

## Attachment I

Affidavit of Mr. Rana Mukerji  
Senior Vice President of Market Structures  
New York Independent System Operator, Inc.

**UNITED STATES OF AMERICA**  
**BEFORE THE**  
**FEDERAL ENERGY REGULATORY COMMISSION**

New York Independent System Operator, Inc.                    )                    Docket No. ER12-1653-000

**1. Qualifications and Purpose**

1. My name is Rana Mukerji . I am the Senior Vice President of Market Structures for the New York Independent System Operator, Inc. (“NYISO”). My business address is 10 Krey Boulevard, Rensselaer, New York 12144. I joined the NYISO in 2006. I am a Professional Engineer, registered in the State of New York.
2. As the NYISO’s Senior Vice President of Market Structures, I am responsible for overseeing Market Design, Product and Project Management, Strategic and Business Planning, Research and Development, and Market Training at the NYISO.
3. The Market Structures Department is responsible for designing and developing new market rules, including the proposal developed in response to Order No. 755.
4. I am submitting this affidavit in support of the Regulation Movement Multiplier and the Regulation Movement Bid Restriction being proposed by the NYISO in this proceeding.

**II. The Regulation Movement Multiplier**

4. The NYISO proposed in its April 30, 2012 Initial Compliance Filing in this proceeding to require each Regulation Service provider to submit a two-part Bid, a Regulation Capacity Bid (with a MW offer and a Bid price/MW) and a Regulation Movement Bid (a Bid Price/MW). The NYISO proposed to submit to its scheduling and dispatch software the MW of Regulation Capacity offered and a composite Bid Price calculated by summing, for each Supplier, the bid cost for Regulation Capacity and the product of the bid cost for Regulation Movement and the Regulation Movement Multiplier. The use of a Regulation Movement Multiplier in this fashion equips the scheduling and dispatch software with a better representation of the likely cost of each Supplier in providing both the Capacity and Movement components of Regulation Service, allowing a least cost comparison among individual offers.
5. The NYISO is proposing a Regulation Movement Multiplier of ten (10). This number was derived by NYISO staff under my direction and control. The value of ten is an

appropriate Regulation Movement Multiplier as it represents the historic ratio of the absolute value of Regulation Movement to Regulation Capacity over the last twenty-nine months.

6. To derive the Regulation Movement Multiplier, the NYISO analyzed historic data for the time period January 2010 through May 2012.<sup>1</sup> For each Regulation provider scheduled for Regulation Service during a given hour of this historic period, the NYISO calculated a Movement MW value for each 6-second interval during the hour, where Movement MW is defined as the absolute change in Energy or Demand Reduction<sup>2</sup> over a 6-second interval that a Regulation Service provider is instructed to deliver for the purpose of providing Regulation Service. Directions to a resource to provide Energy were not counted as Movement MWs. The Movement MWs were then summed across all Regulation Service providers for the given hour, and divided by the NYISO Regulation (Capacity) Requirement (in MWs) for that hour. The average of the Movement MWs-to-NYISO Regulation Requirement ratio for each hour of the historic period is 9.28. The average ratio for the time period 2011-2012 is 10.46. Based on historical performance, the NYISO is proposing to set the initial Regulation Movement Multiplier to 10.
7. As measured, the RMM either did not vary significantly, or did not have a predictable pattern of variation by: season, day of week, weekday versus weekend, on-peak versus off-peak, or hour of day. As a result, the NYISO is proposing to use a single RMM for all hours and will continue to monitor and evaluate this value for potential adjustments.
8. The NYISO is not proposing to establish individual Regulation Movement Multipliers for each potential Regulation Service provider or type of provider. The use of a uniform Regulation Movement Multiplier, which represents the average historical movement to capacity ratio for all Regulation Service providers, is appropriate as it ensures a consistent evaluation of all Regulation Service bid costs by the scheduling software. If the NYISO finds, as the market matures and as more new-technology Regulation Service providers enter the market, that varying the Regulation Movement Multiplier by provider or type of provider would be appropriate, then we may revise the methodology at a later time.

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<sup>1</sup> Because the data was unreliable, the NYISO excluded data for the days into which and out of which the NYISO transitioned into Daylight Savings times and data from August 22, 2010.

<sup>2</sup> The Tariff offers Demand Side resources the opportunity to participate in the Regulation market. However, during this period, we had no Demand Side Resources providing Regulation Service.

### **III. The Regulation Movement Bid Restriction**

9. The NYISO also proposed in its April 30, 2012 Initial Compliance Filing a Regulation Movement Bid Restriction to cap the size of Regulation Movement Bids to avoid unforeseen but potentially significant volatility in the newly designed Regulation Market. NYISO staff, under my direction and control, has developed a Regulation Bid Restriction of \$2.47.

10. The NYISO staff derived the temporary Regulation Movement Bid Restriction using historic data for the time period 2009 through 2011. For each day in the historic period, the Regulation settlement dollars paid to Regulation Service providers were fuel-indexed to a baseline futures price for natural gas. These adjusted daily settlement dollars, totaling approximately \$129.8 million, were then divided by the estimated number of Movement MWs over the time period (approximately 52.5 million MWs). This established the temporary Regulation Movement Bid Restriction of \$2.47/MW.


11. The historic settlement dollars used in the derivation of the bid restriction were fuel indexed in order to baseline them with natural gas prices and present a more accurate projection of future Regulation costs/MW. The NYISO sees a correlation between natural gas prices and prices for Regulation Service, since units which have natural gas as their fuel are predominantly the resources on the margin. Indexing the historic settlement dollars paid to Regulation Service providers with a baseline futures price for natural gas provides an indication of where regulation prices may go in the future.

12. If all Regulation providers were to bid, over the course of a year, \$0 for Regulation Capacity and \$2.47/MW for Regulation Movement, they would receive the same amount of annual revenue as they received historically based on historic movement values. Therefore, a bid restriction of \$2.47/MW ensures that Suppliers have an opportunity to recover sufficient revenue to cover the historic costs of providing Regulation Movement, while at the same time, protecting LSEs from an unjustified increase in Regulation Service costs while the new market product matures.

13. This concludes my affidavit.

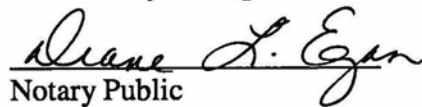
# ATTESTATION

I am the witness identified in the foregoing Affidavit of Rana Mukerji, P.E., dated August 17, 2012, (the "Affidavit"). I have read the Affidavit and am familiar with its contents. The facts set forth therein are true to the best of my knowledge, information and belief.

  
Rana Mukerji

August 17, 2012

Subscribed and sworn to before me  
this 17<sup>th</sup> day of August, 2012

  
Notary Public

My commission expires: March 21, 2013

DIANE L. EGAN  
Notary Public, State of New York  
Qualified in Schenectady County  
No. 4924890  
Commission Expires March 21, 20 13