

## ***Memorandum***

To: Riverkeeper, Inc., and Pace Law School Energy Project

From: David Schlissel

Date: May 7, 2002

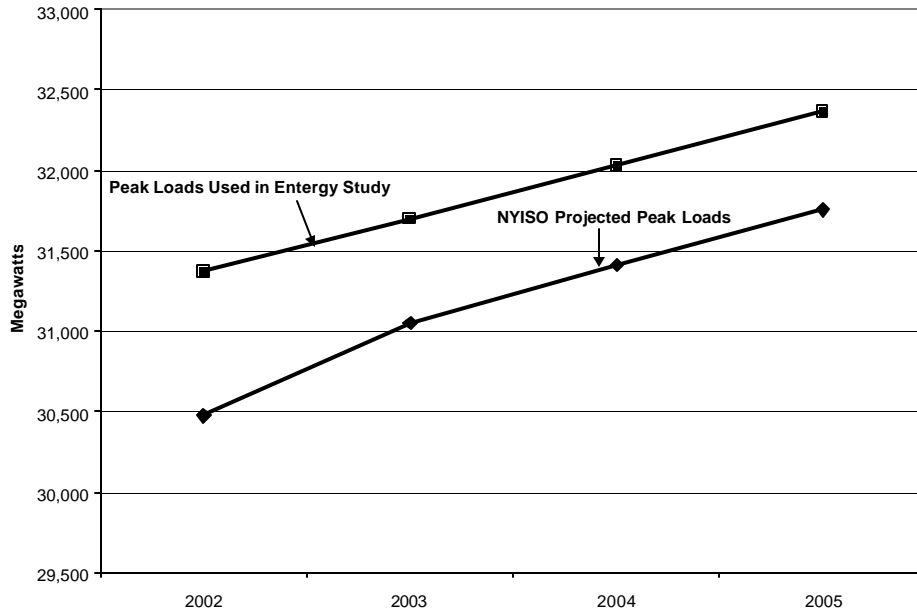
***Subject: Weaknesses in the Entergy Study of the Reliability Impacts of Closing Indian Point Units 2 and 3.***

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Entergy has just released a March 2002 study by NERA Consulting Economists on “Electricity System Impacts of Nuclear Shutdown Alternatives” (the “Entergy study”) which purports to examine the impact of closing Indian Point Units 2 and 3 on electric system reliability and costs. However, the Entergy study significantly overstates the adverse reliability effects of closing Indian Point because it inflates the statewide demand for electricity while understating the amount of capacity that would be available to serve that demand. The study’s cost-related conclusions are unreliable for the same reasons.

### **LOADS**

The following figure compares the peak loads assumed for the years 2002 through 2005 in the Entergy study with the peak loads for the same years projected by the New York Independent System Operator (“NYISO”) in its recent March 2002 report, “Power Alert II, New York’s Persisting Energy Crisis.” As you can see, the peak loads assumed in the Entergy study are significantly higher than the peak loads projected by the NYISO.



The following table presents these same peak demands.

Year	NYISO Projected Peak Demand <sup>1</sup>	Peak Demand Used in Entergy Study <sup>2</sup>
2002	30,475 MW	31,363 MW
2003	31,053 MW	31,710 MW
2004	31,408 MW	32,016 MW
2005	31,755 MW	32,295 MW

More specifically, the Entergy study ignores a number of important developments that are reflected in the 2002 NYISO peak demand forecasts: the loss of the World Trade Center load due to the events of September 11, 2001; the impact of the recent economic downturn; and the transfer of 435 MW of load from the New York Control Area to the Pennsylvania-New Jersey-Maryland system.<sup>3</sup>

The projected reserve margins presented in the Entergy study are calculated by dividing the amount of installed capacity forecast to be available in each year by the projected peak demand for that year. Therefore, by inflating projected peak demands, the Entergy

<sup>1</sup> Source – page 12 of the NYISO’s March 2002 report, “Power Alert II, New York’s Persisting Energy Crisis.”

<sup>2</sup> Source – Table A-6 on page A-7 of the Entergy study.

<sup>3</sup> Source – pages 12-14 of the NYISO’s March 2002 Report, “Power Alert II, New York’s Persisting Energy Crisis.”

study artificially reduces the forecast system reserve margins both with and without Indian Point Units 2 and 3.

## **AVAILABLE CAPACITY**

At the same time that the Entergy study overstates electric system demand, it understates by as much as 1,000 MW the amount of generating capacity that will be available to serve projected loads in New York State. By doing so, the Entergy study further reduces projected system reserve margins and increases the negative impact of closing Indian Point Units 2 and 3.

First, the Entergy study assumes that there would be 35,773 MW of installed capacity in New York State for the summer of 2002.<sup>4</sup> This is approximately 1,000 MW less than the 36,779 MW of capacity that the NYISO has projected would be available during the summer of 2002 in its recent “Locational Installed Capacity Requirements Study, Covering the New York Control Area for the 2002-2003 Capability Year.”<sup>5</sup> It appears that the difference is due in large part, at least, to the fact that the Entergy study does not reflect all of the new small units (i.e., less than 80 MW) that were installed during 2001 or that are expected to be installed during the first five or six months of 2002.

A December 20, 2001 analysis by the New York State Reliability Council, “NYCA Installed Capacity Requirement for the Period May 2002 through April 2003 – Final Report” similarly assumed that there will be 37,306 MW of installed capacity in New York State during the summer of 2002.<sup>6</sup> The New York State Reliability Council is an independent body whose principal mission is to establish reliability rules for use by the NYISO to maintain the integrity and reliability of the New York State Power System.

The amounts of Summer Installed Capacity assumed in the Entergy study for the years 2003 through 2005 also are unreasonably low because they are based on the 2002 capacity figure.<sup>7</sup>

In addition, the Entergy study assumes a number of new capacity additions would be made during the years 2002 through 2005. However, the study ignores the proposed Bethlehem Energy Center Repowering Project that has been approved by the New York State Board on Electric Generation Siting and the Environment. (the “Siting Board”) When completed in the 3<sup>rd</sup> quarter of 2004 the Bethlehem Energy Center will add 350 MW of new capacity (750 MW total). The addition of this facility would increase the year 2005 system reserve margins in the Entergy study both with and without Indian Point.

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<sup>4</sup> Source - Entergy Study, Table A-8, at page A-8.

<sup>5</sup> Source – Table 2 on page 6 of the NYISO’s March 14, 2002 Report, “Locational Installed Capacity Requirements Study, Covering the New York Control Area for the 2002-2003 Capability Year.”

<sup>6</sup> At page 16.

<sup>7</sup> The assumptions for the calculation of the projected reserve margins for the years 2003 through 2005 both with and without Indian Point are shown on Table C-2 on page C-3 of the Entergy study.

Finally, the Entergy study assumes that 165 MW of existing capacity would be retired in 2003 and another 559 MW of existing capacity would be retired in 2004. The 198 MW Waterside Plant in New York City will be retired in 2004 when the repowered East River facility is opened. However, it is not realistic to assume that any other plants would be retired if Indian Point were closed – in other words, other plant retirements could be delayed for a few years in order to maintain system reliability. Then, the units could be retired when projected new generating facilities are added to the system. By assuming that other plants would be retired in the years 2003 and 2004, whether or not Indian Point is closed, the Entergy study further starves the electric system of needed capacity and reduces projected system reserve margins.

## **PROJECTED RESERVE MARGINS**

The results of the Entergy study are incorrect because they depend on the use of these unreasonable assumptions concerning projected system demands and installed capacity. In particular, the projected reserve margins in the Entergy study both with and without Indian Point are too low and the study's estimates of the higher costs that would result from the closing of Indian Point are unreasonably high.

For example, the Entergy study claims that there would be a 14.5% reserve margin during the summer of 2002. This is based on the assumptions that there would be 35,773 MW of net installed capacity and a projected summer peak demand of 31,363 MW.<sup>8</sup>

If the NYISO's projections that there will be 36,779 MW of installed capacity and 30,475 MW of peak demand during the summer of 2002 are instead considered, the base case reserve margin with Indian Point would be 20.7 percent, not the 14.5 percent claimed by Entergy.<sup>9</sup>

The Entergy study similarly claims that the New York State electric system would have only an 8.4 percent reserve margin in 2002 if Indian Point Units 2 and 3 are closed.<sup>10</sup> If the NYISO's projections for the 2002 installed capacity and peak demands were used instead, the forecast reserve margin for the summer of 2002 without IP 2 and 3 would be 14.3 percent, not the 8.4 percent figure claimed by Entergy.

Adjusting the Entergy study to reflect the peak demands projected by NYISO and the fact that there will be 36,779 MW of capacity available by the summer of 2002, not the 35,773 MW assumed in the Entergy study, results in much higher projected reserve margins both with and without Indian Point Units 2 and 3. Note that the following figures reflect only those proposed capacity additions during the years 2003 through 2005 that are listed in Table A-7 on page A-8 of the Entergy study. Therefore, the additional 350 MW capacity that can be expected from the completion of the Bethlehem Energy Center Repowering Project is not included in the following tables:

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<sup>8</sup> Table C-2 on page C-3 of the Entergy study.

<sup>9</sup> Dividing the 36,779 MW of installed capacity by the 30,475 MW projected peak demand equals 1.207, which means there would be a 20.7 percent reserve margin.

<sup>10</sup> Table C-2 on page C-3 of the Entergy study.

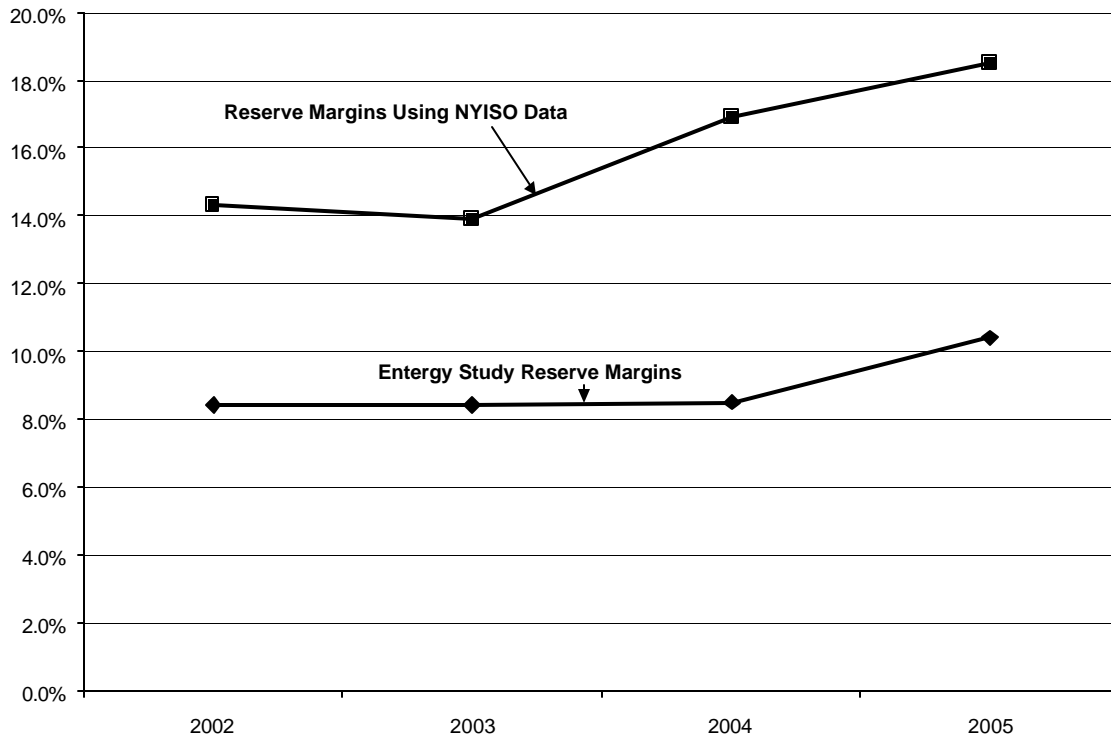
**New York Statewide Reserve Margins  
With Indian Point Units 2 and 3**

Year	Installed Capacity without Indian Point Units 2 and 3	Peak Demand	Reserve Margin without Indian Point Units 2 and 3
2002	36,779 MW	30,475 MW	20.7 percent
2003	37,319 MW	31,053 MW	20.2 percent
2004	38,659 MW	31,408 MW	23.1 percent
2005	39,571 MW	31,755 MW	24.6 percent

**New York Statewide Reserve Margins  
If Indian Point Units 2 and 3 Were Closed**

Year	Installed Capacity without Indian Point Units 2 and 3	Peak Demand	Reserve Margin without Indian Point Units 2 and 3
2002	34,844 MW	30,475 MW	14.3 percent
2003	35,384 MW	31,053 MW	13.9 percent
2004	36,724 MW	31,408 MW	16.9 percent
2005	37,636 MW	31,755 MW	18.5 percent

The following figure compares the system reserve margins that Entergy claims would exist in New York State if Indian Point were closed with the reserve margins calculated in the table above. As can be seen, using NYISO projected peak demands and installed capacity results in significantly higher projected reserve margins for each of the years 2002 through 2005.



## CONCLUSIONS

Entergy has biased the results of its study by assuming unreasonably high peak demands and by unreasonably reducing the amounts of capacity that would be available to serve those demands by (1) ignoring some existing generating capacity; (2) ignoring at least one new facility that has been approved by the New York State Siting Board; and (3) by assuming that some existing generating facilities would be retired.

## CAVEAT

The production simulation analyses used to produce the Entergy study depend on many more assumptions than just the projected peak loads and the amounts of installed generating capacity. Unfortunately, most of those assumptions are not discussed or even mentioned in the Entergy study. Without a detailed review of those assumptions and the study workpapers, it is not possible to determine whether Entergy has used any other unreasonable and unrealistic assumptions that have further biased the study against the closing of Indian Point Units 2 and 3.