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NEW YORK STATE BOARD ON ELECTRIC  
GENERATION SITING AND THE ENVIRONMENT

IN THE MATTER

of the  
Application of New York Power Authority for a certificate  
of Environmental Compatibility and Public Need to  
Construct and Operate a 500 Megawatt Combined Cycle,  
Combustion Turbine Electric Generating Facility  
in its Existing Charles Poletti Power Project  
in Astoria, Borough of Queens.

Case 99-F-1627

**Surrebuttal Testimony of  
David A. Schlissel**

**On behalf of  
The Coalition Helping to Organize a Kleaner Environment**

**September 12, 2001**

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

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

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

A. I am testifying on behalf of the Coalition Helping to Organize a Kleaner Environment.

**Q. Have you previously filed testimony in this proceeding?**

A. Yes. I filed Direct Testimony on August 14, 2001.

**Q. What is the purpose of this surrebuttal testimony?**

A. The purpose of this testimony is to respond to the rebuttal testimony of NYPA witness Gary Jordan that was filed on August 31, 2001.

**Q. Have you had an opportunity to fully evaluate Mr. Jordan's MAPS analyses?**

A. No. We have had on a few days to examine the MAPS related materials that NYPA provided. Therefore, we have not been able to review in detail the input data files for Mr. Jordan's analysis to determine whether he has made any changes other than those he discusses in his testimony that bias the results in favor of the proposed NYPA Astoria Project.

**Q. What are your overall findings concerning the MAPS analyses discussed by NYPA witness Jordan in his rebuttal testimony in this proceeding?**

A. My overall conclusions concerning Mr. Jordan's rebuttal MAPS analyses are as follows:

- 1           1.     Mr. Jordan’s lowering of the heat rate for the proposed NYPA Astoria  
2                     Project to a figure below the heat rate that the Applicant expects to  
3                     achieve at the facility is unreasonable and biases his MAPS analyses in  
4                     favor of the proposed unit. Instead of artificially reducing the NYPA  
5                     Astoria Project’s heat rate, Mr. Jordan could and should have examined  
6                     the plant specific data that is available in other Article X Applications. For  
7                     example, SCS Astoria’s response to Information Request No. DPS-14 in  
8                     Case 99-F-1191 listed projected heat rates for seven of the new units  
9                     included in Mr. Jordan’s MAPS.
  
- 10           2.     It is unreasonable to expect that the NYPA Astoria Project would be  
11                     dispatched ahead of, or even at the same time as, some of the other new  
12                     combined cycle units in New York City and New York State. For  
13                     example, cooling system design differences should lead to lower heat rates  
14                     and, consequently, a lower place in the dispatch order, for the Heritage,  
15                     Bethlehem, and Orion facilities.
  
- 16           3.     In each of the three rebuttal MAPS scenarios prepared by Mr. Jordan the  
17                     proposed NYPA Astoria Project would displace significant amounts of  
18                     electricity that would have otherwise been generated at the recently  
19                     licensed East River facility. This is unreasonable. East River will generate  
20                     electricity whenever it produces steam. As a result, it will have a marginal  
21                     cost of zero for most, if not all, hours.<sup>1</sup> Therefore, it is reasonable to  
22                     expect that it will be dispatched ahead of the NYPA Astoria Project.
  
- 23           4.     The most realistic scenario examined by Mr. Jordan is the scenario which  
24                     includes the repowered Orion Astoria and ANP Brookhaven facilities but  
25                     not the proposed Sunset and Torne Valley plants. However, Mr. Jordan  
26                     only includes 900 MW of the 1,842 MW from the repowered Orion  
27                     Astoria facility. By ignoring the remaining 942 MW of new capacity that  
28                     can be expected from the repowering of Orion’s Astoria facility, Mr.

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<sup>1</sup> Recommended Decision in Case 99-F-1314, at page 17.

1 Jordan dramatically overstates the levels of environmental benefits that  
2 can be attributed to the NYPA Astoria Project.

3 5. For these reasons, and the specific scenario-related findings that I will  
4 discuss below, Mr. Jordan's revised MAPS analyses do not show that the  
5 proposed NYPA Astoria Project will produce environmental benefits by  
6 displacing the electricity that would otherwise be produced at older, less  
7 efficient generating units. It is reasonable to expect that the environmental  
8 benefits that Mr. Jordan's rebuttal MAPS analyses attribute to the NYPA  
9 Astoria Project will be achieved even if the proposed facility is not built.

10 **Q. What are your findings concerning Mr. Jordan's first MAPS analysis in**  
11 **which he reduced the heat rate for the proposed NYPA Astoria facility?**

12 A. Our review of the MAPS output files for this scenario reveals that:

- 13 1. There will be no generation from the existing Poletti plant even if the  
14 proposed NYPA Astoria facility is not built.
- 15 2. In this scenario, Mr. Jordan projects that the proposed NYPA Astoria  
16 Project would displace 1,246 GWH of electricity from other generating  
17 units. Approximately 701 GWH, or 70 percent, of this electricity would be  
18 from generating units in or near New York City. However, 470 of these  
19 GWH, or approximately 67%, represent electricity that would have been  
20 generated at four of the other new combined cycle plants.<sup>2</sup> The  
21 displacement of these 470 GWH therefore cannot be expected to produce  
22 any meaningful environmental benefits.

23 Another 98 GWH of the electricity that Mr. Jordan's MAPS analysis show  
24 would be displaced by the proposed NYPA Astoria facility in this scenario  
25 would have been generated at Astoria 5 and Ravenswood 1. As I  
26 discussed at page 10, line 8, through page 11, line 12 of my Direct

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<sup>2</sup> SCS Astoria (194 GWH), East River (151 GWH), Ravenswood CC (101) GWH, and Torne Valley (24 GWH).

1 Testimony, it is likely that any reductions in NOx emissions from these  
2 displacements will be achieved even if the proposed NYPA Astoria  
3 facility is not built due to the Ravenswood Air Quality Improvement  
4 Program initiated by KeySpan and Orion's planned repowering of its  
5 Astoria facility.

6 Finally, the output data files for this scenario show that several of the other  
7 new in-city combined cycle units would operate at low capacity factors  
8 even if the proposed NYPA Astoria facility were not built. For example,  
9 Mr. Jordan's MAPS results for this scenario project that the new  
10 Ravenswood Combined Cycle facility would operate at a 21 percent  
11 capacity facility factor even if the NYPA Astoria Project were not built.  
12 Clearly, the output from this plant and the other new in-City units could be  
13 increased if the proposed NYPA Astoria facility were not built in order to  
14 achieve some or all of the in-City environmental benefits that Mr. Jordan  
15 claims for the NYPA plant.

- 16 3. Approximately 30 percent of the approximately 545 GWH of electricity  
17 from upstate facilities that Mr. Jordan's analysis says would be displaced  
18 by the NYPA Astoria Project would have been generated at new upstate  
19 combined cycle units. As I have mentioned above, it is not reasonable to  
20 expect that the displacement of generation from these new units, including  
21 Bowline 3 and the Bethlehem Energy Center, will produce meaningful  
22 environmental benefits.
- 23 4. Mr. Jordan's MAPS analysis for this scenario projects that the operation of  
24 the proposed NYPA Astoria Project would reduce total SO<sub>2</sub> emissions by  
25 1825 tons per year. However, only 5 tons per year of these SO<sub>2</sub> emission  
26 reductions would occur in New York City.
- 27 5. Mr. Jordan's MAPS analysis for this scenario also projects that the  
28 operation of the proposed NYPA Astoria facility would reduce total NOx  
29 emissions by approximately 744 tons. However, only 39 percent, or 288  
30 tons, of these reductions would occur in New York City. The remainder

1 would occur in upstate New York. Moreover, these in-City NOx emissions  
2 reductions would occur as a result of the displacement of electricity that  
3 would otherwise be produced at the Astoria 5, Ravenswood 1 and 2,  
4 ASTGT 24 and RAVGT23 units. As I have explained in detail in my  
5 Direct Testimony, it is reasonable to expect that the emissions from these  
6 units would be significantly reduced if not eliminated even if the proposed  
7 NYPA Astoria Project were not built.<sup>3</sup>

8 **Q. What are your conclusions concerning the second MAPS analysis discussed**  
9 **by Mr. Jordan in which he lowered the heat rate for the NYPA Astoria**  
10 **Project and artificially determined that the unit would be dispatched first?**

11 A. Our review of the MAPS output data files for this scenario reveals that:

- 12 1. There would be no generation at the existing Poletti plant in this scenario  
13 even if the proposed NYPA Astoria Project were not built.
- 14 2. Mr. Jordan's MAPS analysis for this scenario projects that the NYPA  
15 Astoria Project would displace 4,108 GWH that would otherwise be  
16 produced at other generating facilities. Approximately, 2925 GWH, or 71  
17 percent, of these GWH would have been generated at other facilities in  
18 New York City. The remainder would have been generated outside the  
19 City.

20 However, 2,623 GWH, or 90 percent, of the electricity that would be  
21 displaced from plants in ConEd's service area would have been generated  
22 at five of the new combined cycle facilities, i.e., SCS Astoria, East River,  
23 Ravenswood, Sunset, and Torne Valley. There is no reason to expect that  
24 the displacement of the output from these facilities would result in any  
25 meaningful environmental benefits.

26 Moreover, another 5 percent of the electricity that Mr. Jordan's MAPS  
27 analysis projects would be displaced by the NYPA Astoria Project in this

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<sup>3</sup> Direct Testimony of David A. Schlissel, at page 13, line 9, to page 14, line 20.

1 scenario would have been produced at the Astoria 5 and Ravenswood 1  
2 and 2. As I have explained in my Direct Testimony and earlier in this  
3 Surrebuttal Testimony, it is reasonable to expect that any reductions in  
4 NOx emissions from these displacements would be achieved even if the  
5 proposed NYPA Astoria facility were not built due to the Ravenswood Air  
6 Quality Improvement Program initiated by KeySpan and Orion's planned  
7 repowering of its Astoria facility.

8 3. 750 GWH of the 1,183 GWH, or 63 percent, of the electricity from upstate  
9 plants that Mr. Jordan's projects would be displaced by the NYPA Astoria  
10 Project in this scenario would have been generated at the new Bethlehem  
11 Energy Center and Bowline 3 facilities. Clearly, the displacement of the  
12 electricity from these new and efficient plants would not produce any  
13 meaningful environmental benefits.

14 4. Only 323 tons, or 44 percent, of the statewide reductions in NOx  
15 emissions that Mr. Jordan's attributes to the NYPA Astoria Project would  
16 occur in New York City. The remaining reductions would occur mainly in  
17 upstate New York. Almost none of the statewide reductions in SO<sub>2</sub>  
18 emissions that are projected for the NYPA Astoria Project in this scenario  
19 would be realized in New York City.

20 5. As in the other MAPS scenarios, the in-City reductions in NOx emissions  
21 that Mr. Jordan attributes to the NYPA Astoria Project are, to a significant  
22 extent, due to the displacement of electricity that would otherwise be  
23 produced at the Astoria 5, ASTGT24 and RAVGT23 units. As I have  
24 explained earlier, it is reasonable to expect that even if the proposed  
25 NYPA Astoria Project is not built the output from these units will be  
26 displaced by generation from the other new and repowered in-City  
27 combined cycle units.

28 **Q. What are your findings regarding Mr. Jordan's last MAPS analysis**  
29 **prepared in which he examined a modified generation expansion plan?**

30 A. Our review of this scenario reveals:

- 1           1.     Mr. Jordan's modified generation expansion plan only includes 900 MW  
2                     of Orion's proposed repowering of its Astoria facility. The omission of the  
3                     remaining 942 MW of repowered Astoria capacity is significant and  
4                     causes Mr. Jordan's MAPS analysis to substantially overstate the  
5                     environmental benefits that can be expected from the NYPA Astoria  
6                     Project.
  
- 7           2.     Even without this additional 942 MW of capacity from the repowered  
8                     Orion Astoria facility, there would be no generation at NYPA's existing  
9                     Poletti plant in this scenario even if the proposed NYPA Astoria Project  
10                    were not built.
  
- 11          3.     Mr. Jordan's MAPS analysis for this scenario projects that the NYPA  
12                     Astoria Project would displace a total 2,355 GWH of electricity. 1721  
13                     GWH of this electricity, or 73 percent, would have been produced at  
14                     plants in ConEd's service area. However, 1,342 GWH, or 78 percent, of  
15                     this in-City displaced electricity would have been generated at the new  
16                     SCS Astoria, East River, Orion, and Ravenswood Combined Cycle units.<sup>4</sup>  
17                     Therefore, there would be no significant environmental benefits from this  
18                     displacement.
  
- 19          4.     Only 99 tons, or 14 percent, of the 715 tons of NOx emissions reductions  
20                     that Mr. Jordan's MAPS analysis attributes to the NYPA Astoria Project in  
21                     this scenario would be realized in or near New York City. The remaining  
22                     reductions would occur in upstate New York.

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<sup>4</sup>           According to the output data files Mr. Jordan's MAPS analysis, in this scenario the NYPA Astoria Project would displace the following amounts from each of these facilities: SCS Astoria (478 GWH), East River (240 GWH), Orion (547 GWH), and Ravenswood Combined Cycle (77 GWH).

1 Sixty-nine of these 99 tons of in-City NO<sub>x</sub> reductions would come from  
2 reduced generation at the Astoria 5, Ravenswood 1 and 2 and RAVGT23  
3 units. However, the NO<sub>x</sub> emissions at Astoria 5 will be reduced by about  
4 90 percent as a result of Orion's repowering of the unit. Similarly, NO<sub>x</sub>  
5 emissions at Ravenswood 1 and 2 will be reduced as a result of KeySpan's  
6 Air Quality Improvement Program. Moreover, it is reasonable to expect  
7 that the electricity from RAVGT 23 would be displaced by electricity  
8 from the new capacity, other than the NYPA Astoria Project, that will be  
9 built in New York City.

10 5. Mr. Jordan's MAPS analysis for this scenario projects very low capacity  
11 factors for the Orion (36 percent), Ravenswood Combined Cycle (38  
12 percent) and SCS Astoria (56 percent) facilities even if the NYPA Project  
13 is not built. Clearly the output from these plants could be increased in  
14 order to achieve some or all of the in-City NO<sub>x</sub> emissions reductions that  
15 Mr. Jordan attributes to the proposed NYPA Astoria Project. The same is  
16 true for the upstate NO<sub>x</sub> emissions reductions that Mr. Jordan attributes to  
17 the proposed NYPA facility.<sup>5</sup>

18 6. Only 22 tons of the 1,582 tons of SO<sub>2</sub> that Mr. Jordan's MAPS analysis  
19 attributes to the NYPA Astoria Project in this scenario would be realized  
20 in or near New York City.

21 7. This is probably the most realistic scenario except that it excludes the 942  
22 MW of repowered Orion capacity and, as a result, it significantly  
23 overstates the environmental benefits attributable to the NYPA Astoria  
24 Project.

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<sup>5</sup> According to the output files for Mr. Jordan's MAPS analysis for this scenario, the Bowline 3 and Bethlehem units would operate at only moderate capacity factors (57 percent and 68 percent, respectively) even if the NYPA Astoria Project were not built.

1 **Q. Do you have any comment on Mr. Jordan’s statement that “an**  
2 **environmental benefit is a benefit wherever it occurs”?**<sup>6</sup>

3 A. Yes. The residents of Northwest Queens already host one of the largest, if not the  
4 largest, concentrations of electric generating facilities in the nation and this  
5 burden will increase as a result of the KeySpan Ravenswood and SCS Astoria  
6 plants. Therefore, even without the NYPA Astoria Project the residents of  
7 Northwest Queens will bear an inordinate share of the burden from electric  
8 generating plants that produce environmental and economic benefits elsewhere in  
9 New York City and New York State. It would be unjust to require them to bear  
10 the additional burdens from a new facility that will not produce significant  
11 environmental benefits in their community.

12 In addition, as I have discussed in my Direct Testimony and in this Surrebuttal  
13 Testimony, there is significant evidence that many, if not all, of the upstate  
14 environmental benefits that Mr. Jordan attributes to the NYPA Astoria Project can  
15 be achieved by increasing the generation at the other new upstate plants that have  
16 already been licensed or that are currently undergoing Article X review. Or  
17 NYPA could propose a new generating facility sited in upstate New York.

18 **Q. Does this complete your surrebuttal testimony?**

19 A. Yes.

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<sup>6</sup> Testimony of Gary Jordan, page 8, lines 5-6.