 Again, competitive procurement for 100% of the needs of Standard Offer
15 Customers was (and is) the quid pro quo for allowing the asset transfer to proceed.

16 Q. ARE THESE AREAS OF AGREEMENT NEW?

17 A. No, but the explicitness of APS' language reflects a change of tone. I think Staff is
18 fair to put a spotlight on the contradiction in APS' market power testimony as
19 compared to its statements in connection with its request for a variance from
20 1606(B). Specifically, as, Staff points out, when speaking of market power, APS
21 says that a huge number of competitors exist. And, yet, when it came time to
22 address the issue of whether APS could comply with 1606(B), APS declared that
23 no competitors existed.¹² I hope APS is backing away from its claim that it cannot
24 comply with 1606(B).¹³

25 ¹¹ Direct Testimony of Jack Davis at page 9 line 22 to page 10 line 10.

26 ¹² Direct Testimony of David Schlissel at page 3 lines 5-8.

¹³ Dr. Hieronymus states that the large Western market "gives APS and the Commission the luxury of deciding whether it wants the PPA on other grounds, such as price, reliability, fuel diversity and so forth without needing to be

1 Q. IN WHAT WAYS DO YOU DISAGREE WITH APS' WITNESSES?

2 A. My primary disagreement is with APS' claim that the proposed Affiliate PPA
3 would sufficiently mitigate its market power.¹⁴ As I explained in my Direct
4 Testimony, a long-term affiliate PPA can be mitigation for market power if, and
5 only if, the price and non-price terms of that PPA have been tested against a
6 competitive procurement.¹⁵

7 B. Many of the differences in my SMA and that of APS could be resolved
8 by a better understanding of how transmission constraints affect
9 competition. For example, competitive procurement for longer-term
10 PPAs lessens the importance of these constraints as compared to
11 purchases in short-term markets.

12 Q. DOES YOUR SMA DIFFER FROM THAT PRESENTED BY APS?

13 A. Yes. While the overall results of my SMA and that from APS are similar, there are
14 some important differences in the details. APS did not present much in the way of
15 documentation so it is hard to identify reasons for the difference. In the hope that
16 APS will do the same in its Rebuttal Testimony, allow me to explain in a bit more
17 detail the approach I took; this will supplement the discussion and data in my
18 Direct Testimony including Exhibit No CRR-2.

19 Q. WHAT WERE THE KEY TASKS IN THE SMA?

20 A. There were four key tasks.

21 Q. WHAT WAS THE FIRST KEY TASK?

22 A. The first task was deciding what existing generators were located inside of the APS
23 control area. We chose a straightforward method of relying on the publicly
24 available data from the Western Systems Coordinating Council (WSCC). The
25 WSCC data groups generators by what it terms "Area." We simply took all of the
26 plants with an area listing of "APS" and called them in-area generators. This

concerned about whether wholesale power markets will be deep and liquid." Direct Testimony of William H. Hieronymus at page 19 lines 1-4.

¹⁴ Direct Testimony of William H. Hieronymus at page 38.

¹⁵ Direct Testimony of Craig R. Roach at pages 16-17.

1 designation included all of APS' existing plants except for Navajo, which was
2 located in SRP's area. The one modification we made to the WSCC data was to
3 accurately count as active the full capacity of West Phoenix units 4 through 6,
4 which are listed as deactivated in the WSCC data, but which have been reactivated
5 within the last year.

6 Q. WHAT WAS THE SECOND KEY TASK?

7 A. Next we determined which merchants would be on-line and located in the APS
8 area. To determine which plants would be on-line we relied on the previous
9 testimony of Staff witness Jerry Smith.¹⁶ We took all merchants expected to be on-
10 line by the end of 2003. In order to determine the location of the merchants we
11 took a map of APS' service territory and examined press releases from the
12 merchants to determine where the plants would be located. If the location of the
13 plant was inside of APS' service territory, then the plant was justifiably considered
14 an in-area resource.

15 Q. WHAT WAS THE THIRD KEY TASK?

16 A. The third step was the determination of import limits into the APS control area.
17 We first examined the APS OASIS site, but there were no postings of Total
18 Transfer Capability ("TTC"). So we asked the APS transmission department what
19 the import capability was into APS' control area. We were told that it was
20 approximately 3,900 MW.

21 Q. WHAT WAS THE FOURTH KEY TASK?

22 A. Fourth, we had to determine peak load. We used the projection for 2003 from APS
23 witness Cary Deise.¹⁷

24 Q. HOW DOES APS' SMA DIFFER?

25 A. Dr. Hieronymus has several differences in his SMA analysis. With respect to

26 ¹⁶ Smith Testimony in Docket E-01345A-01-0822, Exhibit JS-10.

¹⁷ Deise Rebuttal Testimony in Docket E-01345A-01-0822, et al.

1 existing, in-area generation, although he states that he included "all of the
2 generation physically located inside of APS' control area" he does not include Palo
3 Verde and Red Hawk as in-area resources. Thus, he does not include the co-owned
4 portions of Palo Verde as in-area competitors either. He also included the co-
5 owners of Navajo as in-area competitors along with Four Corners.

6 His calculation of APS generation is similar to ours, but he further includes
7 power purchase contracts with Pacificorp and SRP. We did not have the
8 opportunity to research these contracts to determine whether control was shifted to
9 APS so we did not include them, but their inclusion would have only increased
10 APS' capacity in the market.

11 Q. WHAT ABOUT MERCHANTS EXPECTED TO BE ON-LINE?

12 A. His calculation of merchant generation is different as well. The Mesquite and
13 Harquahala plants are not included, possibly because they are, according to the
14 WSCC generation database maintained by the CEC, supposed to be on-line after
15 the summer peak of 2003, which I understand to be his cut off point for inclusion.
16 The Arlington Valley plant, located near Palo Verde, and the Sundance plant,
17 located Southeast of Phoenix, are also not included in his analysis. Despite the
18 location of the facility near Palo Verde, the Panda plant is included as an in-area
19 merchant as is the Desert Basin facility located south of Phoenix.

20 Q. WHAT ABOUT IMPORT LIMITS?

21 A. Dr. Hieronymus uses an import level of over 11,000 MW. He removes about
22 2,000 MW from that number in order to bring in the Red Hawk facility and the
23 APS portion of Palo Verde. The remaining 9,000 MW, Dr. Hieronymus assumes,
24 is the import TTC into the APS control area. His import number may be much
25 higher than ours because he apparently includes transmission capacity even if APS
26 does not own or control it.

1 Q. WHAT ABOUT PEAK LOAD?

2 A. Dr. Hieronymus uses an older projection of peak load, the projection for 2003 that
3 APS filed in its Year 2000 FERC Form 714. This is a valid number, but we used
4 our number because the source was more recent.

5 Q. CAN YOU IDENTIFY THE MAIN DIFFERENCE IN APPROACH?

6 A. The most important difference between my SMA and the approach employed by
7 Dr. Hieronymus appears to be in defining what constitutes the APS area as well as
8 in determining the import limits are that area. One consequence of our
9 methodology is that we may have overstated the TTC into the APS control area. If
10 we assume that Palo Verde and merchants located near there (with the exception of
11 Panda) are out-of-area, then these facilities, as well as the co-owners of Palo
12 Verde, would have to use up TTC to get into the APS control area. This would
13 reduce the amount of other imports that could compete.

14 Q. WOULD LOWER IMPORTS CHANGE YOUR RESULTS?

15 A. No, this would not change the overall results of my SMA. Even if all of the TTC
16 was taken up by nearby plants importing into the APS control zone, I would still
17 conclude that APS would face a significant number of potential competitors. The
18 sum of all APS generation, merchants and facility owners and co-owners of
19 existing facilities would equal 16,315 MW. With a peak load of 5,911 MW that
20 leaves a supply margin of 10,404 MW, almost twice the APS capacity in the
21 market. However, lowering imports in this manner would give even greater
22 importance to assuring merchant generation has a real opportunity to compete
23 through competitive procurement for 100% of Standard Offer customer load. It
24 also gives greater importance to ensuring equal access to transmission and equal
25 treatment of suppliers with respect to interconnection.

26 Q. ARE THERE BROADER IMPLICATIONS TO THESE DIFFERENCES?

1 A. Yes. I think these differences show the importance of a clear understanding of
2 how transmission constraints affect competition, and how that effect might differ
3 between competition through competitive procurement for longer-term PPAs as
4 opposed to competing in a spot market.

5 Clearly, if a generator is not already interconnected and integrated into the
6 transmission network, that competitor cannot be included as a competitor for the
7 spot market. That is, the supplier could not bid to deliver firm power in the next
8 day or next hour so it is not an effective competitor. However, with competition
9 for longer-term PPAs, with an on-line date in the future, potential suppliers could
10 compete even without actually being interconnected and integrated. That is, a
11 supplier could make an offer, but then wait to win before actually being
12 interconnected and integrated.

13 Q. WHY IS THIS IMPORTANT?

14 A. Competitive procurement for longer-term PPAs in advance of the on-line date
15 allows more suppliers to compete, and to compete with less actual transmission
16 investment, because only the winner must actually be interconnected and
17 integrated. Put more bluntly, if 30,000 MW of capacity was to compete for spot
18 sales tomorrow, then all 30,000 MW must be interconnected and integrated now.
19 In contrast, if 30,000 MW want to compete for a ten-year PPA with an on-line date
20 three years from now, none of it must be actually interconnected and integrated
21 today. Competitive procurement for long-term PPAs in advance of the on-line date
22 allows for more intense competition with less actual transmission investment.

23 Q. ARE THERE ANY OTHER POLICY IMPLICATIONS?

24 A. Yes. Dr. Hieronymus' approach also highlights the need to use comparable
25 approaches for all plants (a) to ensure equivalent transmission access and (b) to
26 assign interconnection and integration costs. In his method, Dr. Hieronymus

1 appears to presume that import capability will be allocated to existing APS
2 capacity (Palo Verde Nuclear and Red Hawk), but not to other suppliers. In truth,
3 all import capacity should be accessible on an equal basis by all suppliers. As I
4 recommended in my Direct Testimony, all suppliers must have the opportunity to
5 be designated as Network Resources so all can be treated equally as suppliers for
6 Standard Offer load.

7 In addition, all suppliers should be treated comparably in any comparison of
8 the portion of interconnection and integration costs the supplier is expected to pay,
9 as opposed to the portion of these costs put into transmission rates. As FERC has
10 now proposed, if new suppliers are responsible for all interconnection costs, then
11 existing suppliers should be allocated the cost of their existing interconnection.
12 These existing interconnection costs would be taken out of transmission rate base
13 and cost recovery would become the responsibility of the generator.¹⁸

14 Q. WHAT IS THE SPECIFIC IMPLICATION OF THIS LAST POINT FOR THE
15 APS ASSET TRANSFER?

16 A. Specifically, if for the purposes of competitive procurement, all new Merchants are
17 allocated the cost of their interconnection and presumed to reflect that cost in their
18 price offer, then APS should allocate to its Affiliate the interconnection cost of the
19 assets transferred to the Affiliate, and that Affiliate should reflect that cost in its
20 price offer.

21 **IV. THE RUCO TESTIMONY IS LARGELY MISPLACED SINCE IT IS**
22 **LARGELY A CRITIQUE OF FERC. IN ADDITION, THE WITNESS IS**
23 **ASKING THE COMMISSION TO RETREAT TO COST-PLUS**
24 **REGULATION AND, YET, OFFERS NO EVIDENCE THAT THIS IS IN**
25 **THE BEST INTERESTS OF THE CONSUMERS RUCO REPRESENTS.**

24 Q. PLEASE SUMMARIZE YOUR RESPONSE TO THE DIRECT TESTIMONY
25 SUBMITTED ON BEHALF OF RUCO.

26 ¹⁸ Standardization of Generator Interconnection Agreement and Procedures in FERC Docket No. RM02-1-000
(2002).

1 A. The RUCO Testimony is largely irrelevant to this proceeding because it is largely a
2 critique of FERC policies ranging from (a) FERC's promotion of Regional
3 Transmission Organizations (RTOs) to (b) its use of HHIs to measure market
4 power to (c) its policies regarding the California Crisis. In addition, the RUCO
5 witness is out of step with all other parties in this proceeding because he
6 recommends a retreat to traditional cost-plus regulation rather than continued
7 progress toward free enterprise. Equally important, he offers no evidence that such
8 a retreat would be in the best interests of the consumers RUCO represents.

9 Q. WHY DO YOU SAY RUCO'S TESTIMONY IS LARGELY A CRITIQUE OF
10 FERC?

11 A. I say this because Dr. Rosen spends more than half of his testimony (33 out of 52
12 pages) discussing what he considers to be inadequate FERC policy. The adequacy
13 of FERC policy is clearly outside the scope of this proceeding.

14 Q. CAN YOU PROVIDE EXAMPLES?

15 A. Yes. Dr. Rosen begins by criticizing the FERC's use of Herfindahl-Hirschmann
16 Indices (HHIs) when measuring the potential to exercise market power.¹⁹ Note
17 that FERC has used HHIs in merger reviews for at least 15 years and chose to do
18 so because the U.S. Department of Justice recommends HHIs in its own Merger
19 Guidelines.

20 Dr. Rosen then criticizes FERC for advocating Firm Transmission Rights.²⁰
21 He also raises concerns regarding the Standard Market Design being proposed by
22 FERC, and the establishment of RTOs.²¹ After more than a decade of effort,
23 FERC proposed these approaches because it believes they work. If Dr. Rosen has
24 problems with these approaches, he should express his views in FERC

25
26 ¹⁹ Direct Testimony of Richard Rosen at page 12.

²⁰ Ibid. at pages 19 to 20.

²¹ Direct Testimony of Richard Rosen at page 22 to 24.

1 proceedings, not in this proceeding.

2 The point is that his critique of FERC does not relate to the scope of this
3 proceeding. The topics at issue here are the transfer of assets and market power,
4 Codes of Conduct, the Affiliated Interest Rules, and related jurisdictional issues.
5 This portion of Dr. Rosen's testimony does not have relevance in this proceeding.

6 Q. WHAT DOES DR. ROSEN RECOMMEND?

7 A. Dr. Rosen states that: "The preferable course of action for the ACC is to decide
8 now not to proceed with the divestiture of APS' and TEP's existing generating
9 units at all."²² If, however, the Commission chooses to proceed, he recommends
10 that asset transfers take place only if the output of the assets is guaranteed to
11 Arizona consumers through a long-term, cost-based PPA. He states:

12 The divestiture of APS' and TEP's existing generation units to
13 unregulated affiliates should only be done if long-term
14 purchased power agreements (PPAs) are established such that
15 utility ratepayers continue to have access to all the power from
these units at traditional cost-of-service retail rates. Otherwise,
ratepayers will lose the substantial economic value of these
units.²³

16 Q. DOES DR. ROSEN MAKE OTHER RECOMMENDATIONS?

17 A. Yes. Dr. Rosen recommends that the Commission slow, if not stop altogether, the
18 creation of an RTO or the establishment of competitive procurement. At one point
19 Dr. Rosen states that "the ACC might want to do everything in its power to prevent
20 the formation of an RTO for Arizona."²⁴ He recommends that "the ACC not
21 approve the participation of Arizona utilities in a regional RTO until after the ACC
22 has decided how it wants to proceed with restructuring."²⁵ Similarly, with respect
23 to competitive bidding, he states "I do not believe that the ACC should proceed
24 with a competitive bidding process until the whole issue of the pros and cons of

25 ²² Id. at page 48 lines 8 to 10.

26 ²³ Id. at page 2 lines 7 to 12.

²⁴ Id. at page 22 lines 15 to 16.

²⁵ Id. at page 50 lines 5 to 7.

1 restructuring is reviewed in detail.”²⁶

2 Q. HOW DO YOU READ THE SUM OF HIS RECOMMENDATIONS?

3 A. Dr. Rosen’s recommendations amount to a complete retreat from competition. His
4 theme is go slow, but the implication is do not go at all.

5 Q. DOES HE OFFER EVIDENCE TO SUPPORT HIS “GO SLOW” ADVICE?

6 A. No. For example, he states “In my opinion, the most important lesson of the
7 California experience with restructuring the electric industry is to *go slowly*.”²⁷
8 That is simply not true. California’s problem is not that it went too fast (it started
9 its effort in 1992), but that it went the wrong way. The lessons of California are (a)
10 do not force consumers to buy 100% of their power in a spot market because that
11 puts them at the risk of price spikes; (b) do not force utilities to buy at a volatile
12 spot market price and sell at a fixed price because that can bankrupt them; and (c)
13 do not cause power shortages by failing to build the generation, transmission, and
14 fuel delivery infrastructure needed to serve consumers.

15 The Commission can readily heed these lessons. If it maintains the 100%
16 competitive procurement requirement, use of the spot market will be minimal, but
17 both beneficial and important. As I suggest, this competitive procurement should
18 result in a portfolio of longer-term contracts (5-, 10-, 15-year PPAs) for up to 95%
19 of Standard Offer needs. Moreover, by creating these opportunities to compete,
20 the Commission will make Arizona hospitable to Merchant investment and,
21 thereby, ensure Arizona consumers will not face shortages.

22 Q. DOES DR. ROSEN OFFER ANY OTHER REASONS THE COMMISSION
23 MIGHT WANT TO “GO SLOW”?

24 A. Yes, but they do not justify delay. For example, he says that the only possible
25 approach to assessing market power is simulation modeling using game theory. He

26 ²⁶ Direct Testimony of Richard Rosen at page 50 lines 18 to 20.

27 ²⁷ Id. at page 51 lines 10 to 11.

1 states:

2 Because the HHI and all previous attempts at measuring the
3 potential for the exercise of market power are inadequate to the
4 task because they are much too simplistic, the only possible
5 approach is simulation modeling of the collective gaming
6 behaviors of generation owners that, in fact, cause market
7 power. This is what Prof. John Nash showed in his Nobel
8 Prize winning research, which led to his determination of a
9 Nash equilibrium in various types of behavioral situations such
10 as bidding in electricity markets.²⁸ [Emphasis in original]

11 I have nothing against further research on simulation modeling, but its focus
12 is on simulating spot market bidding. Since the competitive procurement I propose
13 will result in longer-term PPAs, I see no need to do this type of modeling here.
14 Moreover, this would truly be research. Market models capable of modeling
15 bidding behavior are relatively new, and models based on game theory are even
16 more rare. There is no reason to delay so that this research can be completed.

17 Q. WHAT DOES DR. ROSEN'S RECOMMENDED RETREAT MEAN FOR HIS
18 POSITION IN THIS PROCEEDING?

19 A. It means Dr. Rosen is out of step with the goals of the Staff, APS, and other
20 interveners, and the Commission itself. For example, the Staff has made it clear
21 that the question is not whether to go forward to wholesale competition, but how
22 fast to move forward.²⁹

23 Q. IN THE END, HOW WOULD YOU HAVE THE COMMISSION RESPOND TO
24 DR. ROSEN'S BASIC RECOMMENDATION?

25 A. I would ask the Commission to reject it. Clearly, I could not support a retreat to
26 cost-plus regulation. Moreover, as I have argued throughout, the long-term cost-
27 plus PPA offered by APS (a) is not the best deal for the ratepayers that Dr. Rosen
28 is supposed to represent; and (b) is not adequate mitigation for the market power he
29 is worried about.

²⁸ Direct Testimony of Richard Rosen page 13 lines 6 to 12.

²⁹ Staff's Response to Arizona public service Company's Motion for Determination of Threshold Issue at page 2.

1 V. RECOMMENDATIONS TO THE COMMISSION

2 Q. BASED ON YOUR RESPONSE TO STAFF, APS, AND RUCO DIRECT
3 TESTIMONY, HAVE YOU CHANGED YOUR RECOMMENDATIONS TO
4 THE COMMISSION?

5 A. No. I stand by the recommendations made in my Direct Testimony.

6 Q. PLEASE BRIEFLY SUMMARIZE THOSE RECOMMENDATIONS.

7 A. I recommend that the Commission prohibit the asset transfer until APS has agrees
8 to competitively procure 100% of its Standard Offer service requirements. In
9 addition, the Commission should (a) require APS to establish short-term energy
10 markets, including a real-time balancing market; (b) require APS to provide an
11 opportunity for all generators selected by competitive procurement or by the short-
12 term markets to be designated Network Resources; and (c) require APS to issue
13 RFP(s) for generation within the constrained Valley region.

14 Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

15 A. Yes.

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