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November 11, 2002

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Arizona Corporation Commission
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E-00000A-02-0051
E-01345A-01-0822
E-00000A-01-0630
E-01933A-02-0069

Re: Docket No. E-00000A-02-0051
In the matter of the Consolidated Generic Proceedings Concerning Electric
Restructuring, et al

Dear Ms. Ryan:

Enclosed for filing in the above-captioned proceeding are the original and thirteen (13) copies of the Direct Testimony of E. Douglas Mitchell. Also enclosed are two additional copies to be conformed and returned to our office.

Please let me know if you have any questions, and thank you for your assistance.

Very truly yours,

Theodore E. Roberts
Attorney for
Sempra Energy Resources

Enclosures

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BEFORE THE
ARIZONA CORPORATION COMMISSION

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DIRECT TESTIMONY OF E. DOUGLAS MITCHELL

On Behalf of Sempra Energy Resources

Docket No. E-00000A-02-0051, et al.

E-00000A-02-0051
E-01345A-01-0822
E-00000A-01-0630
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~~E-01933A-02-0471~~

November 12, 2002

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I. INTRODUCTION

Q. PLEASE STATE YOUR NAME, ADDRESS AND OCCUPATION.

A. My name is E. Douglas Mitchell, and my business address is 101 Ash Street, San Diego, CA 92101. I am a Regulatory Policy Manager at Sempra Energy Global Enterprises.

Q. WHAT IS YOUR EDUCATIONAL AND RELEVANT PROFESSIONAL BACKGROUND?

A. I received a Bachelor of Science degree in electrical engineering from the University of Florida in 1970 and a Masters of Engineering from the University of South Florida in 1974. In my current position, I am responsible for regulatory policy issues and coordination associated with the non-utility businesses of Sempra Energy. This includes representing Sempra Energy Resources in proceedings such as this one.

I previously worked for San Diego Gas & Electric Company ("SDG&E") for over twenty years, primarily in the Generation Planning Department. During my tenure at SDG&E, I conducted a number of competitive solicitations for a combination of short-range and longer-range power purchases extremely similar to the one now being considered by the Arizona Corporation Commission ("ACC")

1 for implementation by Arizona Public Service ("APS") and
2 Tucson Electric Power ("TEP").

3 I have previously testified before the California Public
4 Utilities Commission in numerous proceedings, including
5 solicitations associated with its Biennial Resource Plan
6 Update, a State of California legislative committee on
7 resource planning issues, the California Energy Commission
8 on planning and policy issues, and the California Superior
9 Court on appropriate resource selection methods.

10
11 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

12 A. To encourage the ACC to immediately proceed with the
13 adoption and implementation of the Staff's
14 recommendations for a competitive procurement process
15 designed to comply with the Commission's Decision No.
16 65154 in Track "A" of this proceeding. The current
17 timing for this solicitation is excellent and the
18 expected results should provide substantial rate benefits
19 for the Standard Offer electricity customers in Arizona.
20 Additionally, a proposed improvement to the solicitation
21 process is offered to help assure the best possible
22 results for the ratepayers.

1 **II. SUMMARY**

2 **Q. WOULD YOU PLEASE SUMMARIZE YOUR DIRECT TESTIMONY?**

3 A. The IOUs should immediately begin a comprehensive RFP
4 solicitation for power purchases on the schedule
5 presented in Staff's October 25, 2002 Report on Track B:
6 Competitive Solicitation (page 29). As required by the
7 Commission's Decision No. 65154, the amount of capacity
8 acquired through this solicitation should be a minimum of
9 each IOU's forecasted unmet need for at least the next
10 three years. The maximum level of capacity should be
11 limited only by economic considerations. In other words,
12 the utilities should expand their proposed solicitations
13 to include the competitive procurement of energy when it
14 is available on the open market at a price lower than the
15 utility's cost to generate its own power.

16
17 **Q. WHAT WAS THE EFFECT OF THE SDG&E COMPETITIVE**
18 **SOLICITATIONS ON THE ELECTRIC RATES OF SDG&E CUSTOMERS?**

19 A. SDG&E began this series of power purchase solicitations n
20 the early 1980s. Just prior to implementing these
21 solicitations, SDG&E had the second highest electric
22 rates in the nation. After nine years of these
23 competitive solicitations, SDG&E enjoyed the lowest
24 Investor-Owned Utility ("IOU") electric rates in the
25 State of California for three years in a row. This low-

1 cost position was achieved even though the other two
2 California IOUs owned large, low-cost hydro facilities,
3 while SDG&E did not.
4

5 Q. **HOW WAS SDG&E ABLE TO ACHIEVE SUCH SIGNIFICANT RATE**
6 **BENEFITS FROM ITS COMPETITIVE SOLICITATIONS?**

7 A. These solicitations were conducted during a period that
8 could best be described as a "buyers market". The
9 process used to solicit interested sellers stimulated the
10 marketplace and forced sellers to either provide very
11 competitive prices or see their power plants sit idle.
12

13 Q. **DOES IT APPEAR THAT A "BUYERS MARKET" IS NOW AVAILABLE**
14 **FOR ARIZONA UTILITIES?**

15 A. Yes, there are many indicators that suggest this is the
16 case. One indicator is simply the number of interested
17 merchant plant providers actively participating in this
18 proceeding. Another indicator is that spot market
19 clearing prices for electric products in Western markets
20 have remained at very competitive levels for some time
21 now. The competitive solicitations conducted this past
22 month in California also reveal a strong interest by
23 merchant power providers to serve load in the region.
24 While the results of these solicitations are protected by
25 confidentiality restrictions, it is known that Southern

1 California Edison ("SCE") is requesting approval by the
2 California Public Utilities Commission of a number of
3 pending contracts that were judged favorable. SDG&E also
4 experienced a robust interest in their solicitation, and
5 is also requesting approval for a number of pending
6 contracts.

7
8 **III. THE SOLICITATION PROCESS**

9
10 **Q. HOW SHOULD THE SOLICITATION PROCESS BE STRUCTURED?**

11 A. The first two steps identified in the Staff Report appear
12 to be appropriate and consistent with ensuring a viable
13 and effective solicitation. These two steps are: (1) pre-
14 solicitation, and (2) solicitation preparation. Staff's
15 proposal for bid evaluation, however, does not go far
16 enough in specifying what is needed to produce optimum
17 results. However, modifying the evaluation process to
18 produce optimum results would require a longer time for
19 implementation of the solicitation than the proposed
20 schedule allows.

21
22 **Q. WHAT ADDITIONAL STEPS ARE NEEDED AND HOW MUCH TIME WOULD
23 THEY ADD TO THE SCHEDULE?**

24 A. The additional specification is needed in the "evaluate
25 prices", Task ID number 23 on page 29 of Staff Report.

1 The one and only way to determine the value of an offer is
2 to evaluate it within the context of the fully integrated
3 generation operating system. This includes the dual
4 considerations of: (1) providing reliable power, and (2)
5 achieving the lowest cost possible. The only feasible way
6 to evaluate the complex interactions between power
7 opportunities associated with these bids is to simulate
8 the entire electrical system using computer programs
9 designed for this task. These programs can simulate hour-
10 by-hour system load requirements, the operating
11 characteristics of each of the generating units and power
12 purchases, known operating procedures and requirements, as
13 well as the cost and availability of economy energy
14 purchases while simultaneously considering any
15 transmission constraints associated with delivery of this
16 power. If the utility is unable or unwilling to perform
17 this analysis, there is a vendor(s) that can immediately
18 provide this service and also provide the information
19 needed to model the entire western grid from a recently
20 updated database.

21
22 **Q. HOW CAN THE IOUS EFFICIENTLY PERFORM THIS ANALYSIS?**

23 A. After the proposals are received at the close of the
24 solicitation period, the offers should be pre-screened and
25 sorted into similar groups. (e.g., baseload offers in one

1 group, dispatchable peaking resources in another, etc.)
2 Within each group a rank ordering should be established
3 from the best offers on down. When this grouping and
4 ranking is complete, the better of the bids in each group
5 (or more likely a combination of bids in each group) can
6 be incrementally tested in combination with the existing
7 generating units in such a way that the minimum reserve
8 requirements are satisfied. This combination is referred
9 to as a "scenario".

10
11 The offers obtained in this solicitation are likely to be
12 plentiful, and will permit a number of combinations and
13 permutations of the better bids to satisfy reserve
14 requirements. When a reasonable number of combinations of
15 bids are prepared, e.g., three or four scenarios, these
16 scenarios should be simulated with the aid of a detailed
17 production costing model to determine the scenario that
18 produces the minimum total revenue requirements. When
19 this single best scenario is determined, the additional
20 considerations identified in the Risk Management Section
21 (Section IV of this testimony) can be analyzed.

1 Q. HOW MUCH TIME SHOULD BE ALLOCATED TO PERFORMING THESE
2 DETAILED PRODUCTION COSTING SIMULATIONS?

3 A. With a group of four or five professionals familiar with
4 computer modeling and knowledge of the operational and
5 planning needs of an electric utility, experience has
6 shown that this task can be completed in approximately six
7 weeks.

8
9 Q. CAN A REASONABLE SUBSTITUTE FOR THE DETAILED PRODUCTION
10 COSTING SIMULATIONS BE MADE BY LIMITING THE RFP
11 SOLICITATIONS TO SPECIFIC PRODUCTS THAT APPEAR TO BE
12 NEEDED BASED UPON AN "UNMET NEED" ANALYSIS?

13 A. In my professional opinion, no. The goal of the RFP
14 solicitation stated in the first paragraph of the Staff
15 Report is to achieve cost savings for ratepayers. I
16 believe this goal cannot be met without a complete and
17 detailed examination of the complex interactions inherent
18 in a generating system operating within an interconnected
19 utility grid.

20 Limiting the solicitation only to some pre-determined
21 "unmet need" exposes customers to potentially higher
22 prices because it looks at procuring only what the utility
23 is unable to provide physically, i.e., through its own
24 generating units, without regard to the combination of
25

1 utility and non-utility resources that yields the optimum
2 results.

3 For example, while the utilities focus on the need for
4 peaking-type resources in their expansion plans, it is
5 nevertheless important to observe that bid proposals have
6 the potential to replace some higher-priced generators in
7 their current portfolio mix. A detailed review of these
8 opportunities could uncover a baseload or mid-range
9 proposal that provides net benefits to ratepayers.

10
11 **Q. WOULD YOU PLEASE PROVIDE AN EXAMPLE IN WHICH AN OUTCOME**
12 **FROM AN "UNMET NEED" ANALYSIS WOULD LIKELY LEAD TO AN**
13 **INCORRECT RESULT?**

14 A. Yes, one example would be the issues surrounding
15 quantities and prices of economy energy deliveries. A
16 proper analysis of these transfers is dependent on three
17 factors: (1) knowledge of the system decremental cost of
18 the receiving utility ("buyer"), (2) the quantity
19 available and the offering price of the sending utility
20 ("seller"), and (3) sufficient unused transmission
21 transfer capacity must be available to accommodate the
22 transaction. Lack of knowledge of any one of these
23 components could lead to incorrect conclusions.

1
2 Q. **COULD AN INCORRECT CONCLUSION IN THIS AREA BE**
3 **SIGNIFICANTLY DETRIMENTAL TO THE RATEPAYERS IN THE STATE?**

4 A. Yes. Given the stated intention of the two Arizona
5 utilities to increase their reliance on the receipt of
6 economy energy, indeed incorrect conclusions could be
7 significantly detrimental. The numbers provided by APS in
8 Mr. Ewen's testimony from Schedule PME-13 (and at the
9 workshop on November 6, 2002) show that the company is
10 projecting the dependence on economy energy to grow from
11 14% of total Standard Offer load in 2003 to 30% in 2013.
12 At this same workshop, APS stated that the computer model
13 used by the company could not capture the impact of
14 transmission constraints in the simulation process.
15 Therefore, APS appears to be counting on a source of
16 energy for almost one-third of its needs, but does not
17 know if this power can actually flow into the system.

18
19 Q. **DO YOU HAVE SIMILAR CONCERNS OVER RESTRICTING THE**
20 **SOLICITATION TO ONLY THE THREE PROPOSED BASIC PRODUCTS?**

21 A. Yes, only three basic products (i.e., capacity only,
22 capacity plus some minimum level of energy, and physical
23 "call" options) were proposed for the solicitation, based
24 upon the "unmet need" analysis. A more comprehensive
25 analysis, one that considered insights about projected

1 utility operations over the planning horizon, would show
2 that many types of energy products should be considered.

3
4 **Q. BASED UPON YOUR EXPERIENCE, WHAT TYPES OF PRODUCTS SHOULD**
5 **BE REQUESTED OF BIDDERS?**

6 A. There should be no restrictions on energy products, other
7 than perhaps on minimum quantities. Attempts to place
8 rigid requirements on bidders have the potential to simply
9 limit the number of good offers that might otherwise be
10 submitted. Experience also shows that bidders often
11 ignore these proposed restrictions, and submit bids on
12 their own terms and conditions. Solicitations that
13 propose a contract that follows well-known industry
14 protocols, such as the EEI Master Agreement or the WSPP
15 Standard Contract will likely help remove any risk premium
16 that might otherwise be placed in the bid price to
17 compensate for uncertainty in this area.

18
19 **IV. RISK MANAGEMENT**

20 **Q. WHAT IS THE BEST WAY TO EVALUATE PRICE RISK UNCERTAINTY**
21 **AND PRICE VOLATILITY?**

22 A. Setting specific risk tolerance levels on both price risk
23 and price volatility is clearly the responsibility of the
24 individual utilities, with guidance from their regulators.
25 The Staff Report, for instances, offers the guidance that

1 a solicitation process needs to be designed in such a way
2 to ensure that "benefits occur instead of pitfalls."

3 However, I would like to comment on the methods used to
4 evaluate these risks, and on what utilities generally
5 consider prudent.

6 The starting point for these evaluations is the lowest
7 cost scenario obtained from evaluating the best
8 combination of bids, referred to as the base case
9 scenario. This is the scenario that is then subjected to
10 additional risk scrutiny. A typical price risk analysis
11 is simply the straightforward observation of the tenure of
12 the resources in the portfolio. The optimum results
13 produce a mix of resource commitments that are half long-
14 term (five years or more) and the other half are a mix of
15 shorter term (less than five years) and spot market
16 purchases. Such a blend of resources will allow price
17 level stability in times of high spot prices, and provide
18 opportunities to reduce costs if spot market prices are
19 lower.

20 A price volatility analysis is usually performed as a
21 sensitivity evaluation to the base case scenario. Price
22 inputs that are known to be volatile, e.g., natural gas
23 prices, are tested over a range of potential price levels
24 extremes. Evaluating the variances in total system costs
25 over this range provides a basis to determine the

1 sensitivity of the base case scenario to price volatility
2 considerations. If the base case is deemed to be overly
3 sensitive to a particular price-related attribute, it
4 should be modified to alleviate this undesirable
5 characteristic. Changes of this type should be made at
6 the discretion of the utility, and allowing this leeway
7 should be part of the bid selection process.
8

9 **Q. GIVEN THIS METHOD OF RISK EVALUATION AND MITIGATION, WOULD**
10 **A STRATEGY OF RELYING EXCLUSIVELY ON MARKET EXCHANGES SUCH**
11 **AS THE ICE OR BLOOMBERG OFFER A REASONABLE SUBSTITUTE FOR**
12 **AN RFP SOLICITATION?**

13 A. No. Reliance on a market exchange would contribute toward
14 both greater price sensitivity risk and greater exposure
15 to price volatility. Neither of these outcomes is
16 desirable. Market exchanges maintain liquid transaction
17 opportunities in short-term energy products only. A total
18 reliance on this short-term procurement method would
19 therefore eliminate any stability associated with entering
20 into longer-term resource commitments at known, pre-
21 determined prices. If the Arizona utilities ascribe to a
22 target portfolio of 50% longer-term resources, this method
23 of acquiring resources will ultimately lead to
24 inappropriate acquisitions.
25

1 The price of energy products in virtually all these
2 exchanges is closely tied to the prevailing price of
3 natural gas. Natural gas-fired power plants represent the
4 vast majority of resources "on the margin" that provide
5 offers to sell power in these markets. Greater exposure
6 to natural gas price volatility is undesirable, especially
7 when coupled with a reliance on economy energy that, as
8 indicated in the utility's work papers, is itself tied to
9 natural gas prices. The resulting "double whammy"
10 exposure to gas prices, which are known to fluctuate, is
11 not conducive to mitigating price volatility risk. In
12 fact, such an approach is likely to lead to increased
13 volatility and, ultimately, higher costs for consumers.
14 An additional consideration about the use of exchanges is
15 the lesson learned from the California experience. That
16 lesson is that, when supplies become tight, sellers will
17 seek and obtain whatever prices the market will allow.
18 Despite some of these apparent drawbacks, exchanges
19 clearly have an important place in the overall functioning
20 of wholesale energy markets. Most utility planners,
21 however, would not consider it prudent to rely entirely on
22 exchanges for all generation expansion needs.

23
24 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

25 **A. Yes it does.**