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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 Office of the President, Borough of Queens and
7 Citizens Helping to Organize a Kleaner Environment.

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 electricity restructuring,
11 particularly issues of consumer protection, market power, electricity market
12 prices, stranded costs, efficiency, renewable energy, environmental quality, and
13 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 Staff of the Kansas State Corporation
25 Commission, the Arkansas Public Service Commission, municipal utility systems
26 in Massachusetts, New York, Texas, and North Carolina, and the Attorney
27 General of the Commonwealth of Massachusetts.

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

8 A. Synapse was retained by the Office of the President, Borough of Queens
9 (“Queens”) and Citizens Helping to Organize a Kleaner Environment
10 (“CHOKER”) to examine issues related to SCS’s proposed Astoria Energy facility.
11 This testimony presents the results of our examination and investigation of the
12 Applicant’s production modeling analysis and its claim that the proposed facility
13 will produce significant environmental benefits.

14 **Q. Please explain how Synapse conducted its investigations and analyses on this**
15 **issue.**

16 A. We submitted discovery to the Applicant and reviewed the materials that were
17 provided in response to that discovery. In particular, we examined the MAPS
18 computer runs that were performed as part of the Applicant’s production
19 modeling analysis. We also compared the results of the Applicant’s analysis with
20 other MAPS analyses for New York State. In addition, we assessed the
21 reasonableness of the input assumptions used in the Applicant’s production
22 modeling analysis.

23 **Q. Please summarize your findings.**

24 A. I have found that:

25 1. The Applicant’s production modeling analysis using the GE MAPS model
26 overstates the environmental benefits that would result from the addition
27 of the SCS’s proposed 1,000 MW Astoria Energy facility.

- 1 2. The Applicant's MAPS analysis does not include all of the existing
2 electric generating capacity in New York City. In particular, its does not
3 include the 440 MW of combustion turbine capacity that is being installed
4 by NYPA at 11 locations in the City and on Long Island.

- 5 3. The Applicant has appropriately included in its production modeling
6 analysis six proposed generating facilities planned for sites in Upstate
7 New York. However, the Applicant incorrectly assumes that all of these
8 facilities will be in-service for the entire year 2004 and that each unit will
9 operate at a very high annual capacity factor during its initial years of
10 operation.

- 11 4. The Applicant has inappropriately excluded three of the proposed in-City
12 electric generating facilities: the repowered East River Plant, Keyspan's
13 Ravenswood Cogeneration project, and the NYPA Astoria facility. Each
14 of these facilities is currently undergoing review by the Siting Board.
15 Two of these facilities are scheduled to enter service prior to 2004.

- 16 5. As a result, the Applicant's production modeling analysis does not include
17 more than 1,350 MW of capacity from existing units and from proposed
18 in-City facilities that are currently undergoing Article X review. The
19 impact of this capacity must be considered when evaluating the benefits
20 that would be produced by the proposed Astoria Energy facility.

- 21 6. KeySpan and NYPA both have claimed that their projects will displace
22 generation from the same older, less efficient and highly polluting
23 generating capacity that SCS Astoria claims its 1,000 MW facility will
24 displace. For example, together SCS Astoria and KeySpan appear to be
25 displacing more than 100 percent of the expected generation from the
26 existing Poletti Station. In addition, SCS Astoria, KeySpan and NYPA are
27 all projecting that their proposed facilities will displace generation from
28 the existing Arthur Kill, Ravenswood, and Astoria units.

- 29 7. The Applicant's production modeling analysis excludes the Air Quality
30 Improvement Program that KeySpan is implementing at the Ravenswood

1 facility. This program is expected to reduce the NO_x emissions from the
2 existing Ravenswood units by 750 tons per year. The Air Quality
3 Improvement Program will reduce the environmental benefits that the
4 proposed Astoria Energy facility would achieve through the displacement
5 of generation from these existing units.

6 8. The Applicant's production modeling analysis also excludes Orion's
7 planned repowering of the existing Astoria units. This planned
8 repowering will increase the output of the facility by 500 MW while
9 reducing its emissions of NO_x and SO₂ by over 90 percent. This project
10 also will dramatically reduce the environmental benefits claimed for SCS
11 Astoria's proposed facility.

12 9. The Applicant's production modeling analysis predicts that the net amount
13 of electricity generated within New York City would increase by
14 approximately 4 million MWH as a result of the addition of the proposed
15 Astoria Energy facility. This reflects the fact that only slightly more than
16 one-third of the generation that would be displaced by the proposed
17 facility would come from plants located in New York City. The remaining
18 two-thirds of the displaced generation would come from plants in Upstate
19 New York and in Pennsylvania, New Jersey, and Maryland.

20 10. According to the Applicant's MAPS analysis, the proposed Astoria
21 Energy facility will displace some of the generation from the new
22 Bethlehem, Bowline, Ramapo and Torne Valley facilities. In fact, Astoria
23 Energy would displace approximately nine percent of the expected output
24 from the new Bowline Unit 3. The proposed Astoria Energy facility might
25 displace even more of the generation from these new Upstate plants if the
26 other newly installed and proposed in-city capacity were included in the
27 production modeling analysis.

28 11. For these reasons, the Applicant's production modeling analysis using the
29 MAPS computer model provides an unrealistic assessment of the
30 environmental benefits that would be produced by the addition of the

1 proposed Astoria Energy facility. In particular, the Applicant's analysis
2 appears to substantially overstate the environmental benefits that would be
3 provided by its proposed 1,000 MW generating facility.

4 12. When new in-city, Upstate, PJM (Pennsylvania-New Jersey-Maryland)
5 and New England generating capacity is properly considered, it is possible
6 that a smaller facility would produce the same levels of environmental
7 benefits within the New York Metropolitan severe ozone non-attainment
8 area as SCS Astoria's proposed 1,000 MW facility.

9 13. I have not found that the proposed facility will not produce environmental
10 benefits. However, the flaws that I have identified in the Applicant's
11 existing production modeling analysis make it impossible to determine
12 that the proposed facility will produce significant environmental benefits.

13 14. Consequently, the Applicant should be required to reperform its
14 production modeling analysis using assumptions consistent with the
15 findings presented in this testimony. The Applicant also should be
16 required to examine the levels of environmental benefits that would be
17 provided by its construction and operation of a smaller facility.

18 **Q. Please explain why it is important that there be a reasonable projection of**
19 **the benefits that the proposed Astoria Energy facility would produce in the**
20 **record when the Siting Board decides whether to grant a certificate to build**
21 **or operate a major electric generating facility.**

22 A. PSL Sections 168(1) and 168(2) require that the Siting Board must make a
23 number of specific findings on the basis of the record developed before the
24 Presiding Examiner before it may grant a certificate for the construction or
25 operation of a major electric generating facility. These findings include:

26 (b) The nature of the probable environmental impacts, including an evaluation
27 of the predictable adverse and beneficial impacts on the environment and
28 ecology, public health and safety ... air and water quality, including the
29 cumulative effect of air emissions from existing facilities and the potential
30 for significant deterioration in local air quality with particular attention to
31 facilities located in areas designated as severe nonattainment....

1 (c) That the facility (i) minimizes adverse environmental impacts (ii) is
2 compatible with the public health and safety, ... (iv) will not emit any
3 pollutants to the air that will be in contravention of applicable air emission
4 control requirements or air quality standards....

5 (e) That the construction and operation of the facility is in the public interest,
6 considering the environmental impacts of the facility
7

8 It is essential that there be a reasonable estimate of the benefits that the proposed
9 facility would produce in order for the Siting Board to do the balancing of
10 environmental benefits called for under these Sections of the Public Service Law.

11 **Q. What claims has the Applicant made concerning the benefits that would be**
12 **created by the construction and operation of the proposed Astoria Energy**
13 **facility?**

14 A. SCS Astoria has made a number of claims concerning the environmental benefits
15 that would be produced by the proposed Astoria Energy facility including the
16 claim that by virtue of its high efficiency and high degree of emissions controls,
17 “the Project will lower emissions of NO_x, SO₂, and CO₂ in New York State as a
18 whole and from existing plants in the immediate vicinity of the Project.”¹ The
19 Applicant then quantified these environmental benefits in Section 16 of the
20 Application. The same quantification also was presented in Appendix 1.0.

21 **Q. Please describe the analysis that the Applicant has provided to justify these**
22 **claims.**

23 A. The Applicant has presented a production modeling analysis for the year 2004 for
24 the proposed Astoria Energy facility that is based upon General Electric's Market
25 Assessment and Portfolio Strategies ("MAPS") model. This production modeling
26 analysis examined two scenarios: one scenario included the proposed Astoria
27 Energy facility and the other was without the proposed facility. The details of the
28 MAPS modeling are discussed at pages 2 and 3 of Appendix 1.0 to the Article X
29 Application.

¹ See the testimony of Dr. Susan F. Tierney, at page 2.

1 **Q. Have other Applicants seeking to build new electric generating facilities in**
2 **New York City presented similar MAPS production modeling analyses?**

3 A. Yes. Both KeySpan and NYPA have presented similar MAPS analyses as part of
4 their Article X Applications. However, KeySpan performed MAPS analyses for
5 at least the three year period 2003-2005.²

6 **Q. Does the Applicant's MAPS analysis exclude any existing generating**
7 **capacity?**

8 A. Yes. The Applicant's MAPS analysis does not include the 440 MW of combustion
9 turbine capacity which NYPA is in the process of installing at 11 locations in
10 New York City and on Long Island.

11 **Q. Please explain why is it necessary that this capacity be included in the MAPS**
12 **analysis?**

13 A. Without this capacity, the MAPS analysis will not provide a reasonable forecast
14 of the benefits that the proposed Astoria Energy facility would produce. In other
15 words, the existing 440 MW of NYPA combustion turbines might displace some
16 of the generation from older, less efficient plants that SCS is claiming its facility
17 will displace.

18 **Q. Does the Applicant's MAPS analysis include any proposed generating**
19 **facilities?**

20 A. Yes. The Applicant has included six proposed facilities for which Article X
21 Applications had been filed as of April 2000. These include the Athens
22 Generating Plant, the Bethlehem Energy Center, Bowline Unit 3, Ramapo Energy
23 Project, Heritage, and Torne Valley Station.

² Section 15 of KeySpan's Article X Application in Case 99-F-1625.

1 **Q. Do you agree that it is appropriate to consider these facilities when**
2 **projecting the benefits that the proposed Astoria Energy facility would**
3 **produce?**

4 A. Yes. I believe it is entirely appropriate and necessary to include these facilities in
5 any analysis of the benefits that would be provided by a new unit such as the
6 proposed Astoria Energy facility.

7 **Q. Where are the planned sites for these proposed facilities?**

8 A. All six of the planned sites for these proposed facilities are located outside of New
9 York City.³ Three of the proposed facilities will be located in Rockland County.
10 Two will be along the Hudson River just south of Albany. The sixth proposed
11 facility will be located near Oswego, New York.

12 **Q. When are these six facilities scheduled to enter commercial operations?**

13 A. According to information published by the Department of Public Service, the six
14 proposed facilities that are included in the Applicant's MAPS analysis have the
15 following estimated earliest in-service dates⁴:

- 16 • Athens Generating Plant -- 3rd Quarter 2003
- 17 • Bethlehem Energy Center -- 3rd Quarter 2004
- 18 • Bowline Unit 3 -- 2nd Quarter 2004
- 19 • Heritage -- 1st Quarter 2004
- 20 • Ramapo Energy Project -- 2nd Quarter 2004
- 21 • Torne Valley Station -- NA

³ See Exhibit DAS-2.

⁴ Exhibit DAS-2.

1 **Q. Does the Applicant's MAPS analysis reflect all of these projected in-service**
2 **dates?**

3 A. No. The Applicant's MAPS analysis assumes that all of these plants would be in
4 operation for the full year of 2004 even though the Department of Public Service
5 lists estimated earliest in-service dates of the 2nd Quarter of 2004 for two of the
6 units, (i.e., Bowline and Ramapo) and the 3rd Quarter of 2004 for a third unit
7 (Bethlehem).⁵ A fourth unit (Torne Valley) has no estimated earliest in-service
8 date.

9 Moreover, the Applicant's MAPS analysis assumes that these six facilities will
10 operate at very high annual capacity factors for 2004, e.g., Athens Generating
11 Plant (82% percent capacity factor), Bethlehem (89%), Bowline Unit 3 (76%),
12 Heritage (90%), Ramapo (89%), and Torne Valley (90%). It is extremely
13 unrealistic to assume that these new plants, even if they were in service for the
14 entire year, would be able to achieve such high capacity factors during their early
15 years of operation. Indeed, the operating performance of the seven new combined
16 cycle units that have entered service in New England in the past two years has
17 been very poor. These units have achieved only a combined weighted equivalent
18 availability factor of 32 percent in 1999 and 63 percent in 2000, according to a
19 recent study by the New England Independent System Operator.⁶

20 Consequently, the results of the Applicant's production modeling analysis are
21 distorted by unrealistic assumptions that (1) all six of these plants will be in
22 service for all of 2004 and (2) that all five of the six plants would achieve capacity
23 factors above 80 percent nearly their early years of operation. The Applicant's
24 assumption that the Astoria Energy facility would achieve a 68 percent capacity
25 factor in its first year of operation may be similarly unrealistic.

⁵ Exhibit DAS-2.

⁶ *Understanding New England Generating Unit Availability*, prepared for ISO New England, Inc., dated June 14, 2001, at page 16.

1 **Q. Does the Applicant's MAPS analysis exclude any proposed generating**
2 **facilities?**

3 A. Yes. The Applicant's MAPS analysis excludes the following three generating
4 facilities which are currently undergoing Article X review: the East River
5 Repowering Project, the KeySpan Ravenswood Cogeneration Project, and the
6 NYPA Astoria Project. The Applicant also does not include the Sunset Energy
7 Fleet project, another in-city facility for which an Article X Application has been
8 submitted.⁷

9 **Q. What are the currently forecast in-service dates for these three in-city**
10 **facilities and how many megawatts of capacity will they provide?**

11 A. As shown on Exhibit DAS-2, the estimated earliest in-service date for the 360
12 MW repowered East River Plant is the 4th Quarter of 2002. The 250 MW
13 KeySpan Ravenswood Cogeneration facility has a 2003 estimated earliest in-
14 service date. The estimated earliest in-service date for the NYPA Astoria facility
15 is the 3rd Quarter of 2004.

16 This means that the Applicant's MAPS analysis does not include more than 1,350
17 MW of capacity from existing units (i.e., the NYPA combustion turbines) and
18 from proposed in-city facilities that are currently undergoing Article X review.

19 **Q. Do the MAPS analyses prepared by KeySpan and NYPA include any of these**
20 **proposed in-city facilities?**

21 A. Yes. KeySpan's production modeling analysis for its proposed Ravenswood
22 Cogeneration facility included both the repowered East River Plant and the
23 proposed Astoria Energy facility. NYPA's MAPS modeling for its proposed
24 Astoria facility included the repowered East River Plant, the SCS Astoria Energy
25 Project, and the KeySpan Ravenswood facility. NYPA also included the 500 MW
26 Sunset Energy Fleet facility proposed for Brooklyn.

⁷ Exhibit DAS-2.

1 **Q. What is the current status of the Article X review of each of these proposed**
2 **in-city facilities?**

3 A. As shown on Exhibit DAS-2, an agreement settling all Article X issues for the
4 proposed KeySpan Ravenswood facility is being negotiated. The initial hearings
5 for the proposed repowered East River Plant have been completed and briefs have
6 been filed although several issues are before the Siting Board on appeal. The
7 hearing process has been started for the proposed NYPA Astoria facility.

8 **Q. What is the current status of the Article X review of each of the six proposed**
9 **upstate facilities that are included in the Applicant's MAPS analysis?**

10 A. The Athens Generating Plant and the Heritage facility have received their
11 certificates from the Siting Board.⁸ Bowline Unit 3 and Ramapo Energy Project
12 are in the Article X hearing process. However, the applications for the Bethlehem
13 and Torne Valley projects have not yet been found to be in compliance with
14 Article X requirements. Consequently, the hearing process has not yet started for
15 either of these two proposed facilities.

16 **Q. Do you think it is reasonable for the Siting Board to rely on SCS Astoria's**
17 **production modeling analysis that includes two facilities planned for outside**
18 **New York City whose Article X Applications have not yet been found to be**
19 **complete (i.e., Bethlehem and Torne) but excludes the three in-city facilities**
20 **which are currently being settled or are in the Article X hearing process?**

21 A. No. I think it is important that the six upstate facilities included by SCS and the
22 three excluded in-city facilities all be included in the MAPS analysis. It makes no
23 sense to exclude in-city capacity that is currently installed or expected to be in
24 service by the end of 2003 while Upstate facilities that are not expected to be in
25 service until late 2004, at the earliest, are included.

26 In addition, if the Applicant's MAPS analysis is meant to represent a typical year,
27 instead of the specific year of 2004, it is even more important that it include more

⁸ Exhibit DAS-2.

1 than just the six new upstate generating facilities that it now includes. Other
2 generating capacity, such as the proposed in-city facilities that I have discussed,
3 almost certainly will be added to the New York State electric system in the near
4 future.⁹ The impact of this new capacity should be considered when evaluating
5 the environmental benefits that would be produced by the proposed Astoria
6 Energy facility.

7 **Q. Please explain why it is important for the Siting Board to require SCS**
8 **Astoria to include the existing NYPA combustion turbines and the proposed**
9 **in-city proposed facilities in its MAPS analysis.**

10 A. SCS Astoria has claimed that the proposed Astoria Energy facility would have a
11 large impact on existing power plants in Queens by reducing generation at the
12 existing Astoria units, Ravenswood, and Poletti Stations by 46%, 30% and 62%,
13 respectively.¹⁰ But this claim is based on a MAPS analysis that does not include
14 the other existing and proposed in-city facilities that I have discussed.

15 The absence of this other in-city capacity is significant because both KeySpan and
16 NYPA have claimed that their proposed projects will displace generation from the
17 same older, less efficient and highly polluting generating capacity that SCS
18 Astoria Energy claims its 1,000 MW facility will displace. For example, SCS
19 Astoria Energy projects that the Poletti facility will generate 217,429 MWH of
20 electricity in 2004 if the proposed Astoria Energy project is not built. SCS then
21 says its Astoria Energy project would then displace 134,849 MWH, or 62 percent,
22 of this expected Poletti generation.

23 However, KeySpan projects that its KeySpan Ravenswood facility will displace
24 95,600 MWH of Poletti's output in 2004. Consequently, KeySpan and SCS
25 Astoria Energy are together claiming credit for displacing 230,000 MWH, or 106
26 percent, of the expected generation that Poletti would produce in 2004 if their

⁹ For example, *Power Alert, New York's Energy Crossroads*, issued in March 2001 by the New York Independent System Operator, calls for 8,600 MW of new installed generating capacity by 2005.

¹⁰ Appendix 1.0, at pages 4 and 5.

1 proposed KeySpan Ravenswood and Astoria Energy facilities are not built.
2 Obviously, this is not a realistic conclusion.

3 In addition, SCS Astoria, KeySpan and NYPA all project that their proposed
4 facilities will displace generation from the existing Arthur Kill, Ravenswood units
5 and Astoria units. It may be true that each of their proposed facilities will
6 displace some generation that would otherwise be produced at the existing
7 Ravenswood and Astoria units. But it is also possible that the applicants for these
8 three facilities are double or triple counting the benefits that can be obtained from
9 displacing the generation from Ravenswood and Astoria.

10 **Q. Are there any emission reduction projects at existing electric generating**
11 **facilities that also should be included in the MAPS analysis for the proposed**
12 **Astoria Energy facility?**

13 A. Yes. KeySpan has initiated an Air Quality Improvement Program designed to
14 reduce the NO_x emissions at its existing Ravenswood Units. According to
15 KeySpan this program will decrease NO_x emissions from Ravenswood Units 1
16 through 3 by as much as 22 percent, a reduction of an estimated 750 tons per
17 year.¹¹ KeySpan has estimated that the NO_x emissions reductions from this
18 improvement program is equivalent to the emissions from a 350 MW generating
19 station. The reductions will be achieved by the installation of advance low NO_x
20 combustion control systems in the boilers of the three largest Ravenswood units.
21 SCS Astoria's MAPS analysis overstates the benefits that will result from the
22 operation of the proposed Astoria Energy facility because it does not reflect the
23 reduced NO_x emissions in Queens that will result from the KeySpan Ravenswood
24 Air Quality Improvement Program whether or not the proposed Astoria Energy
25 facility is built.

26 At the same time, Orion is proposing to repower its Astoria facilities. This project
27 is significant because SCS Astoria's production modeling analysis shows that the
28 proposed Astoria Energy facility would displace a substantial amount of the

¹¹ KeySpan Ravenswood Article X Application, Case 99-F-1625, at pages ES-2 and ES-7.

1 expected generation from generation from the existing Astoria units. In fact,
2 approximately one-third of the generation that SCS Astoria is claiming its
3 proposed facility would displace in Queens would be from Orion's existing
4 Astoria Units 3-5. However, Orion has announced that it intends to repower these
5 units which will increase the output of the facility by 500 MW while reducing the
6 facility's emissions of NO_x and SO₂ by more than 90 percent. This repowering
7 project also will dramatically reduce the environmental benefits from SCS's
8 proposed Astoria Energy facility even if that facility were to displaced the
9 generation from Orion's repowered Astoria units.

10 For example, SCS Astoria has claimed that the addition of its proposed Astoria
11 Energy facility would reduce the annual NO_x emissions from the existing Astoria,
12 Ravenswood, and Poletti Stations by over 1,300 tons.¹² A rough approximation
13 shows that just the Ravenswood Air Quality Improvement Program and the
14 repowering of the existing Astoria units would decrease this figure by
15 substantially more than 50 percent. This decrease would be even greater if it
16 reflected the generation at the existing Astoria, Ravenswood, and Poletti Station
17 that would be displaced by the KeySpan Ravenswood, repowered East River and
18 NYPA Astoria facilities rather than by Astoria Energy.

19 **Q. Does SCS Astoria production modeling analysis show that all of the**
20 **generation that would be displaced by the proposed Astoria Energy facility**
21 **would have come from plants located in New York City?**

22 A. No. The Applicant's MAPS analysis predicts that the net amount of electricity
23 generated in New York City actually would increase by approximately 4 million
24 MWH if the proposed Astoria Energy facility were built.

25 This reflects the fact that only slightly more than one-third of the generation that
26 would be displaced by the proposed Astoria facility would have come from plants
27 located in ConEd's service territory. Most of the remaining two-thirds would have

¹² Appendix 1.0, at page 7.

1 come from plants located in the rest of New York State. Approximately seven
2 percent would have come from plants located outside the State.

3 **Q. Which plants in New York State would generate less electricity if the**
4 **proposed Astoria Energy facility were built?**

5 A. The output files for the Applicant's MAPS analysis show that approximately 21
6 percent of the generation that would be displaced by the Astoria Energy facility
7 would have come from plants located in Central Hudson's service territory
8 between West Point and Albany. Another 24 percent of the displaced generation
9 would have come from units located in the central and western regions of the
10 State. It is unclear from the Applicant's MAPS analyses why some of this same
11 generation would not be displaced by the new gas-fired facilities being built along
12 the Hudson River or near Oswego.

13 As a result, most of the benefit from the proposed Astoria Energy facility would
14 be gained by areas in Upstate New York while the residents of Northwest Queens
15 and the New York Metropolitan area would see the amount of electricity
16 generated in their community increase by 4 GWH per year. This increase would
17 be accompanied by PM 10 emissions and by NOx emissions within a severe
18 ozone non-attainment area, both of which can be considered adverse
19 environmental impacts.

20 **Q. Does the Applicant's MAPS analysis reflect any of the new generating**
21 **facilities being built in PJM?**

22 A. No. The Applicant's MAPS analysis does not include any of the new generating
23 capacity being built in PJM.¹³ Therefore, it is possible that the more than 450,000
24 MWH of generation in PJM that the Applicant's MAPS analysis forecasts would
25 be displaced by the Astoria Energy facility actually will be displaced by some of
26 the new generating facilities being built in PJM. Consequently, the more than 600
27 tons of annual NO_x emissions reductions in Pennsylvania-New Jersey-Maryland,

¹³ SCS Astoria response to Information Request No. QBP/CHOKE-87.

1 and the resultant “significant additional regional air quality benefits” that the
2 Applicant attributes to its proposed facility might be obtained whether or not
3 Astoria Energy is added.

4 **Q. Does the Applicant’s MAPS analysis reflect any of the 8,000 MW of new**
5 **generating facilities that are under construction in New England?**

6 A. No. The Applicant’s MAPS analysis only models New York and PJM and only
7 includes the import of relatively small amounts of energy from New England.
8 Consequently, the Applicant’s analysis does not reflect the new generating
9 capacity that is currently being built in New England. This is a significant
10 omission. It is currently expected that there will be substantial amounts of excess
11 capacity in New England starting in 2004 and 2005, especially during the non-
12 summer-peak periods, as a result of the addition of the approximately 8,000 MW
13 of new gas-fired capacity that is under construction.¹⁴ It is reasonable to expect
14 that the import of some of this capacity into New York could displace some of the
15 generation that SCS is claiming that its proposed facility will displace.

16 **Q. How would the construction and operation of the proposed Astoria Energy**
17 **facility affect the emissions of SO₂ from power plants in Queens?**

18 A. The Applicant’s own numbers show that the proposed Astoria Energy facility
19 would increase SO₂ emissions in Queens. At page 6 of Appendix 1.0, the
20 Applicant notes that the proposed facility would produce 95 tons of SO₂ in 2004.
21 Table 4 on page 7 of Appendix 1.0 then shows that the addition of the Astoria
22 Energy facility would decrease SO₂ emissions from the existing Astoria,
23 Ravenswood, and Poletti by only 17 tons. This would mean an **increase** in SO₂
24 emissions in Queens of approximately 78 tons.

25 At the same time, the output files for the Applicant’s MAPS analysis shows that
26 overall SO₂ emissions in New York City would increase by 51 tons due to the
27 addition of the Astoria Energy facility. Obviously, the large decreases in SO₂

¹⁴ Another 4,000 MW of new generating capacity has been licensed in New England but is not yet under construction.

1 emissions claimed by the Applicant would come from coal and oil-fired facilities
2 located outside of Queens and New York City.

3 **Q. Would the proposed Astoria Energy facility affect the operations of any of**
4 **the other proposed generating facilities now undergoing Article X review?**

5 A. The Applicant's MAPS analysis predicts that output from the proposed Astoria
6 Energy facility would, in fact, displace some of the output from the proposed
7 Bethlehem, Bowline Unit 3, Ramapo and Torne Valley facilities. The amounts of
8 generation from the Bethlehem, Ramapo and Torne Valley facilities that would be
9 displaced by Astoria Energy would be relatively minor. However, approximately
10 nine percent, or 388 GWH, of the output from the proposed Bowline Unit 3 would
11 be displaced by the Astoria Energy facility. The Applicant's production modeling
12 analysis might show that the proposed Astoria Energy facility would displace
13 even more of the generation from each of the new Upstate plants if the other
14 newly installed and proposed in-city capacity that I have discussed earlier (e.g.,
15 the repowered East River, KeySpan Ravenswood, NYPA Astoria, and repowered
16 Orion projects) were included.

17 In fact, the Article X Application for NYPA's Astoria project indicates that this
18 proposed facility would displace some of the generation that would otherwise be
19 produced at SCS's Astoria Energy facility.¹⁵ This example and those of the
20 Bethlehem, Bowline Unit 3, Ramapo, and Torne Valley facilities discussed above
21 show that as more generating facilities are added to the electric system, these new
22 plants will end up displacing each other, particularly during non-peak periods
23 when the capacity available from the significant amounts of efficient new gas-
24 fired capacity that is being added in New York City, Upstate, and in PJM, and the
25 existing low cost facilities such as the Indian Point nuclear units, will
26 substantially exceed the hourly loads.

27 This displacement would affect the environmental benefits produced by the
28 proposed Astoria Energy facility in two ways. First, as I have explained in detail,

¹⁵ Table 16.4 on page 16-3 of NYPA's Article X Application in Case 99-F-1627.

1 other new facilities will displace some of the generation from older, less efficient
2 plants that SCS Astoria predicts will be displaced by its proposed facility. Second,
3 the emissions from the Astoria Energy facility itself could increase. Documents
4 provided by SCS Astoria show that the NO_x emissions rates increase by a factor
5 of 4 or more if a GE Frame 7FA combustion turbine is operated below the 50
6 percent load level.¹⁶ Consequently, emissions from the proposed Astoria Energy
7 facility could increase if it is subjected to more frequent starts and stops and/or
8 has to operate at lower gas turbine load levels.¹⁷ The emissions rates for other
9 pollutants by the proposed facility also would be higher if the facility were not
10 able to operate in the 50 percent to 100 percent load steady-state mode assumed in
11 the Applicant's production modeling analysis.

12 **Q. What are your conclusions?**

13 A. The Applicant's production modeling analysis using the MAPS computer model
14 provides an unrealistic assessment of the environmental benefits that would be
15 produced by the addition of the proposed Astoria Energy facility. In particular,
16 the Applicant's analysis appears to substantially overstate the environmental
17 benefits that would be provided by its proposed 1,000 MW generating facility. A
18 comparison of the Applicant's analysis with the results of similar analyses
19 performed by KeySpan and NYPA further suggests that many of the same
20 environmental benefits might be achieved, and the public interest might be
21 served, by the addition of a smaller facility.

22 Therefore, the Applicant should be required to reperform its production modeling
23 analysis using assumptions consistent with the findings presented in this
24 testimony. The Applicant also should be required to examine what levels of
25 environmental benefits would be provided by its construction and operation of a
26 smaller facility.

¹⁶ SCS Astoria response to Information Request No. QBP/CHOKE-85.

¹⁷ Emissions from other new facilities also could increase if they are subjected to more frequent starts and stops or have to operate at lower turbine load levels.

1 **Q. Have you concluded that the proposed Astoria Energy facility will not**
2 **produce significant environmental benefits?**

3 A. No. I have not reached that conclusion and it may be that the proposed facility
4 will produce significant environmental benefits. However, the flaws that I have
5 identified in the Applicant's existing production modeling analysis make it
6 impossible to assess the levels of environmental benefits the proposed facility is
7 likely to produce.

8 **Q. Do your findings also apply to the Applicant's claim that the addition of the**
9 **proposed Astoria Energy facility would reduce wholesale spot electricity**
10 **prices throughout New York State?**

11 A. Yes. For the reasons I have discussed, it also is impossible to determine the
12 validity of the Applicant's claims concerning the impact of the proposed Astoria
13 Energy facility on wholesale spot electricity prices

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

15 A. Yes.

David A Schlissel

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Synapse Energy Economics
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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.

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

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.

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.

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.

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.

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.

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.

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

Room to Breathe: Why the Massachusetts Department of Environmental Protection's Proposed Air Regulations Are Compatible with Electric System Reliability, a Synapse Report for the MASSPIRG Education Fund and the Clean Water Fund, March 22, 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.

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, NRRI 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.

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.

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)

**Proposed New York State
Major Electric Generating Facilities**

Facility	Size	Location	Estimated Earliest In-Service Date	Status of Article X Application
Athens Generating Plant	1,000 MW	Green County	3 rd Quarter 2003	Certificate issued
Bethlehem Energy Center	750 MW Total (350 net increase)	Albany County	3 rd Quarter 2004	Application has not yet been determined to be in compliance with Article X requirements
Bowline Unit 3	750 MW	Rockland County	2 nd Quarter 204	Hearings are underway
Heritage	800 MW	Oswego County	1 st Quarter 2004	Certificate issued
Ramapo Energy Project	1,100 MW	Rockland County	2 nd Quarter 2004	Hearings are underway
Torne Valley Station	827 MW	Rockland County	None listed	Application has not yet been determined to be in compliance with Article X requirements
Repowered East River Plant	360 MW (160 net increase)	Lower New York County	4 th Quarter 2002	Hearings have been completed and briefs filed although some issues are on appeal to the Siting Board
KeySpan Ravenswood Cogeneration Project	250 MW	Queens County	2003	Settlement negotiations underway
NYP&A Astoria Project	500 MW	Queens County	2004	Hearings underway
Sunset Energy Fleet	520 MW	Brooklyn	None listed	Application has not yet been determined to be in compliance with Article X requirements