Attachment IV

NERA
Economic Consulting

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UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

New York Independent System Operator, Inc. **Docket No. ER11-2224-00_**

AFFIDAVIT OF EUGENE T. MEEHAN

Mr. Eugene T. Meehan declares:

1. I have personal knowledge of the facts and opinions herein and if called to testify could and would testify competently hereto.

I. Purpose of this Affidavit

2. The purpose of my affidavit is to explain changes made to the National Economic Research Associates, Inc. ("NERA") demand curve model that was part of the NERA/S&L Report[1] (the "Original Model"), to arrive at the revised model provided to the

[1] Independent Study to Establish Parameters of the ICAP Demand Curve for the New York Independent System Operator, November Filing, Attachment 2 (Meehan Affidavit) Exhibit B at Appendix 4 p. 2.

NYISO in March 2011 and used by the NYISO in this compliance filing (the "Revised Model").

3. As described herein, the Revised Model can incorporate a uniform assumed Excess Capacity Level[2] and standard deviation of that level in calculating Demand Curve Revenue (which the model refers to as "Demand Revenue") for the entire thirty year modeling horizon. The Original Model did not apply an assumed Excess Capacity Level and associated standard deviation in years 1 through 3, *i.e.,* the period from May 2011 through April 2014. In the Revised Model, the assumed Excess Capacity Level and standard deviation applicable to Demand Revenue for years 1 through 3 are the same as that used for years 4 through 30.[3]

4. The model has also been expanded to include carrying charges and Energy and Ancillary Services revenues for a combined-cycle gas turbine generator ("CCGT") unit in NYC. This addition enables the user to develop the net cost of new entry ("net CONE") for such

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[2] Terms with initial capitalization not defined herein or in the compliance filing transmittal letter to which this Affidavit is made part of, have the meaning set forth in the NYISO's Market Administration and Control Area Services Tariff, and if not defined therein, then as defined in the NYISO's Open Access Transmission Tariff.

[3] The model horizon is an input to the model. In this affidavit, I use a modeling horizon, or economic life of 30 years, which I believe represents the longest horizon over which an investor would examine the economics and finances of a combustion turbine or combined cycle investment. Thirty years was also the value used in the NERA/S&L Report for the proxy peaking units. As noted in the NERA/S&L Report, and in Paragraph 15 of this affidavit with respect to the combined cycle unit, the actual physical life of the equipment may be longer. (See NERA/S&L Report at 70, which states "a new peaking unit will likely physically last thirty years or more").

a CCGT unit. Net CONE is the annual real levelized cost of the generating unit including a return on and of capital, operating and maintenance expenses, costs such as property taxes and insurance, less the net (of fuel and other variable costs) Energy and Ancillary Services revenues that are estimated to be earned by the generating unit. I have also been asked by the NYISO to develop the net CONE for a CCGT unit in NYC and I present that result in this affidavit.

II. Qualifications

5. I am a Senior Vice President with NERA and directed NERA's work for the NYISO in connection with the ICAP Demand Curve reset. A full statement of my qualifications is provided in the affidavit that I prepared and that was filed by the NYISO as Exhibit A to Attachment 2 in this docket on November 30, 2010.

III. Demand Curve Model Changes to Allow Consideration of an Excess Capacity Level in Years 1 through 3

6. The Original Model was structured so that a level of excess capacity and an assumed standard deviation around that level were modeled for years 4 through 30 for purposes of calculating capacity revenue from the Demand Curve. The Original Model then assumed that for the reset period, years 1 through 3, the system was in exact equilibrium for purposes of calculating the net CONE, or value of the Demand Curve at the target level, of Installed Capacity. The net CONE for the Demand Curve peaking plant is used to set the value of the ICAP Demand Curve (also referred to herein as the "Demand Curve") at

the minimum Installed Capacity requirement. Net CONE for the Demand Curve peaking plant is also referred to herein as "Demand at Reference" as it is the value of the Demand Curve at the reference point and is labeled in the NERA model as "Demand at Reference." The Original Model was designed using the "goal seek"[4] function so that the Demand at Reference would just provide for the required return on equity given the uncertainty in years 4 through 30 Capacity revenue levels from the Demand Curve as a result of the assumed Excess Capacity Level and standard deviation as well from other stochastic variables. Both the Original Model and the Revised Model are also structured so that the user specifies the Excess Capacity Level and standard deviation applicable to Energy and Ancillary Services revenues applicable to years 1 through 3 and to years 4 through 30.

7. The Original Model had no way to reflect an assumed Excess Capacity Level and standard deviation applicable to "Demand Revenue" in years 1 through 3. The Revised Model was created by structurally changing the Original Model so that the user can apply the same assumed Excess Capacity Level and standard deviation to years 1 through 3 Demand Revenue that the user specifies for Demand Revenue in years 4 through 30.

[4] This function solves for the level of one variable that will produce a desired result for another. Specifically, the Original Model solved for the level of net CONE that would provide for a zero supernormal profit. Supernormal profit is a return in excess of the costs of capital.

8. The change was implemented so that, mechanically, an Excess Capacity Level and uncertainty were explicitly modeled in years 2 and 3 at the user's option. Additionally at the user's option, the revenue shortfall resulting from not explicitly modeling an Excess Capacity Level in year 1 was then calculated. If the user specifies that excess capacity and uncertainty will apply to years 1 through 3, the year 1 supernormal profit is adjusted by this revenue shortfall. The effect is to model the impact on Demand Revenue of excess capacity and the standard deviation of uncertainty in years 1 to 3 in the same manner and using the same inputs as is done for years 4 through 30. The user has the option to reflect excess capacity and uncertainty in Demand Revenue for years 4 to 30 only, years 2 through 30, or years 1 through 30.

9. As noted above there were no changes to the model with respect to the level of excess capacity and uncertainty applicable to net Energy and Ancillary Services revenues. The Original Model had the ability to directly model these values for years 1 through 3 and years 4 through 30 using the same or different excess capacity and uncertainty assumptions for each period.

10. The modeling of an Excess Capacity Level and uncertainty in Demand Revenue in years 1 to 3 will have an impact on the net CONE or Demand at Reference calculated by the model. The size of the impact is affected by the assumed Excess Capacity Level, but will also be affected by other items including uncertainty in net Energy and Ancillary Services revenues. For example, for NYCA, if an excess capacity level of 1% is used, the impact

on the Demand at Reference of using the same level of excess for Demand Revenue for years 1 through 30 compared with modeling no excess in years 1 through 3 is an increase in Demand at Reference of slightly less than 3%. For Long Island, if an excess level of 4% is used, the same impact would be slightly higher than 8%.

IV. Expansion of the Model to Include Inputs for a CCGT Unit in NYC

11. Almost all of the parameters of the model are user inputs and the model can be used for various technologies. However, two input vectors, the vector for carrying charges and the vector for net energy revenues, are embedded in the model.

12. The carrying charge vector contains carrying charges for amortization periods between 10 and 35 years and enables the user to select an economic life and modeling horizon starting between 10 and 35 years.

13. S&L developed CCGT carrying charges for NYC, excluding property taxes and insurance, using the methodology and assumptions in the NERA/S&L Report and assumptions specific to a CCGT unit, such as the tax depreciation schedule. NERA input the vector of carrying charges into the Revised Model. The Commission accepted that carrying charge methodology in its January Order in this proceeding.[5] Property taxes and insurance are direct model inputs. The current NYC property tax rate is 4.69% and this rate can be directly input to the model.

[5] January Order at P 150.

14. NERA developed net energy revenues for a CCGT unit. The revenues were developed at several levels of Installed Capacity. NERA did so using the identical econometric model used to develop the net energy revenues for the Demand Curve peaking plants in the November Filing. The Commission accepted that model in the January Order.[6] This vector has been added to the Revised Model.

15. With these additions, the model can be used to develop net CONE for a CCGT unit in New York City.

16. The Revised Model has been provided to NYISO and an executable version will be posted on and accessible at the NYISO website.

V. NYISO's Use of the Revised Model and Development of the Net CONE for a CCGT Unit in NYC

17. The NYISO used the Revised Model to examine the Net CONE of the peaking plants for NYC, Long Island, and NYCA in accordance with the January Order. The NYISO's net CONE analysis using the Revised Model included addressing the January Order's finding with respect to NYC property taxes. Additionally, the NYISO ran the Revised Model so that a uniform Excess Capacity Level and uncertainty around that level was used for each year of the 30-year modeling horizon to evaluate both Demand Revenue and net energy revenues. The levels examined are those as described in the compliance filing transmittal letter as the "Excess Capacity Level." The Patton Affidavit supports the NYISO's use of

[6] January Order at P 136.

these Excess Capacity Levels. I have reviewed NYISO's use of the model and verified that NYISO has reflected the intended compliance inputs in the Revised Model and appropriately used the Revised Model to reflect its intent to have a single level of excess applicable to Demand Revenues and net energy revenues over each year of the modeling horizon.

18. The NYISO also requested that I use the Revised Model with the added input vectors to develop a net CONE estimate for a CCGT unit in New York City. I have done that using the NYC CCGT costs and operating characteristics presented in the affidavit of Mr. Ungate. I have used the 2.3% Excess Capacity Level, supported by Dr. Patton, as applicable to NYC, consistently over all years of the modeling horizon and for both Demand Revenues and net energy revenues. I have used an Ancillary Services revenue value of $ 7 per kW-year developed by NYISO based on the experience of existing CCGT units in NYC. The result is a NYC CCGT unit Net CONE of $ 150.87 per kW-year.

VI. Conclusion

19. In consideration of the foregoing, I confirm that the Original Model has been revised to allow Demand Revenues to be examined over all years of the planning horizon considering an Excess Capacity Level and uncertainty around that level and to accommodate the examination on the net CONE of a new CCGT unit in New York City. The NYISO has appropriately used the Revised Model to develop the revised net CONE for the peaking plants reflecting the requirements of the January Order. At NYISO's

request, I have used the model to develop a net CONE for a new CCGT unit in NYC and that net CONE is $ 150.87 per kW-year.

This concludes my affidavit.