

**BEFORE THE ARIZONA CORPORATION COMMISSION**

WILLIAM A. MUNDELL

Chairman

JIM IRVIN

Commissioner

MARC SPITZER

Commissioner

IN THE MATTER OF THE GENERIC ) PROCEEDINGS CONCERNING ELECTRIC ) <u>RESTRUCTURING ISSUES.</u> )	DOCKET NO. E-00000A-02-0051
IN THE MATTER OF ARIZONA PUBLIC ) SERVICE COMPANY'S REQUEST FOR A ) VARIANCE OF CERTAIN REQUIREMENTS ) <u>OF A.A.C. R14-2-1606.</u> )	DOCKET NO. E-01345A-01-0822
IN THE MATTER OF THE GENERIC ) PROCEEDING CONCERNING THE ) ARIZONA INDEPENDENT SCHEDULING ) <u>ADMINISTRATOR.</u> )	DOCKET NO. E-00000A-01-0630
IN THE MATTER OF TUCSON ELECTRIC ) POWER COMPANY'S APPLICATION FOR A ) A VARIANCE OF CERTAIN ELECTRIC ) COMPETITION RULES ) <u>AND COMPLIANCE DATES.</u> )	DOCKET NO. E-01933A-02-0069
IN THE MATTER OF THE APPLICATION ) OF TUCSON ELECTRIC POWER ) COMPANY FOR APPROVAL OF ITS ) <u>STRANDED COST RECOVERY.</u> )	DOCKET NO. E-01933A-98-0471

DIRECT

TESTIMONY

OF

DAVID A. SCHLISSEL

SYNAPSE ENERGY ECONOMICS, INC.

APPEARING ON BEHALF OF UTILITIES DIVISION

MAY 29, 2002

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1 **I. QUALIFICATIONS**

2 **Q. Please state your name, position and business address.**

3 A. My name is David A. Schlissel. I am a Senior Consultant at Synapse Energy  
4 Economics, Inc, 22 Pearl Street, Cambridge, MA 02139.

5 **Q. On whose behalf are you testifying in this case?**

6 A. I am testifying on behalf of the Staff of the Arizona Corporation Commission.  
7 (“Staff”)

8 **Q. Please describe Synapse Energy Economics.**

9 A. Synapse Energy Economics ("Synapse") is a research and consulting firm  
10 specializing in economic and policy analysis of the electric industry, particularly  
11 issues of restructuring, market power, consumer protection, electricity market  
12 prices, stranded costs, efficiency, renewable energy, environmental quality, need  
13 for new transmission and generation capacity, and nuclear power.

14 **Q. Please summarize your educational background and recent work experience.**

15 A. I graduated from the Massachusetts Institute of Technology in 1968 with a  
16 Bachelor of Science Degree in Engineering. In 1969, I received a Master of  
17 Science Degree in Engineering from Stanford University. In 1973, I received a  
18 Law Degree from Stanford University. In addition, I studied nuclear engineering  
19 at the Massachusetts Institute of Technology during the years 1983-1986.

20 Since 1983 I have been retained by governmental bodies, publicly-owned utilities,  
21 and private organizations in 24 states to prepare expert testimony and analyses on  
22 engineering and economic issues related to electric utilities. My clients have  
23 included the Staff of the California Public Utilities Commission, the Staff of the  
24 Arizona Corporation Commission, the Arkansas Public Service Commission  
25 Staff, the Vermont Department of Public Service, municipal utility systems in  
26 Massachusetts, New York, Texas, and North Carolina, and the Attorney General  
27 of the Commonwealth of Massachusetts.

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1 I have testified before state regulatory commissions in Arizona, New Jersey,  
2 Connecticut, Kansas, Texas, New Mexico, New York, Vermont, North Carolina,  
3 South Carolina, Maine, Illinois, Indiana, Ohio, Massachusetts, Missouri, and  
4 Wisconsin and before an Atomic Safety & Licensing Board of the U.S. Nuclear  
5 Regulatory Commission.

6 A copy of my current resume is attached as Exhibit DAS-1.

7 **II. CONCLUSION AND RECOMMENDATION**

8 **Q. What is the purpose of your testimony.**

9 A. I have been asked by the ACC Staff to examine whether the transfer and  
10 separation of generating assets by the Arizona Public Service Company (“APS”)  
11 and/or the Tucson Electric Power Company (“TEP”) will create market power  
12 issues. This testimony presents the results of my investigation of this issue.

13 **Q. Please summarize your conclusion concerning the transfer and separation of**  
14 **APS’ generating assets.**

15 A. As a result of the transfer and separation of its generating assets, APS and its  
16 affiliates would be able to exercise market power, most significantly in the  
17 transmission constrained areas in the Phoenix Valley and Yuma.

18 **Q. Please summarize your conclusion concerning the transfer and separation of**  
19 **TEP’s generating assets.**

20 A. As a result of the transfer and separation of its generating assets, TEP and its  
21 affiliates would be able to exercise market power in the Tucson load constrained  
22 area which contains all of the Company’s retail loads.

23 **Q. What is your recommendation?**

24 A. APS and TEP should be required to present detailed analyses of the potential for  
25 the exercise of market power before the Commission grants approval for the  
26 transfer and separation of their generating assets to affiliates.

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1 **III. ARIZONA PUBLIC SERVICE COMPANY**

2 **Q. Has APS indicated that it believes that there would be a competitive**  
3 **wholesale market if its generating assets are transferred to its affiliate**  
4 **Pinnacle West Energy Corporation ("PWEC") in the near future?**

5 A. No. In fact, in its testimony in Docket No. E-01345A-01-0822, APS repeatedly  
6 emphasized that there will not be sufficient competitive generating facilities to  
7 supply even 50 percent of its standard offer loads in 2003 or in any year in the  
8 near future.<sup>1</sup> The Company also has said that existing transmission constraints  
9 will prevent those new merchant plants currently under construction from  
10 supplying significant quantities of power to its standard offer customers.

11 Another fact is that it is not presently possible to obtain 50%, let alone  
12 100%, of APS' requirements from the Palo Verde hub to the  
13 Company's' primary and secondary load centers, and yet it is precisely  
14 in the Palo Verde area that most of the Merchant Intervenors have  
15 elected to build their plants or to interconnect with the Arizona grid.  
16 Others, although located far from Palo Verde, are also positioned far  
17 from the APS transmission system, with no practical way to reach  
18 APS.<sup>2</sup>

19 In fact, APS has argued that while it may be "theoretically possible" that 700 MW  
20 of load in its non-transmission constrained areas could be competitively bid, it has  
21 serious reservations about the feasibility of such an approach.<sup>3</sup>

22 Even if it were possible to competitively bid this 700 MW of load in non-  
23 transmission constrained areas, the Company's remaining standard offer loads,  
24 including the customers in the Phoenix Valley and Yuma load pockets, would be  
25 at risk for higher rates should APS effectively exercise its market power to raise  
26 wholesale power costs.

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<sup>1</sup> Direct Testimony of William H. Hieronymus on Behalf of Arizona Public Service Company in Docket No. E-01345A-01-0822, at page 24, lines 11-13.

<sup>2</sup> Direct Testimony of Jack E. Davis on Behalf of Arizona Public Service Company, Docket No. E-01345A-01-0822, at page 6, lines 5 to 11.

<sup>3</sup> Rebuttal Testimony of Cary Deise on Behalf of Arizona Public Service Company, Docket No. E-01345A-01-0822, at page 18, line 4, to page 19, line 14.

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1 **Q. Has APS implied that it might seek to profit from the limited competition for**  
2 **servicing its standard offer loads?**

3 A. Yes. APS witness Hieronymus in Docket No. E-01345A-01-0822 has testified  
4 that:

5           Moreover, the aggregate capacity available from these [merchant  
6           generating facilities], even assuming they could deliver to APS loads,  
7           is less than half of the PWEC load that would be put out to bid. Of  
8           course, PWEC or PWCC could bid, but would do so with the  
9           knowledge that it faced limited competition and that some of its  
10          capacity likely would be needed.<sup>4</sup>

11          This suggests that APS might seek to take advantage of its market power.

12 **Q. Please explain how you have evaluated whether the transfer and separation**  
13 **of APS' generating assets will create market power concerns?**

14 A. As I will explain later in this testimony, a detailed system simulation analysis  
15 needs to be performed to determine the extent to which APS will be able to  
16 exercise market power in its service territory when its generating assets are  
17 transferred to PWEC. This system simulation analysis would reflect existing  
18 transmission constraints and planned transmission and generation upgrades.

19          However, I have not had the opportunity to perform such an analysis due to the  
20 limited time provided for the preparation of this testimony. Therefore, I have  
21 performed a screening analysis using the new Supply Margin Assessment  
22 ("SMA") test that FERC has said should be used pending completion of a generic  
23 rulemaking proceeding.<sup>5</sup>

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<sup>4</sup> Ibid., at page 3, line 20, to page 4, line 2.

<sup>5</sup> FERC Order in Dockets Nos. ER96-2495-015, ER97-4143-003, ER97-1238-010, ER98-2075-009, ER98-542-005, ER91-569-009 and ER97-4166-008, issued November 20, 2001, at page 7.

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1 **Q. Has FERC explained why it believes that this SMA screen is an appropriate**  
2 **test for examining whether an applicant can exercise generation market**  
3 **power?**

4 A. Yes. FERC explained that because of structural changes and corporate  
5 realignments that have occurred and continue to occur in the electric industry,  
6 earlier analyses no longer adequately protect customers against generation market  
7 power in all circumstances.<sup>6</sup>

8 According to FERC, as a method for assessing whether an applicant has  
9 generation market power, the SMA screen builds on and improves the earlier  
10 methodology in two ways:

11 First, in determining the geographic market, the SMA considers  
12 transmission constraints. Thus, the SMA can more accurately  
13 determine what supply can reach buyers to compete with the applicant.

14 Second, in determining the size that triggers generation market power  
15 concerns, the SMA establishes a threshold based on whether an  
16 applicant is pivotal in the market, i.e., whether at least some of the  
17 applicant's capacity must be used to meet the market's peak demand.  
18 When an applicant is pivotal, it is in a position to demand a high price  
19 above competitive levels and be assured of selling at least some of its  
20 capacity. An applicant will be pivotal if its capacity exceeds the  
21 market's surplus of capacity above peak demand -- that is, the market's  
22 supply margin. Thus, an applicant will fail the SMA screen if the  
23 amount of its capacity exceeds the market's supply margin. By  
24 contrast, under the hub-and-spoke method, an applicant would pass the  
25 screen if its market share were less than 20 percent, even if its capacity  
26 were pivotal. The SMA's supply margin threshold is a better screen for  
27 market power because, unlike the 20 percent market share screen, it is  
28 sensitive to the relative scarcity of electricity supply available from  
29 suppliers other than the applicant in the applicable market. Effectively,  
30 the supply margin threshold identifies whether the applicant is a must-  
31 run supplier needed to meet peak load in the control area. Thus, the  
32 supply margin is sensitive to the potential for the applicant to  
33 successfully withhold supplies in the market in order to raise prices.<sup>7</sup>

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6 Ibid.

7 Ibid., at pages 7 to 8.

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1 In other words, FERC has found that an applicant is “pivotal” and has the ability  
2 to exercise market power within its control area market because its generation is  
3 needed to meet the market's peak demand.

4 **Q. Has APS acknowledged that its generation is needed to meet the peak**  
5 **demand of its customers in the Phoenix Valley transmission constrained area**  
6 **(i.e., load pocket)?**

7 A. Yes. APS rebuttal witness Deise in Docket No. E-01345A-01-0822 presented an  
8 APS Valley Import Analysis that showed that the Company would need 427 MW  
9 of its in-Valley capacity to meet projected peak loads in 2003.<sup>8</sup> The amount of in-  
10 Valley capacity needed to meet projected peak demands in subsequent years  
11 would increase to 1,034 MW by 2007 but would decrease in 2008 following the  
12 completion of planned transmission system upgrades.

Year	APS Valley Load	APS Transmission Import Capabilitv	APS In-Valley Generation Requirement
2003	4112	3685	427
2004	4256	3685	571
2005	4405	3685	720
2006	4559	3685	874
2007	4719	3685	1034
2008	4884	4685	199
2009	5055	4685	370
2010	5232	4685	547

13  
14 Obviously, APS dependence on in-Valley generation units to meet projected peak  
15 demands will continue to increase after 2007 if the proposed transmission system  
16 upgrades are not completed as currently planned.

17 Consequently, under FERC’s SMA screen test, APS would have the ability to  
18 exercise market power within its Phoenix Valley service area because its  
19 generation would be needed to meet the area's peak demand.

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<sup>8</sup> Rebuttal Testimony of Cary Deise on Behalf of Arizona Public Service Company in Docket No. E-01345A-01-0822, Schedule CD-3R.



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1 **Q. Does APS need to operate its in-Valley generating facilities for a significant**  
2 **number of hours each year to serve customer demands?**

3 A. Yes. For example, APS has indicated that it had to operate some amount of  
4 “must-run” in-Valley generation for 956 hours in the year 2000.<sup>9</sup>

5 **Q. Would APS similarly have the ability to exercise market power in its Yuma**  
6 **load pocket?**

7 A. Yes. The ACC Staff has found that APS’ transmission import capability into the  
8 existing Yuma load pocket will be inadequate to meet projected peak demands at  
9 least until 2004 when a new transmission line is scheduled for completion.<sup>10</sup> Until  
10 that time, at least, APS will rely on generation inside its Yuma load pocket to  
11 meet some of its projected peak demands.

12 **Q. Is it only the need to rely on generating facilities inside these load pockets**  
13 **that creates the potential for market power?**

14 A. No. The potential for APS to exercise market power also is enhanced by the fact  
15 that, for the foreseeable future at least, some APS or affiliate-owned generating  
16 facilities located outside the Phoenix Valley will continue to be needed to serve  
17 both peak and non-peak customer demands within that load pocket. This is due to  
18 the limited amount of merchant capacity that will be capable of being imported  
19 into the Phoenix Valley.<sup>11</sup> APS’ control over the existing transmission system  
20 also creates vertical market power concerns about its possible use of that control  
21 to advantage its own affiliates while disadvantaging competitors.

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<sup>9</sup> Revised Biennial Transmission Assessment, 2000-2009, Revised July 2001, Appendix D, at page 16.

<sup>10</sup> Revised Biennial Transmission Assessment, 2000-2009, Revised July 2001, Appendix D, at pages 32 and 33.

<sup>11</sup> See the Direct Testimony of Jack E. Davis on Behalf of Arizona Public Service Company, Docket No. E-01345A-01-0822, at page 6, lines 5 to 11 and the Rebuttal Testimony of Cary Deise on Behalf of Arizona Public Service Company, Docket No. E-01345A-01-0822, at page 18, line 4, to page 19, line 14.

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1 **Q. Has APS acknowledged that the existence of the Phoenix Valley and Yuma**  
2 **load pockets creates market power concerns?**

3 A. Yes. APS witness Hieronymus testified in Docket Nos. E-01345A-98-0473, E-  
4 01345A-97-0773, and RE-00000C-94-0165 that the existence of the Phoenix  
5 Valley, Yuma and Douglas load pockets creates market power concerns:

6 A load pocket is a geographic area in which the peak load exceeds the  
7 capability of the transmission system to allow power imported from  
8 outside the pocket to fully and reliably serve load. Usually, this limit  
9 is the thermal limit of the transmission lines entering the pocket. Since  
10 imports cannot fully meet load, it is necessary that some part of the  
11 load must be met by running generation located within the pocket.  
12 Other concerns, such as system stability and voltage problems, may  
13 also dictate that generation within the pocket must be run.

14 \* \* \* \*

15 [load pockets create market power concerns] because only generation  
16 within the load pocket can meet the load that exceeds the import limit.  
17 If there is only one, or very few owners of generation in the pocket,  
18 and the prices that they charge are not regulated, the owner(s) may be  
19 able to charge excessive prices. This will be true even if the market in  
20 the area surrounding the pocket is competitive.<sup>12</sup>

21 This is precisely what the situation in the Phoenix Valley will be if APS is  
22 allowed to transfer its generating assets to its PWEC affiliate.

23 **Q. Did APS admit that its unregulated affiliate, then called Genco, but now**  
24 **named PWEC, could exercise market power in the pricing of the output of its**  
25 **in-pocket generating units?**

26 A. Yes. Mr. Hieronymus acknowledged that APS theoretically could charge above  
27 competitive prices when its units within the Phoenix Valley, Yuma, and Douglas  
28 load pockets must run:

29 In the case of the Yucca and Douglas CTs it would be able to charge  
30 above competitive prices during those hours when the units are must

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<sup>12</sup> Rebuttal Testimony of William H. Hieronymus on Behalf of Arizona Public Service Company, Docket Nos. E-01345A-98-0473, E-01345A-97-0773, RE-00000C-94-0165, at page 5, lines 5 to 17.

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1 run in the absence of regulation. In the case of the valley units, APS  
2 competes with SRP, and SRP has sufficient generation in the valley  
3 that APS generation is not required. However, with only two sellers to  
4 meet the roughly 1,000 MW of peak load that cannot be met with  
5 imports, there may be a concern that the prices charged for in-valley  
6 generation will not be competitive.<sup>13</sup>

7 **Q. Did Mr. Hieronymus believe that APS actually would be able to exercise**  
8 **market power in the pricing of the generation within the existing load**  
9 **pockets?**

10 A. No. He testified that FERC would act to protect consumers where the existence  
11 of load pockets creates the ability to exercise market power.<sup>14</sup>

12 **Q. Do you agree that the Commission can rely on FERC to protect Arizona**  
13 **consumers against the possibility that APS will exercise market in the**  
14 **Phoenix Valley, Yuma, and Douglas load pockets?**

15 A. No. Given FERC's failure to act in an effective and timely manner to protect  
16 purchasers of wholesale energy in California from widespread market power  
17 abuses, I don't believe that the ACC should rely on FERC to protect Arizona  
18 consumers.

19 **Q. Has APS estimated how much of its load could be competitively bid in the**  
20 **near future given the current transmission system and planned generation**  
21 **and transmission additions?**

22 A. Yes. As I noted earlier, APS rebuttal witness Deise testified in Docket No. E-  
23 01345A-01-0822 that it might be "theoretically possible" to competitively bid up  
24 to 700 MW of APS' unconstrained loads in its Northern Arizona, Southern  
25 Arizona and Eastern Mining areas; but he had serious reservations about the  
26 feasibility of such an approach.<sup>15</sup>

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13 Ibid., at page 7, lines 1 to 8.

14 Ibid., at page 8, lines 12 to 18.

15 At page 18, line 19, to page 19, line 14.

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1           However, Mr. Deise emphasized that it was not possible "without making a  
2           number of critical explicit or implicit assumptions" to tell the Commission how  
3           much power can be competitively bid in the Company's service area given  
4           existing transmission constraints and the design of APS' transmission system:

5                     For example how are the Dedicated Units being used, how specifically  
6                     will the bid be structured, where will the required delivery points be  
7                     located, and for what capacities at each delivery point? The bid  
8                     amount also cannot be determined without knowing the exact location  
9                     and operational characteristics of all the generation resources that  
10                    would operate on APS' system following the competitive bid.<sup>16</sup>

11           Mr. Deise further explained that without such a detailed analysis it was not  
12           possible to determine how much of the new merchant capacity being built outside  
13           of the Phoenix Valley could be competitively bid into APS' service territory:

14                     I certainly agree that significant amount of new generating capacity is  
15                     being constructed in Arizona and is currently planned for future  
16                     construction in Arizona. I would also agree that this new capacity  
17                     should allow Arizona to contribute to the supply needs of the Western  
18                     Interconnection.

19                     However, much of this new capacity is relatively concentrated around  
20                     the Palo Verde hub - something that is certainly not surprising given  
21                     the amount of trading there and the fact the direct interconnection by  
22                     generators to the "common bus" at Palo Verde reduces transmission  
23                     costs to the generators. Because APS' system cannot physically take  
24                     delivery of all its power requirements from one location like Palo  
25                     Verde, I do not believe that the analysis of whether there is an  
26                     adequate "competitive supply margin" for delivery to APS'  
27                     transmission system can be performed by simply adding up all the new  
28                     and planned capacity in the state and comparing it with load  
29                     requirements. For APS, power would have to be delivered at all the  
30                     injection points that I discussed in Part IV of my testimony, which  
31                     requires a more involved analysis than the additive process that [ACC  
32                     Staff witness Jerry] Smith appears to have performed in his testimony  
33                     on this issue. Thus, while I agree that there is a significant amount of  
34                     new generating capacity being added in Arizona and to the Western  
35                     Interconnection generally, I don't believe that new capacity can simply

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<sup>16</sup> Rebuttal Testimony of Cary Deise on Behalf of Arizona Public Service Company in Docket No. E-01345A-01-0822, at page 23, lines 4 to 12.

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1 be summed to determine whether there is an adequate "competitive  
2 supply margin" for APS's system ....<sup>17</sup>

3 **Q. Should the Commission only be concerned about APS' ability to exercise**  
4 **market power during peak demand hours or should it be concerned about**  
5 **non-peak hours as well?**

6 A. The Commission should be concerned about market power both in peak demand  
7 hours and in non-peak hours. Events in California have shown that generation  
8 owners have been able to raise prices by exercising market power even in off-  
9 peak hours. For example, a report by the California Independent System  
10 Operator's Department of Market Analysis issued in May of 2001 has concluded  
11 that 30 percent of wholesale energy costs during calendar year 2000 could be  
12 attributed to the exercise of market power (i.e., that wholesale energy costs were  
13 about 30 percent higher than they would have been in the absence of market  
14 power).<sup>18</sup> The California Independent System Operator ("CAL ISO") also found  
15 that wholesale energy prices exceeded the competitive benchmark **in all hours,**  
16 **under a variety of system conditions:**

17 The results illustrate that market power abuse is not limited to hours  
18 when a deficiency in operating reserves requires the ISO to declare a  
19 System Emergency, much less hours in which a Stage 3 emergency  
20 has been declared. The data demonstrate that over the most recent 12-  
21 month period (including the first two months of 2001) the gap between  
22 actual wholesale prices and the proper competitive level (which takes  
23 into account spikes in natural gas prices) *continues to grow.* (emphasis  
24 in original)<sup>19</sup>

25 In fact, the CAL ISO has concluded that less than 2% of the hourly bidding  
26 profiles by the five large in-state generation owners during the period May  
27 through November 2000 displayed no clear pattern of withholding or market

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<sup>17</sup> Ibid., at page 24, line 7, to page 25, line 3.

<sup>18</sup> *Comments of the California Independent System Operator Corporation on FERC Staff's Recommendation on Prospective Market Monitoring and Mitigation for the California Wholesale Electric Power Market*, dated March 22, 2001, at page 8. These comments are available at the California ISO's website at [www1.caiso.com/pubinfo/FERC/filings/](http://www1.caiso.com/pubinfo/FERC/filings/).

<sup>19</sup> Ibid.

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1 power.<sup>20</sup> The other 98% of the hourly bidding profiles displayed various patterns  
2 leading to inflated market prices. CAL ISO subsequently stated that it was unable  
3 to identify any hours during the period May 2000 through November 2000 in  
4 which one of the generation owners, Williams Energy Marketing & Trading  
5 Company, “did not engage in physical or economic withholding.”<sup>21</sup>

6 According to CAL ISO, during the ten month period, May 2000 to February 2001,  
7 the degree of market power observed in California wholesale markets had  
8 represented additional total costs of \$6.8 billion.<sup>22</sup> Only about \$600 million of  
9 these additional costs were incurred during hours of potential resource scarcity, so  
10 that, “even excluding these hours, wholesale energy costs had been driven up over  
11 \$6.2 billion since May 2000, by the exercise of market power.”<sup>23</sup>

12 **Q. What analyses should the Commission require APS to perform before it**  
13 **allows the transfer of generating assets to affiliated companies?**

14 A. A proper analysis of the market power implications of the proposed transfer of  
15 generating assets would require an electric system simulation model to look at the  
16 hourly behavior of the market under a wide variety of physical conditions,  
17 contractual situations and bidding behaviors. Such a realistic analysis should  
18 reflect the transmission system constraints discussed in Docket No. E-01345A-01-  
19 0822 by Staff witness Smith and ACC witnesses. It also would examine the  
20 potential for the exercise of market power during both peak and non-peak hours in  
21 both peak and non-peak seasons.

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<sup>20</sup> *Empirical Evidence of Strategic Bidding in California ISO Real-time Market*, Anjali Sheffrin, Director, Department of Market Analysis, CAL ISO, March 21, 2001, at page 8. This report available at the California ISO’s website at [www1.caiso.com/pubinfo/FERC/filings/](http://www1.caiso.com/pubinfo/FERC/filings/).

<sup>21</sup> *Motion to Intervene and Protest of the California Independent System Operator Corporation*, April 2, 2001, in FERC Docket No. ER99-1722-004, at page 10. A copy of this Motion is available at the California ISO’s website at [www1.caiso.com/pubinfo/FERC/filings/](http://www1.caiso.com/pubinfo/FERC/filings/).

<sup>22</sup> *Comments of the California Independent System Operator Corporation on FERC Staff’s Recommendation on Prospective Market Monitoring and Mitigation for the California Wholesale Electric Power Market*, dated March 22, 2001, Attachment B, at page 10. These comments are available at the California ISO’s website at [www1.caiso.com/pubinfo/FERC/filings/](http://www1.caiso.com/pubinfo/FERC/filings/).

<sup>23</sup> Ibid.

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1 **IV. TUCSON ELECTRIC POWER COMPANY**

2 **Q. Would a transfer and separation of Tucson Electric Power Company's**  
3 **("TEP") generating assets create a similar potential for the exercise of**  
4 **market power?**

5 A. Yes. All of TEP's retail load is located within its Tucson transmission limited  
6 service territory.<sup>24</sup> TEP projects that this load will grow from 1,889 MW in 2003  
7 to 2,214 MW in 2010. There will be a limit on the transmission system's import  
8 capability of 1,535 MW after the second Saguaro to Tortolito 500 kV tie and  
9 transformer are installed. Thus, TEP will need to operate large amounts of  
10 generating capacity inside the load pocket in order to meet projected peak  
11 demands.<sup>25</sup>

Year	Load Area Peak Demand	Local Area Transmission Import Limit	TEP Local Area Generation Requirement
2003	1889	1535	354
2004	2001	1535	466
2005	2025	1535	490
2006	2082	1535	547
2007	2099	1535	564
2008	2137	1535	602
2009	2175	1535	640
2010	2214	1535	679

12  
13 Applying the FERC SMA screen shows that TEP would have the ability to  
14 exercise market power within the Tucson load pocket because its generation  
15 would be needed to meet the market's peak demand.

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<sup>24</sup> TEP April 25, 2002 response to Staff Data Request No. RTW 1-4 in Docket No. E-01933A-02-0069.

<sup>25</sup> The information presented in this table was taken from the loads and resources table provided in TEP's April 25, 2002 response to Staff Data Request No. RTW 1-1 in Docket No. E-01933A-02-0069.

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1 **Q. What analyses should the Commission require TEP to perform before it**  
2 **allows the transfer of generating assets to an affiliated company?**

3 A. As I discussed previously with regard to APS, the Commission should require that  
4 TEP present a detailed analysis of the market power implications of the proposed  
5 transfer and separation of generating assets. This analysis should use an electric  
6 system simulation model to look at the hourly behavior of the market under a  
7 wide variety of physical conditions, contractual situations and bidding behaviors.

8 **Q. Does this complete your testimony?**

9 A. Yes.

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# **EXHIBIT DAS-1**

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# David A Schlissel

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## SUMMARY

I have worked for twenty-seven years as a consultant and attorney on complex management, engineering, and economic issues, primarily in the field of energy. This work has involved conducting technical investigations, preparing economic analyses, presenting expert testimony, providing support during all phases of regulatory proceedings and litigation, and advising clients during settlement negotiations. I received undergraduate and advanced engineering degrees from the Massachusetts Institute of Technology and Stanford University and a law degree from Stanford Law School

## PROFESSIONAL EXPERIENCE

**Electric Industry Restructuring and Deregulation** - Investigated whether generators have been intentionally withholding capacity in order to manipulate prices in the new spot wholesale market in New England. Evaluated the reasonableness of nuclear and fossil plant sales and auctions of power purchase agreements. Analyzed stranded utility costs in Massachusetts and Connecticut. Examined the reasonableness of utility standard offer rates and transition charges.

**System Operations and Reliability Analysis** - Investigated the causes of distribution system outages and inadequate service reliability. Evaluated the impact of a proposed merger on the reliability of the electric service provided to the ratepayers of the merging companies. Assessed whether new transmission and generation additions were needed to ensure adequate levels of system reliability. Scrutinized utility system reliability expenditures. Reviewed natural gas and telephone utility repair and replacement programs and policies.

**Power Plant Operations and Economics** - Investigated the causes of more than one hundred power plant and system outages, equipment failures, and component degradation, determined whether these problems could have been anticipated and avoided, and assessed liability for repair and replacement costs. Reviewed power plant operating, maintenance, and capital costs. Evaluated utility plans for and management of the replacement of major power plant components. Assessed the adequacy of power plant quality assurance and maintenance programs. Examined the selection and supervision of contractors and subcontractors. Evaluated the reasonableness of contract provisions and terms in proposed power supply agreements.

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**Nuclear Power** - Examined the impact of industry restructuring and nuclear power plant life extensions on decommissioning costs and collections policies. Evaluated utility decommissioning cost estimates. Assessed the potential impact of electric industry deregulation on nuclear power plant safety. Reviewed nuclear waste storage and disposal costs. Investigated the potential safety consequences of nuclear power plant structure, system, and component failures.

**Economic Analysis** - Analyzed the costs and benefits of energy supply options. Examined the economic and system reliability consequences of the early retirement of major electric generating facilities. Quantified replacement power costs and the increased capital and operating costs due to identified instances of mismanagement.

**Expert Testimony** - Presented the results of management, technical and economic analyses as testimony in more than seventy proceedings before regulatory boards and commissions in twenty one states, before two federal regulatory agencies, and in state and federal court proceedings.

**Litigation and Regulatory Support** - Participated in all aspects of the development and preparation of case presentations on complex management, technical, and economic issues. Assisted in the preparation and conduct of pre-trial discovery and depositions. Helped identify and prepare expert witnesses. Aided the preparation of pre-hearing petitions and motions and post-hearing briefs and appeals. Assisted counsel in preparing for hearings and oral arguments. Advised counsel during settlement negotiations.

## **TESTIMONY**

### **Arizona Corporation Commission (Docket No. E-01345A-01-0822) – March 2002**

The reasonableness of Arizona Public Service Company's proposed long-term power purchase agreement with an affiliated company.

### **New York State Board on Electric Generation Siting and the Environment (Case No. 99-F-1627) – March 2002**

Repowering NYPA's existing Poletti Station in Queens, New York.

### **Connecticut Siting Council (Docket No. 217) – March 2002**

Whether the proposed 345-kV transmission line between Plumtree and Norwalk substations in Southwestern Connecticut is needed and will produce public benefits.

### **Vermont Public Service Board (Case No. 6545) – January 2002**

Whether the proposed sale of the Vermont Yankee Nuclear Plant to Entergy is in the public interest of the State of Vermont and Vermont ratepayers.

### **Connecticut Department of Public Utility Control (Docket 99-09-12RE02) – December 2001**

The reasonableness of adjustments that Connecticut Light and Power Company seeks to make to the proceeds that it received from the sale of Millstone Nuclear Power Station.

### **Connecticut Siting Council (Docket No. 208) – October 2001**

Whether the proposed cross-sound cable between Connecticut and Long Island is needed and will produce public benefits for Connecticut consumers.

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**New Jersey Board of Public Utilities (Docket No. EM01050308) - September 2001**

The market power implications of the proposed merger between Conectiv and Pepco.

**Illinois Commerce Commission Docket No. 01-0423 – August, September, and October 2001**

Commonwealth Edison Company's management of its distribution and transmission systems.

**New York State Board on Electric Generation Siting and the Environment (Case No. 99-F-1627) - August and September 2001**

The environmental benefits from the proposed 500 MW NYPA Astoria generating facility.

**New York State Board on Electric Generation Siting and the Environment (Case No. 99-F-1191) - June 2001**

The environmental benefits from the proposed 1,000 MW Astoria Energy generating facility.

**New Jersey Board of Public Utilities (Docket No. EM00110870) - May 2001**

The market power implications of the proposed merger between FirstEnergy and GPU Energy.

**Connecticut Department of Public Utility Control (Docket 99-09-12RE01) - November 2000**

The proposed sale of Millstone Nuclear Station to Dominion Nuclear, Inc.

**Illinois Commerce Commission (Docket 00-0361) - August 2000**

The impact of nuclear power plant life extensions on Commonwealth Edison Company's decommissioning costs and collections from ratepayers.

**Vermont Public Service Board (Docket 6300) - April 2000**

Whether the proposed sale of the Vermont Yankee nuclear plant to AmerGen Vermont is in the public interest.

**Massachusetts Department of Telecommunications and Energy (Docket 99-107, Phase II) - April and June 2000**

The causes of the May 18, 1999, main transformer fire at the Pilgrim generating station.

**Connecticut Department of Public Utility Control (Docket 00-01-11) - March and April 2000**

The impact of the proposed merger between Northeast Utilities and Con Edison, Inc. on the reliability of the electric service being provided to Connecticut ratepayers.

**Connecticut Department of Public Utility Control (Docket 99-09-12) - January 2000**

The reasonableness of Northeast Utilities plan for auctioning the Millstone Nuclear Station.

**Connecticut Department of Public Utility Control (Docket 99-08-01) - November 1999**

Generation, Transmission, and Distribution system reliability.

**Illinois Commerce Commission (Docket 99-0115) - September 1999**

Commonwealth Edison Company's decommissioning cost estimate for the Zion Nuclear Station.

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**Connecticut Department of Public Utility Control (Docket 99-03-36) - July 1999**  
Standard offer rates for Connecticut Light & Power Company.

**Connecticut Department of Public Utility Control (Docket 99-03-35) - July 1999**  
Standard offer rates for United Illuminating Company.

**Connecticut Department of Public Utility Control (Docket 99-02-05) - April 1999**  
Connecticut Light & Power Company stranded costs.

**Connecticut Department of Public Utility Control (Docket 99-03-04) - April 1999**  
United Illuminating Company stranded costs.

**Maryland Public Service Commission (Docket 8795) - December 1998**  
Future operating performance of Delmarva Power Company's nuclear units.

**Maryland Public Service Commission (Dockets 8794/8804) - December 1998**  
Baltimore Gas and Electric Company's proposed replacement of the steam generators at the Calvert Cliffs Nuclear Power Plant. Future performance of nuclear units.

**Indiana Utility Regulatory Commission (Docket 38702-FAC-40-S1) - November 1998**  
Whether the ongoing outages of the two units at the D.C. Cook Nuclear Plant were caused or extended by mismanagement.

**Arkansas Public Service Commission (Docket 98-065-U) - October 1998**  
Entergy's proposed replacement of the steam generators at the ANO Unit 2 Steam Generating Station.

**Massachusetts Department of Telecommunications and Energy (Docket 97-120) - October 1998**  
Western Massachusetts Electric Company's Transition Charge. Whether the extended 1996-1998 outages of the three units at the Millstone Nuclear Station were caused or extended by mismanagement.

**Connecticut Department of Public Utility Control (Docket 98-01-02) - September 1998**  
Nuclear plant operations, operating and capital costs, and system reliability improvement costs.

**Illinois Commerce Commission (Docket 97-0015) - May 1998**  
Whether any of the outages of Commonwealth Edison Company's twelve nuclear units during 1996 were caused or extended by mismanagement. Whether equipment problems, personnel performance weaknesses, and program deficiencies could have been avoided or addressed prior to plant outages. Outage-related fuel and replacement power costs.

**Public Service Commission of West Virginia (Case 97-1329-E-CN) - March 1998**  
The need for a proposed 765 kV transmission line from Wyoming, West Virginia, to Cloverdate, Virginia.

**Illinois Commerce Commission (Docket 97-0018) - March 1998**  
Whether any of the outages of the Clinton Power Station during 1996 were caused or extended by mismanagement.

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**Connecticut Department of Public Utility Control (Docket 97-05-12) - October 1997**

The increased costs resulting from the ongoing outages of the three units at the Millstone Nuclear Station.

**New Jersey Board of Public Utilities (Docket ER96030257) - August 1996**

Replacement power costs during plant outages.

**Illinois Commerce Commission (Docket 95-0119) - February 1996**

Whether any of the outages of Commonwealth Edison Company's twelve nuclear units during 1994 were caused or extended by mismanagement. Whether equipment problems, personnel performance weaknesses, and program deficiencies could have been avoided or addressed prior to plant outages. Outage-related fuel and replacement power costs.

**Public Utility Commission of Texas (Docket 13170) - December 1994**

Whether any of the outages of the River Bend Nuclear Station during the period October 1, 1991, through December 31, 1993, were caused or extended by mismanagement.

**Public Utility Commission of Texas (Docket 12820) - October 1994**

Operations and maintenance expenses during outages of the South Texas Nuclear Generating Station.

**Wisconsin Public Service Commission (Cases 6630-CE-197 and 6630-CE-209) - September and October 1994**

The reasonableness of the projected cost and schedule for the replacement of the steam generators at the Point Beach Nuclear Power Plant. The potential impact of plant aging on future operating costs and performance.

**Public Utility Commission of Texas (Docket 12700) - June 1994**

Whether El Paso Electric Company's share of Palo Verde Unit 3 was needed to ensure adequate levels of system reliability. Whether the Company's investment in Unit 3 could be expected to generate cost savings for ratepayers within a reasonable number of years.

**Arizona Corporation Commission (Docket U-1551-93-272) - May and June 1994**

Southwest Gas Corporation's plastic and steel pipe repair and replacement programs.

**Connecticut Department of Public Utility Control (Docket 92-04-15) - March 1994**

Northeast Utilities management of the 1992/1993 replacement of the steam generators at Millstone Unit 2.

**Connecticut Department of Public Utility Control (Docket 92-10-03) - August 1993**

Whether the 1991 outage of Millstone Unit 3 as a result of the corrosion of safety-related plant piping systems was due to mismanagement.

**Public Utility Commission of Texas (Docket 11735) - April and July 1993**

Whether any of the outages of the Comanche Peak Unit 1 Nuclear Station during the period August 13, 1990, through June 30, 1992, were caused or extended by mismanagement.

**Connecticut Department of Public Utility Control (Docket 91-12-07) - January 1993 and August 1995**

Whether the November 6, 1991, pipe rupture at Millstone Unit 2 and the related outages of the Connecticut Yankee and Millstone units were caused or extended by mismanagement. The impact of environmental requirements on power plant design and operation.

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**Connecticut Department of Public Utility Control (Docket 92-06-05) - September 1992**  
United Illuminating Company off-system capacity sales.

**Public Utility Commission of Texas (Docket 10894) - August 1992**

Whether any of the outages of the River Bend Nuclear Station during the period October 1, 1988, through September 30, 1991, were caused or extended by mismanagement.

**Connecticut Department of Public Utility Control (Docket 92-01-05) - August 1992**

Whether the July 1991 outage of Millstone Unit 3 due to the fouling of important plant systems by blue mussels was the result of mismanagement.

**California Public Utilities Commission (Docket 90-12-018) - November 1991, March 1992, June and July 1993**

Whether any of the outages of the three units at the Palo Verde Nuclear Generating Station during 1989 and 1990 were caused or extended by mismanagement. Whether equipment problems, personnel performance weaknesses and program deficiencies could have been avoided or addressed prior to outages. Whether specific plant operating cost and capital expenditures were necessary and prudent.

**Public Utility Commission of Texas (Docket 9945) - July 1991**

Whether El Paso Electric Company's share of Palo Verde Unit 3 was needed to ensure adequate levels of system reliability. Whether the Company's investment in the unit could be expected to generate cost savings for ratepayers within a reasonable number of years. El Paso Electric Company's management of the planning and licensing of the Arizona Interconnection Project transmission line.

**Arizona Corporation Commission (Docket U-1345-90-007) - December 1990 and April 1991**

Arizona Public Service Company's management of the planning, construction and operation of the Palo Verde Nuclear Generating Station. The costs resulting from identified instances of mismanagement.

**New Jersey Board of Public Utilities (Docket ER89110912J) - July and October 1990**

The economic costs and benefits of the early retirement of the Oyster Creek Nuclear Plant. The potential impact of the unit's early retirement on system reliability. The cost and schedule for siting and constructing a replacement natural gas-fired generating plant.

**Public Utility Commission of Texas (Docket 9300) - June and July 1990**

Texas Utilities management of the design and construction of the Comanche Peak Nuclear Plant. Whether the Company was prudent in repurchasing minority owners' shares of Comanche Peak without examining the costs and benefits of the repurchase for its ratepayers.

**Federal Energy Regulatory Commission (Docket EL-88-5-000) - November 1989**

Boston Edison's corporate management of the Pilgrim Nuclear Station.

**Connecticut Department of Public Utility Control (Docket 89-08-11) - November 1989**

United Illuminating Company's off-system capacity sales.

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**Kansas State Corporation Commission (Case 164,211-U) - April 1989**

Whether any of the 127 days of outages of the Wolf Creek generating plant during 1987 and 1988 were the result of mismanagement.

**Public Utility Commission of Texas (Docket 8425) - March 1989**

Whether Houston Lighting & Power Company's new Limestone Unit 2 generating facility was needed to provide adequate levels of system reliability. Whether the Company's investment in Limestone Unit 2 would provide a net economic benefit for ratepayers.

**Illinois Commerce Commission (Dockets 83-0537 and 84-0555) - July 1985 and January 1989**

Commonwealth Edison Company's management of quality assurance and quality control activities and the actions of project contractors during construction of the Byron Nuclear Station.

**New Mexico Public Service Commission (Case 2146, Part II) - October 1988**

The rate consequences of Public Service Company of New Mexico's ownership of Palo Verde Units 1 and 2.

**United States District Court for the Eastern District of New York (Case 87-646-JBW) - October 1988**

Whether the Long Island Lighting Company withheld important information from the New York State Public Service Commission, the New York State Board on Electric Generating Siting and the Environment, and the U.S. Nuclear Regulatory Commission.

**Public Utility Commission of Texas (Docket 6668) - August 1988 and June 1989**

Houston Light & Power Company's management of the design and construction of the South Texas Nuclear Project. The impact of safety-related and environmental requirements on plant construction costs and schedule.

**Federal Energy Regulatory Commission (Docket ER88-202-000) - June 1988**

Whether the turbine generator vibration problems that extended the 1987 outage of the Maine Yankee nuclear plant were caused by mismanagement.

**Illinois Commerce Commission (Docket 87-0695) - April 1988**

Illinois Power Company's planning for the Clinton Nuclear Station.

**North Carolina Utilities Commission (Docket E-2, Sub 537) - February 1988**

Carolina Power & Light Company's management of the design and construction of the Harris Nuclear Project. The Company's management of quality assurance and quality control activities. The impact of safety-related and environmental requirements on construction costs and schedule. The cost and schedule consequences of identified instances of mismanagement.

**Ohio Public Utilities Commission (Case 87-689-EL-AIR) - October 1987**

Whether any of Ohio Edison's share of the Perry Unit 2 generating facility was needed to ensure adequate levels of system reliability. Whether the Company's investment in Perry Unit 1 would produce a net economic benefit for ratepayers.

**North Carolina Utilities Commission (Docket E-2, Sub 526) - June 1987**

Fuel factor calculations.



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**New York State Public Service Commission (Case 29484) - May 1987**

The planned startup and power ascension testing program for the Nine Mile Point Unit 2 generating facility.

**Illinois Commerce Commission (Dockets 86-0043 and 86-0096) - April 1987**

The reasonableness of certain terms in a proposed Power Supply Agreement.

**Illinois Commerce Commission (Docket 86-0405) - March 1987**

The in-service criteria to be used to determine when a new generating facility was capable of providing safe, adequate, reliable and efficient service.

**Indiana Public Service Commission (Case 38045) - December 1986**

Northern Indiana Public Service Company's planning for the Schaefer Unit 18 generating facility. Whether the capacity from Unit 18 was needed to ensure adequate system reliability. The rate consequences of excess capacity on the Company's system.

**Superior Court in Rockingham County, New Hampshire (Case 86E328) - July 1986**

The radiation effects of low power testing on the structures, equipment and components in a new nuclear power plant.

**New York State Public Service Commission (Case 28124) - April 1986 and May 1987**

The terms and provisions in a utility's contract with an equipment supplier. The prudence of the utility's planning for a new generating facility. Expenditures on a canceled generating facility.

**Arizona Corporation Commission (Docket U-1345-85) - February 1986**

The construction schedule for Palo Verde Unit No. 1. Regulatory and technical factors that would likely affect future plant operating costs.

**New York State Public Service Commission (Case 29124) - January 1986**

Niagara Mohawk Power Corporation's management of construction of the Nine Mile Point Unit No. 2 nuclear power plant.

**New York State Public Service Commission (Case 28252) - October 1985**

A performance standard for the Shoreham nuclear power plant.

**New York State Public Service Commission (Case 29069) - August 1985**

A performance standard for the Nine Mile Point Unit No. 2 nuclear power plant.

**Missouri Public Service Commission (Cases ER-85-128 and EO-85-185) - July 1985**

The impact of safety-related regulatory requirements and plant aging on power plant operating costs and performance. Regulatory factors and plant-specific design features that will likely affect the future operating costs and performance of the Wolf Creek Nuclear Plant.

**Massachusetts Department of Public Utilities (Case 84-152) - January 1985**

The impact of safety-related regulatory requirements and plant aging on power plant operating costs and performance. Regulatory factors and plant-specific design features that will likely affect the future operating costs and performance of the Seabrook Nuclear Plant.

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**Maine Public Utilities Commission (Docket 84-113) - September 1984**

The impact of safety-related regulatory requirements and plant aging on power plant operating costs and performance. Regulatory factors and plant-specific design features that will likely affect the future operating costs and performance of the Seabrook Nuclear Plant.

**South Carolina Public Service Commission (Case 84-122-E) - August 1984**

The repair and replacement strategy adopted by Carolina Power & Light Company in response to pipe cracking at the Brunswick Nuclear Station. Quantification of replacement power costs attributable to identified instances of mismanagement.

**Vermont Public Service Board (Case 4865) - May 1984**

The repair and replacement strategy adopted by management in response to pipe cracking at the Vermont Yankee nuclear plant.

**New York State Public Service Commission (Case 28347) - January 1984**

The information that was available to Niagara Mohawk Power Corporation prior to 1982 concerning the potential for cracking in safety-related piping systems at the Nine Mile Point Unit No. 1 nuclear plant.

**New York State Public Service Commission (Case 28166) - February 1983 and February 1984**

Whether the January 25, 1982, steam generator tube rupture at the Ginna Nuclear Plant was caused by mismanagement.

**U.S. Nuclear Regulatory Commission (Case 50-247SP) - May 1983**

The economic costs and benefits of the early retirement of the Indian Point nuclear plants.

**REPORTS, ARTICLES, AND PRESENTATIONS**

*The Impact of Retiring the Indian Point Nuclear Power Station on Electric System Reliability.* A Synapse Report for Riverkeeper, Inc. and Pace Law School Energy Project. May 7, 2002.

*Preliminary Assessment of the Need for the Proposed Plumtree-Norwalk 345-kV Transmission Line.* A Synapse Report for the Towns of Bethel, Redding, Weston, and Wilton Connecticut. October 15, 2001.

*ISO New England's Generating Unit Availability Study: Where's the Beef?* A Presentation at the June 29, 2001 Restructuring Roundtable.

*Clean Air and Reliable Power: Connecticut Legislative House Bill HB6365 will not Jeopardize Electric System Reliability.* A Synapse Report for the Clean Air Task Force. May 2001.

*Room to Breathe: Why the Massachusetts Department of Environmental Protection's Proposed Air Regulations are Compatible with Reliability.* A Synapse Report for MASSPIRG and the Clean Water Fund. March 2001.

*Generator Outage Increases: A Preliminary Analysis of Outage Trends in the New England Electricity Market,* a Synapse Report for the Union of Concerned Scientists, January 7, 2001.

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*Cost, Grid Reliability Concerns on the Rise Amid Restructuring*, with Charlie Harak, Boston Business Journal, August 18-24, 2000.

*Report on Indian Point 2 Steam Generator Issues*, Schlissel Technical Consulting, Inc., March 10, 2000.

*Preliminary Expert Report in Case 96-016613, Cities of Wharton, Pasadena, et al v. Houston Lighting & Power Company*, October 28, 1999.

*Comments of Schlissel Technical Consulting, Inc. on the Nuclear Regulatory Commission's Draft Policy Statement on Electric Industry Economic Deregulation*, February 1997.

*Report to the Municipal Electric Utility Association of New York State on the Cost of Decommissioning the Fitzpatrick Nuclear Plant*, August 1996.

*Report to the Staff of the Arizona Corporation Commission on U.S. West Corporation's telephone cable repair and replacement programs*, May, 1996.

*Nuclear Power in the Competitive Environment*, NRRRI Quarterly Bulletin, Vol. 16, No. 3, Fall 1995.

*Nuclear Power in the Competitive Environment*, presentation at the 18th National Conference of Regulatory Attorneys, Scottsdale, Arizona, May 17, 1995.

*The Potential Safety Consequences of Steam Generator Tube Cracking at the Byron and Braidwood Nuclear Stations*, a report for the Environmental Law and Policy Center of the Midwest, 1995.

*Report to the Public Policy Group Concerning Future Trojan Nuclear Plant Operating Performance and Costs*, July 15, 1992.

*Report to the New York State Consumer Protection Board on the Costs of the 1991 Refueling Outage of Indian Point 2*, December 1991.

*Preliminary Report on Excess Capacity Issues to the Public Utility Regulation Board of the City of El Paso, Texas*, April 1991.

*Nuclear Power Plant Construction Costs*, presentation at the November, 1987, Conference of the National Association of State Utility Consumer Advocates.

*Comments on the Final Report of the National Electric Reliability Study*, a report for the New York State Consumer Protection Board, February 27, 1981.

## **OTHER SIGNIFICANT INVESTIGATIONS AND LITIGATION SUPPORT WORK**

Assisted the Connecticut Office of Consumer Counsel in reviewing the auction of Connecticut Light & Power Company's power purchase agreements. August and September, 2000.

Assisted the New Jersey Division of the Ratepayer Advocate in evaluating the reasonableness of Atlantic City Electric Company's proposed sale of its fossil generating facilities. June and July, 2000.

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Investigated whether the 1996-1998 outages of the three Millstone Nuclear Units were caused or extended by mismanagement. 1997 and 1998. Clients were the Connecticut Office of Consumer Counsel and the Office of the Attorney General of the Commonwealth of Massachusetts.

Investigated whether the 1995-1997 outages of the two units at the Salem Nuclear Station were caused or extended by mismanagement. 1996-1997. Client was the New Jersey Division of the Ratepayer Advocate.

Assisted the Associated Industries of Massachusetts in quantifying the stranded costs associated with utility generating plants in the New England states. May through July, 1996

Investigated whether the December 25, 1993, turbine generator failure and fire at the Fermi 2 generating plant was caused by Detroit Edison Company's mismanagement of fabrication, operation or maintenance. 1995. Client was the Attorney General of the State of Michigan.

Investigated whether the outages of the two units at the South Texas Nuclear Generating Station during the years 1990 through 1994 were caused or extended by mismanagement. Client was the Texas Office of Public Utility Counsel.

Assisted the City Public Service Board of San Antonio, Texas in litigation over Houston Lighting & Power Company's management of operations of the South Texas Nuclear Generating Station.

Investigated whether outages of the Millstone nuclear units during the years 1991 through 1994 were caused or extended by mismanagement. Client was the Office of the Attorney General of the Commonwealth of Massachusetts.

Evaluated the 1994 Decommissioning Cost Estimate for the Maine Yankee Nuclear Plant. Client was the Public Advocate of the State of Maine.

Evaluated the 1994 Decommissioning Cost Estimate for the Seabrook Nuclear Plant. Clients were investment firms that were evaluating whether to purchase the Great Bay Power Company, one of Seabrook's minority owners.

Investigated whether a proposed natural-gas fired generating facility was need to ensure adequate levels of system reliability. Examined the potential impacts of environmental regulations on the unit's expected construction cost and schedule. 1992. Client was the New Jersey Rate Counsel.

Investigated whether Public Service Company of New Mexico management had adequately disclosed to potential investors the risk that it would be unable to market its excess generating capacity. Clients were individual shareholders of Public Service Company of New Mexico.

Investigated whether the Seabrook Nuclear Plant was prudently designed and constructed. 1989. Clients were the Connecticut Office of Consumer Counsel and the Attorney General of the State of Connecticut.

Investigated whether Carolina Power & Light Company had prudently managed the design and construction of the Harris nuclear plant. 1988-1989. Clients were the North Carolina Electric Municipal Power Agency and the City of Fayetteville, North Carolina.

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Investigated whether the Grand Gulf nuclear plant had been prudently designed and constructed. 1988. Client was the Arkansas Public Service Commission.

Reviewed the financial incentive program proposed by the New York State Public Service Commission to improve nuclear power plant safety. 1987. Client was the New York State Consumer Protection Board.

Reviewed the construction cost and schedule of the Hope Creek Nuclear Generating Station. 1986-1987. Client was the New Jersey Rate Counsel.

Reviewed the operating performance of the Fort St. Vrain Nuclear Plant. 1985. Client was the Colorado Office of Consumer Counsel.

## **WORK HISTORY**

2000 - Present: Senior Consultant, Synapse Energy Economics, Inc.

1994 - 2000: President, Schlissel Technical Consulting, Inc.

1983 - 1994: Director, Schlissel Engineering Associates

1979 - 1983: Private Legal and Consulting Practice

1975 - 1979: Attorney, New York State Consumer Protection Board

1973 - 1975: Staff Attorney, Georgia Power Project

## **EDUCATION**

1983-1985: Massachusetts Institute of Technology  
Special Graduate Student in Nuclear Engineering and Project Management,

1973: Stanford Law School,  
Juris Doctor

1969: Stanford University  
Master of Science in Astronautical Engineering,

1968: Massachusetts Institute of Technology  
Bachelor of Science in Astronautical Engineering,

## **PROFESSIONAL MEMBERSHIPS**

- New York State Bar since 1981
- American Nuclear Society
- National Association of Corrosion Engineers
- National Academy of Forensic Engineers (Correspondent Affiliate)