141 FERC ¶ 61,105
FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D.C. 20426

Before Commissioners: Jon Wellinghoff, Chairman;
Philip D. Moeller, John R. Norris,
Cheryl A. LaFleur, and Tony T. Clark.

New York Independent System Operator, Inc. — Docket Nos. ER12-1653-000, ER12-1653-001

ORDER ON COMPLIANCE FILINGS

(Issued November 6, 2012)

1. On April 30, 2012, New York Independent System Operator, Inc. (NYISO) submitted a compliance filing and proposed tariff changes to establish a revised compensation methodology governing the provision of frequency regulation service, as required by Order No. 755[1] (April 30, 2012 Compliance Filing). On August 17, 2012, NYISO submitted a second compliance filing to satisfy the Commission's directives in Order No. 755 (August 17, 2012 Compliance Filing). NYISO states that, as required by Order No. 755, its compliance proposal establishes a two-part compensation methodology for frequency regulation service. NYISO requests that the tariff revisions it proposed in the April 30, 2012 Compliance Filing become effective October 27, 2012. NYISO requests that the tariff revisions proposed in the August 17, 2012 Compliance Filing become effective on a date between October 10, 2012 and November 14, 2012, with two weeks' written notice of the actual effective date to be provided to the Commission.[2]

2. We conditionally accept in part and reject in part NYISO's April 30, 2012 Compliance Filing and August 17, 2012 Compliance Filing, subject to filing and reporting conditions set forth below, to become effective on a date established by subsequent Commission order.

[1] *Frequency Regulation Compensation in the Organized Wholesale Power Markets*, Order No. 755, 76 FR 67,260 (Oct. 31, 2011), FERC Stats. & Regs. ¶ 31,324 (2011), *order denying reh'g*, Order No. 755-A, 138 FERC ¶ 61,123 (2012).

[2] NYISO states it will provide two weeks' written notice of the effective date to the Commission and the NYISO market.

I. Background

A. Frequency Regulation Service

3. Frequency regulation is an ancillary service, as required by the Commission's Orders No. 888 and 890, under the Commission's pro forma open access transmission tariff (*pro forma* OATT).[3] Frequency Regulation is relied upon by system operators to control both actual and anticipated frequency deviations. A frequency deviation is caused when the supply of dispatched generation, or demand response resources, as measured in Hertz, fails to equal the amount of electricity actually consumed (i.e., load, plus losses), at a given moment. When such a deviation exceeds an acceptable range, the system can be impaired, with major deviations causing generation and transmission equipment to disconnect from the grid.

B. Order No. 755

4. In Order No. 755, the Commission found that the resources relied upon by regional transmission operators (RTO) and independent system operators (ISO) to provide frequency regulation service differ in both their ramping ability and the accuracy with which these resources can respond to the system operator's dispatch signal.[4] Order No. 755 further found that current compensation policies fail to acknowledge these operational differences. Specifically, Order No. 755 found that existing RTO/ISO compensation methods result in rates that are unjust, unreasonable, and unduly discriminatory or preferential, given that resources are compensated at the same level even when providing different amounts of frequency regulation service.[5] Order No. 755 further found that paying a uniform clearing

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[3] *See Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Pubic Utilities and Recovery of Stranded Costs by Public Utilities and Transmitting Utilities*, Order No. 888, FERC Stats. & Regs. ¶ 31,036 at 31,705 (1996), *order on reh'g*, Order No. 888-A, FERC Stats. & Regs. ¶ 31,048, *order on reh'g*, Order No. 888-B, 81 FERC ¶ 61,248 (1997), *order on reh'g*, Order No. 888-C, 82 FERC ¶ 61,046 (1998), *aff'd in part and rev'd in part sub nom. Transmission Access Policy Study Group v. FERC*, 225 F.3d 667 (D.C. Cir. 2000), *aff'd sub nom. New York v. FERC*, 535 U.S. 1 (2002). *Preventing Undue Discrimination and Preference in Transmission Service*, Order No. 890, FERC Stats. & Regs. ¶ 31,241, at P 135, *order on reh'g*, Order No. 890-A, FERC Stats. & Regs. ¶ 31,261 (2007), *order on reh'g*, Order No. 890-B, 123 FERC ¶ 61,299 (2008), *order on reh'g*, Order No. 890-C, 126 FERC ¶ 61,228, *order on clarification*, Order No. 890-D, 129 FERC ¶ 61,126 (2009).

[4] Order No. 755, FERC Stats. & Regs. ¶ 31,324 at P 1.

[5] *Id.* P 64.

price that includes opportunity costs would send efficient price signals reflecting the true cost of providing frequency regulation service.[6]

5. To accomplish this objective, Order No. 755 required each RTO/ISO to use market-based mechanisms to select and compensate frequency regulation resources based on a two-part payment methodology. First, Order No. 755 required that a capacity payment be made to a resource to keep its capacity in reserve in the event that it is needed to provide real-time frequency regulation service.[7] Second, Order No. 755 required that performance payments be made that reflect the amount of work each resource performs in real-time in response to the system operator's dispatch signal.[8] Order No. 755, however, gave each RTO and ISO discretion in identifying the manner by which it would implement Order No. 755's required two-part payment methodology.[9]

6. Order No. 755 also acknowledged that the market rule revisions required by Order No. 755 contemplate fundamental changes to the way RTOs and ISOs procure and compensate frequency regulation services and that these rule changes may render existing RTO and ISO market power rules insufficient for purposes of addressing market power concerns.[10] Accordingly, Order No. 755 required each RTO/ISO to submit revised market power mitigation provisions, as appropriate to their redesigned frequency regulation markets, or explain how their current mitigation methods are sufficient to address market power concerns.

C. <u>NYISO's Existing Tariff Rules</u>

7. Under current NYISO tariff rules, regulation service resources must recover all of their related costs via one bid.[11] NYISO relies on bid-based reference prices to evaluate the competitive conduct of its ancillary services suppliers.[12]

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[6] *Id*. P 99

[7] *Id.* P 198.

[8] *Id.* P 199.

[9] *Id.* P 185.

[10] *Id.* P 136.

[11] *See generally* Market Administration and Control Area Services Tariff (Services Tariff), §§ 4.2 (Day-Ahead Markets and Schedules), 15.3 (Rate Schedule 3 - Payments for Regulation Service).

II. NYISO's Compliance Proposals

8. Under NYISO's proposal, regulation service suppliers bidding to provide regulation service will be required to submit two-part bids in both the day-ahead and real-time markets. They will submit a Regulation Capacity bid indicating the MW and price (in $/MW), and a Regulation Movement bid indicating the price for each MW of "Regulation Movement"[13] (in $/MW). Each supplier will also be required to provide NYISO with two response rates for use in scheduling and dispatching its resource: (1) the Regulation Capacity Response Rate,[14] and (2) the Regulation Movement Response Rate.[15]

9. In order to estimate the cost of clearing, committing, and dispatching a unit for a given hour, NYISO proposes to add the Regulation Capacity bid ($/MW) to the product of

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[12] *See generally* Services Tariff, § 23.3 (Criteria for Imposing Mitigation Measures).

[13] NYISO states that it is proposing a new term "Regulation Movement" to describe the quantity of frequency regulation service provided by a resource when it follows its dispatch signal. It states that the Commission in Order No. 755 referred to this service as "performance." NYISO April 30, 2012 Compliance Filing at n.3 (citing Order No. 755, FERC Stats. & Regs. ¶ 31,324 at PP 3, 128, & 133).

[14] Under NYISO's proposal, the Regulation Capacity Response Rate is the regulation service a resource is capable of providing over five minutes and is the same parameter that all regulation service bidders provide currently. Proposed Services Tariff, § 2.18 (Definitions - R).

[15] Under NYISO's proposal, the Regulation Movement Response Rate is the Regulation Movement a resource can deliver in six (6) seconds. This value must be no lower than the six-second equivalent of the Supplier's Regulation Capacity Response Rate but can be greater. Proposed Services Tariff, § 2.18 (Definitions - R). According to NYISO's Ancillary Services Manual, NYISO's Automatic Generation Control (AGC) function calculates an area control error (ACE) and allocates the necessary movement to correct this error to regulation service providers "proportionally based on the amount of Regulation Movement MWs they are able to provide in the next six seconds using their Regulation Movement Response Rates," and other parameters. Thus, if two resources are available to provide regulation service, Resource A having 10 MW available and Resource B having 20 MW available, and the system operator needs 12 MW of movement to correct the error, Resource A would be directed to move 4 MW and Resource B would be directed to move 8 MW. *See* NYISO, Ancillary Services Manual, section 4.3.4 (October 2012), *available at* http://www.nyiso.com/public/webdocs/documents/manuals/operations/ancserv.pdf.

the Regulation Movement bid ($/MW) and a "Regulation Movement Multiplier" (RMM).[16] This composite bid will then be used to choose the least-cost set of resources necessary to meet NYISO's regulation needs. NYISO states that the use of the RMM is necessary to transform two bids with disparate units of measurement into one composite bid that can be analyzed by the market solution software.[17] The RMM is used only in NYISO's market-clearing process, by which it commits units to be on stand-by to provide regulation service during a given dispatch hour. The RMM is not used in settlement or in the real-time dispatch of resources via AGC.[18]

10. In its August 17, 2012 Compliance Filing, NYISO proposes a RMM value of ten (10), based on a detailed review of the six-second movement historically required of New York's regulation service providers.[19] NYISO states that it is proposing a single RMM value for all hours, because, throughout the historical period it studied, the RMM either did not vary significantly or did not have a predictable pattern, by season, by day of week, by weekday versus weekend, by on-peak versus off-peak, or by hour of the day. NYISO

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[16] NYISO states that the RMM is to be used in scheduling software only; it states that it is not to be used in settlements and impacts price only to the extent the marginal resource is a function of its summed bids versus all other bid-in Regulation supply. NYISO April 30, 2012 Compliance Filing at 5 n.15.

[17] *Id.* at 5.

[18] Resources are dispatched to provide regulation movement in real-time via AGC based on system needs and the physical abilities and characteristics of the already-committed regulation resources, incorporating the resources' response rates. *See* NYISO, Ancillary Services Manual, section 4.3.4 (October 2012).

[19] NYISO August 17, 2012 Compliance Filing. Specifically, NYISO documented the absolute number of MW its regulation service suppliers have provided in response to NYISO's regulation dispatch over the most recent 29-month period from January 2010 to May 2012. Also for this period, NYISO calculated, for each six-second interval during a given hour, the absolute change in energy or demand reduction that NYISO instructed each regulation service provider to deliver. NYISO refers to this absolute change in energy or demand reduction as the "Movement MW" value. NYISO states it calculated a Movement MW value for each regulation provider and notes that it did not count directions to a resource to provide energy as Movement MWs. NYISO states it then summed the Movement MWs across all regulation service providers for a given hour and divided the sum by the NYISO regulation requirement (in MWs) for that hour. NYISO states the average of the Movement MWs-to-NYISO regulation requirement ratio for each hour of the 29-month historic period is 9.28 and the average ratio for the time period 2011-2012 is 10.46.

asserts that a uniform RMM for all regulation service suppliers will install a level evaluation method for the new two-part regulation service bid. However, NYISO notes that, as NYISO gains experience with the new design and as more new-technology regulation service providers enter the market, NYISO may find it appropriate to propose a different RMM methodology.

11. NYISO states that the use of the RMM is appropriate in computing a composite bid, because it will better reflect each supplier's likely cost in the scheduling and pricing solution. NYISO also states that a selection of appropriate regulation service suppliers depends on an appropriately set RMM. Therefore, NYISO proposes tariff language that would allow it to immediately adjust the RMM to a temporary value, should NYISO experience operational or reliability problems that require an immediate adjustment to the RMM. Specifically, NYISO states, the proposed tariff language establishes the criteria NYISO would use in evaluating whether a revision is necessary, namely whether the revised RMM is necessary to avoid recurring operator intervention outside normal market scheduling procedures. NYISO's proposed tariff language also provides that NYISO shall post a notice of the temporary adjustment as soon as reasonably possible and shall report on the reasons for the change at the next meeting of NYISO's Business Issues Committee.[20] NYISO also states that it will file a revised RMM with the Commission, if, after investigation, NYISO decides a revision is needed for a ninety (90) day period or longer to avoid future operational or reliability problems otherwise requiring recurring operator intervention outside normal market scheduling procedures.

12. NYISO states that the scheduling and pricing software for both the day-ahead (SCUC)[21] and real-time (RTC/RTD) markets[22] will schedule regulation service providers and establish market-based prices for Regulation Capacity. RTD will establish real-time market-based prices for Regulation Movement. The market price for Regulation Capacity will be determined, both day-ahead and in real-time, by subtracting the product of the marginal unit's Regulation Movement bid and the RMM from the shadow price for NYISO's regulation service constraint. The shadow price (namely, the cost to procure one more MW of regulation capacity), includes the cost of capacity, movement, and the opportunity cost of the marginal regulation resource, and NYISO states that it will continue to include the lost opportunity cost of the marginal resource. NYISO proposes to settle the

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[20] *See* proposed Services Tariff, § 2.18 (Definitions - R).

[21] SCUC is the day-ahead security constrained unit commitment software. Services Tariff, § 4.2.3 (Day-Ahead Markets and Schedules, Security Constrained Unit Commitment).

[22] RTC is the Real-Time Commitment software; and RTD is the Real-Time Dispatch software. Services Tariff, § 2.18 (Definitions - R).

Regulation Capacity scheduled for the day-ahead market at the day-ahead Regulation Capacity Market Price and the Regulation Capacity schedule in real-time at the real-time Regulation Capacity Market Price. Each resource cleared in the day-ahead market will be compensated equal to the product of its cleared capacity and the day-ahead Regulation Capacity Market Price. NYISO also proposes to balance any deviations in real-time at the real-time Regulation Capacity Market Price.

13. The price of Regulation Movement, namely, the Regulation Movement Market Price, will be determined, in real-time only,[23] as the Regulation Movement bid of the marginal resource. All resources cleared and committed in both the day-ahead and real-time markets will be compensated for their real-time movement based on the Regulation Movement Market Price. NYISO proposes to settle real-time Regulation Movement as the product of: (1) the Regulation Movement Market Price, (2) the Regulation Movement instructed by the NYISO for each resource in each five-minute interval, and (3) the resource's performance factor in that interval.

14. The regulation performance factor reflects the accuracy of the actual Regulation Movement provided by the resource. NYISO proposes to apply its current performance factor to Regulation Movement settlements.[24] NYISO also proposes to use the performance factor in calculating a new regulation service performance charge to adjust day-ahead and real-time Regulation Capacity settlements.[25] The performance charge will align the real-time regulation services settlement with the amount of regulation service actually provided and avoid a settlement whereby a supplier that fails to provide all or some portion of the NYISO-instructed Regulation Movement in real-time would otherwise retain, without reduction, its day-ahead Regulation Capacity revenue. Applied in this way, NYISO states, the performance charge will account for the accuracy of the provider-supplied Regulation Movement in each provider's real-time Regulation Capacity settlement.

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[23] NYISO states that it will not calculate a day-ahead Regulation Movement Market Price as there is no Regulation Movement scheduled or provided day-ahead.

[24] NYISO states that the current performance factor formula, adjusted to reflect the new terminology, measures the ratio of provided movement to instructed Regulation Movement. It will be applied to Regulation Movement settlements to ensure a Supplier is not compensated for Regulation Movement that, while instructed, was not delivered. *See* proposed Services Tariff, § 15.3.5.5 (Payments and Performance-Based Adjustments to Payments for Regulation Service Providers).

[25] *See* proposed Services Tariff, § 15.3.5.5.2 (Performance-Based Charge to Suppliers of Regulation Service).

15. Regulation service providers whose daily energy and ancillary service market revenues do not cover the cost of their market bids, including their regulation service bids, will be entitled to a Bid Production Cost Guarantee (BPCG) calculated in the same manner as the BPCG is calculated for energy and operating reserve bids.

16. NYISO proposes market power mitigation measures that apply the same thresholds for identifying economic withholding as currently apply to regulation service bids to Regulation Capacity bids. Specifically, an increase in a Regulation Capacity bid of 300 percent or $50, whichever is lower, would indicate potential economic withholding of Regulation Capacity. NYISO proposes a new mitigation threshold for Regulation Movement bid increases of 300 percent from reference levels.[26]

17. NYISO states that at market start, it will not have the necessary information to employ the mitigation tools it traditionally uses to Regulation Movement bids. In particular, it will not have the reference bids for Regulation Movement bids because these have not been used before.

18. NYISO proposes a temporary "Bid Restriction for Regulation Movement to avoid unforeseen but potentially significant volatility in the newly designed Regulation Market."[27] In its August 17, 2012 Compliance Filing, NYISO proposes to set the temporary Bid Restriction value at $2.47, based on an analysis of the six-second responses of NYISO's regulation service over the last several years.[28] NYISO states it has set this temporary Bid Restriction at the quotient of the average annual fuel-adjusted regulation service revenue historically paid to regulation service providers, divided by the amount of Regulation Movement typically realized based on historical experience.

19. NYISO also states that the temporary Bid Restriction will allow NYISO a reasonable period of time to establish reference-levels for the Regulation Movement bid.[29] NYISO proposes that its Market Monitoring Unit (MMU) review the Bid Restriction at least annually. According to NYISO's proposed tariff revisions, this review would include an evaluation of whether increasing or eliminating the Bid Restriction would provide incentives to raise offers for Regulation Movement substantially above levels that would be anticipated in an efficient market, and conversely, whether the Bid Restriction prevents

[26] *See* proposed Services Tariff, § 23.3.1.2.1.2.1 and 23.3.1.2.1.2.2.

[27] NYISO April 30, 2012 Compliance Filing at 7.

[28] NYISO August 17, 2012 Compliance Filing at 4.

[29] NYISO April 30, 2012 Compliance Filing at 8.

appropriate cost recovery.[30] The temporary Bid Restriction is discussed in more detail below.

III. Interventions and Comments

20. Notice of NYISO's April 30, 2012 Compliance Filing was published in the Federal Register, 77 Fed. Reg. 27,046 (2012) with comments due by May 21, 2012. Timely motions to intervene were filed by ENBALA Power Networks (USA), Inc., NRG Companies,[31] the Energy Storage Association d/b/a Electricity Storage Association (ESA) on behalf of its Advocacy Council,[32] the New York Transmission Owners (NYTOs),[33] and Beacon Power, LLC (Beacon Power). Beacon Power, the NYTOs, and ESA also included comments on the filing.

21. On June 5, 2012, the NYTOs submitted an answer in response to Beacon Power's comments and, on June 6, 2012, NYISO submitted an answer to the comments of Beacon Power and the NYTOs. On June 25, 2012, Beacon Power and ESA submitted answers to the answers of the NYTOs and NYISO.

22. Notice of NYISO's August 17, 2012 Compliance Filing was published in the Federal Register, 77 Fed. Reg. 51,986 (2012) with comments due by September 7, 2012. On September 6, 2012, the New York State Public Service Commission filed a notice of

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[30] *See* proposed Services Tariff, § 21.5.3 (Attachment F – Bid Restrictions, Applicability of Bid Restrictions).

[31] For purposes of this filing, the NRG Companies are NRG Power Marketing LLC, Arthur Kill Power LLC, Astoria Gas Turbine Power LLC, Dunkirk Power LLC, Huntley Power LLC, and Oswego Harbor Power LLC.

[32] The ESA's Advocacy Council engages in legislative, regulatory, and policy advocacy efforts on behalf of its members and the ESA. The Advocacy Council members include energy storage entities that use batteries, flywheels, and compressed air. Advocacy Council Members include: A123 Systems, Inc.(A 123), AES Energy Storage (AES); Altairnano; Aquion Energy; Beacon Power, LLC; FIAMM; NextEra Energy; Prudent Energy Corporation; S&C Electric Company; Saft America Inc.; SustainX; Temporal Power and Xtreme Power.

[33] The New York Transmission Owners consist of Central Hudson Gas & Electric Corporation; Consolidated Edison Company of New York, Inc.; Long Island Power Authority; New York Power Authority; New York State Electric & Gas Corporation; Niagara Mohawk Power Corporation d/b/a National Grid; Orange and Rockland Utilities, Inc.; and Rochester Gas & Electric Corporation.

intervention. On September 7, 2012, the NYTOs submitted a motion to intervene, and Beacon Power and ESA both filed comments and a protest. Also, on September 7, 2012, the NYISO MMU filed a motion to intervene and comments. On September 21, 2012, NYISO filed an answer to Beacon Power's comments and protest. On September 24, 2012, the NYTOs submitted an answer to Beacon Power's September 7, 2012 comments and protest.

A. Comments

23. Beacon Power and ESA generally support NYISO's filing but request two modifications to the NYISO revisions: (1) to modify the NYISO clearing process to set the Regulation Movement Market Price at the highest Regulation Movement bid of all cleared resources, and (2) to submit a Bid Restriction compliance filing that affirms the restriction is temporary and that ensures resources can adequately recover the costs to provide regulation service.[34]

24. Beacon Power and ESA support NYISO's proposal to apply the RMM equally, or uniformly, to all resources bidding to provide regulation service. Beacon Power and ESA assert that uniform application ensures that each resource's bid is compared on an "apples to apples" basis, by comparing the cost-per-unit of Regulation Movement and thus avoiding a situation where slower-ramping resources look artificially less expensive than faster-ramping resources. Beacon Power and ESA believe this will enable the selection of the least cost set of resources. For example, Beacon Power states "if NYISO were to use a resource specific RMM, it would always make slower-ramping resources look artificially less expensive than faster-ramping resources because the slower resources are providing a lower total quantity of movement than faster-ramping resources even if their cost-per unit is higher. Thus, Beacon Power supports NYISO's proposal to apply a uniform RMM to all resources since it allows Movement offers to be evaluated on a comparable cost per unit of Movement basis and thus enables the selection of the least cost set of resources."[35] In addition, Beacon Power and ESA support the proposed value of ten (10) for the RMM, as it is calculated from the historic average ratio of Movement MWs to Capacity MWs and represents the expected Movement MW from each MW of Regulation Capacity.

25. However, Beacon Power and ESA assert that NYISO's proposal to set the Regulation Movement Market Price used in settlement at the marginal resource's Regulation Movement bid could allow the Regulation Movement price used in settlement to lie below some resources' cost of providing Regulation Movement. Beacon Power explains that, if the marginal resource has a $0/MW Regulation Movement bid, then the Regulation Movement Market Price will be set to $0/MW so that resources would be paid $0/MW for their

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[34] Beacon Power May 21, 2012 Comments at 16.

[35] *Id.* at 9.

performance regardless of the amount or accuracy of the regulation service they provide.[36] As a result, Beacon Power and ESA assert, certain resources that provide more actual service to the grid could be paid less than other resources that provide a lower quantity of service. Beacon Power urges that NYISO borrow the PJM approach and use the highest Regulation Movement bid provided by any scheduled resource in the pricing interval.[37]

26. Beacon Power and ESA also oppose NYISO's proposed Bid Restriction of $2.47 per MW of Regulation Movement for the Regulation Movement bid prices, on the grounds that it will not permit adequate cost recovery in some hours and could thus result in unjust and unreasonable compensation. They assert that NYISO's proposed methodology, which uses historically low fuel prices and average regulation market prices, results in a Bid Restriction that is too low to ensure adequate cost recovery for new fast-ramping storage technologies, as well as for other traditional suppliers of regulation service. They also assert that the proposed $2.47 Bid Restriction is much lower than other ISO regulation movement bid caps.

27. Beacon Power and ESA state that, as Limited Energy Storage Resources, they must recover all of their costs with the revenue earned in the Regulation Market[38] and they should be allowed to recover substantially all of their costs from the Regulation Movement payment. They assert that setting the bid cap at the average cost to provide service in all hours inherently fails to provide bid flexibility to resources when their costs are above average, such as during peak periods or periods of high energy prices. Both parties provide examples of how NYISO's proposal may result in low maximum movement prices and recommend that the Commission direct NYISO to show how the Bid Restriction ensures that resources can adequately recover their costs to provide service.[39]

28. Beacon Power and ESA state that none of the options NYISO suggests for market participants to protect themselves from exposure to the risk of under recovery of their costs provides a sufficient solution to the challenge of unrecovered operating costs and none are acceptable substitutes for having a Bid Restriction that is fair and reasonable. They also assert that failure to enable new, fast-ramping technologies to recover all of their costs

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[36] *Id.* at 2.

[37] *Id.* at 11.

[38] NYISO's tariff defines new fast-ramping technologies such as fly-wheels and batteries as Limited Energy Storage Resources, which are only allowed to provide regulation service. Services Tariff, § 2.12 (Definitions - L).

[39] ESA May 21, 2012 Comments at 12-14; Beacon Power May 21, 2012 Comments at 14-16.

would create a deterrent to investment in these technologies and could have the unintended consequence of undermining competition in the market.

29. Beacon Power and ESA also express concern that, although NYISO describes the Bid Restriction in tariff section 21.5.3 as "temporary," the tariff section makes it clear that the Bid Restriction could be permanent. Specifically, they point out that section 21.5.3 provides that the Bid Restriction remains in effect until the MMU makes a recommendation otherwise.[40] They assert that, as there is no sunset provision for the Bid Restriction, it is, by definition, not temporary. Both parties argue that any need for the Bid Restriction will end after the several months required to develop Regulation Movement bid-based reference levels.

30. Beacon Power and ESA also argue the need for a Bid Restriction must be weighed against the potential negative effects it can have on investment and competition in the regulation market.[41] They believe bid restrictions create increased risk for investors because the restriction could result in resources being unable to adequately recover their costs. Therefore, Beacon Power and ESA request that the Commission direct NYISO to modify its proposal to allow the Bid Restriction to expire after one year unless at that time the MMU recommends otherwise.

31. Beacon Power and ESA also request the Commission to direct NYISO to revise, within 90 days after October 27, 2012,[42] the value of its Bid Restriction on Regulation Movement in order to ensure that resources can adequately recover their costs to provide regulation service. Beacon Power and ESA respectfully add that changing the value of the Bid Restriction on Regulation Movement should not delay implementation of NYISO's regulation market changes designed to comply with Order No. 755. Beacon Power and ESA otherwise recommend that the Commission approve NYISO's proposed two-part bid/two-part compensation method no later than October 27, 2012.

32. The NYTOs are concerned that the proposed revisions to section 21.5 of the Services Tariff do not indicate whether Bid Restrictions should be constant over the course of the year, or whether they should vary seasonally, reflecting seasonal variations in prices. The NYTOs believe that further analysis and discussion are needed to develop a method that takes into account how Bid Restrictions should vary due to seasonality and system load.[43]

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[40] Services Tariff, § 21.5.3 (Attachment F – Bid Restrictions, Applicability of Bid Restrictions).

[41] Beacon Power September 7, 2012 Protest at 9.

[42] *Id.* at 7.

[43] NYTOs May 21, 2012 Comments at 5.

The NYTOs request the Commission direct NYISO to evaluate potential future modifications to the proposed market design and report back to the Commission in one year regarding its evaluation.

33. The NYTOs state that they are concerned with NYISO's proposed market design because NYISO proposes to select regulation service suppliers based on a composite bid that uses the same RMM for all regulation service suppliers. The NYTOs assert that under the proposed market design, NYISO will consider the differing capabilities of faster- and slower-ramping resources in Regulation Movement settlement, but will not consider these differences in selecting regulation service suppliers in the Regulation Capacity markets. The NYTOs claim that NYISO had little choice given the timetable for implementation, and request that the Commission direct NYISO to report to the Commission in one year regarding its evaluation of further modifications to the proposed market design.

34. The MMU supports the specific levels that the NYISO proposed for the RMM and the temporary Bid Restriction on the Regulation Movement Bid price.[44] The MMU agrees with the NYISO that it is reasonable to assume an RMM of ten (10) until the NYISO can develop more precise predictions.

35. In addition, the MMU agrees that the Bid Restriction will help address the incentive concerns that might otherwise lead to inefficiently high regulation market costs.[45] The MMU asserts that resources that have substantial incremental deployment costs will be better able to reflect such costs than under the current market design. The MMU points out that, in the limited set of cases where a resource has incremental deployment costs that exceed the Bid Restriction, the resource will still have the ability to incorporate such expected costs into its Regulation Capacity bid price.

36. The MMU argues that the NYISO's proposal to set the Bid Restriction to a level based on historic Regulation Market costs is reasonable because the proposed level will be sufficiently high for most resources to: (1) reflect their incremental movement costs in their Regulation Movement bid prices and (2) avoid penalizing (and actually reward) regulation resources for providing faster response rates. Therefore, the MMU supports NYISO's use of the temporary Bid Restriction of $2.47 for the Regulation Movement bid price when the new regulation market design is initially implemented.[46] After the proposed market rules are implemented, the MMU will review regulation market outcomes, report its observations

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[44] Potomac Economics September 7, 2012 Comments at 2.

[45] *Id.* at 4.

[46] *Id.* at 6.

in future State of the Market reports, and recommend market change that should be considered before the temporary Bid Restriction should be lifted.

B. Answers

37. NYISO argues that Beacon Power's and ESA's proposed revisions are not required by Order No. 755 and asserts that its proposal to set Regulation Movement and Regulation Capacity prices fully complies with the Commission's Order No. 755 requirements.[47]

38. NYISO states that Beacon Power's and ESA's proposal that NYISO adopt PJM's method of pricing Regulation Movement fails to account for regional differences between the NYISO and PJM market designs and is inconsistent with NYISO's underlying market design. NYISO argues that regional differences justify its development of a solution that differs from PJM. In addition, NYISO asserts that using the maximum Regulation Movement bid, as Beacon Power and ESA recommend, could introduce potential gaming opportunities that would need to be explored to assess potential impacts on other aspects of the new regulation service market design before being implemented.[48] NYISO also states that its proposal is the only one it identified that could meet Order No. 755's timetable for implementation using existing scheduling and pricing logic, and that fundamental changes to the proposal would delay implementation.

39. NYISO states that Beacon Power's and ESA's proposal to sunset the Bid Restriction is unworkable.[49] NYISO argues that the suggestion would force the MMU to complete its analysis with only five (5) or six (6) months of data, and as a result would introduce market uncertainty as the one-year anniversary of the Bid Restriction approached.[50] NYISO states that the Bid Restriction is just and reasonable as a temporary measure, even without a sunset provision, and that arguments about the Bid Restriction's potential to prevent adequate cost recovery are premature.

40. Similarly, the NYTOs assert that it is both appropriate and necessary for NYISO to review whether market monitoring and mitigation procedures will provide sufficient protection, given that NYISO's proposed regulation market will not settle using market-clearing prices and market participants may have an incentive to submit bids that do not reflect their marginal cost. Therefore, the NYTOs request the Commission deny Beacon

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[47] NYISO June 6, 2012 Answer at 2.

[48] *Id.* at 7.

[49] *Id.* at 2.

[50] *Id.* at 10.

Power's request that the Commission direct NYISO to include an established expiration date for the temporary Bid Restriction in its tariff.[51]

41. NYISO states the Commission should reject Beacon Power's and ESA's assertion that NYISO's Regulation Movement Market Price coupled with BPCG violates Order No. 755's requirement that regulating resources be compensated for the quantity of service provided when they accurately follow dispatch signals. NYISO explains that its pricing proposal provides for market-based prices for both Regulation Capacity and Regulation Movement that send efficient price signals. NYISO states that its pricing proposal encourages resources to bid their true cost of service. NYISO further states that its proposal to extend the BPCG to include as-bid costs for Regulation Capacity and Regulation Movement appropriately guarantees just and reasonable compensation when a regulation service supplier's bids exceed the market-based price.

42. NYISO also responds that the NYTOs' request that the Commission direct NYISO to review the proposed market design and to file a report within one year regarding its review is unnecessary and disruptive of established processes that will accomplish the same goal. NYISO states that its existing stakeholder process is adequate and offers to report to the Commission the results of its expected review of Regulation Market improvements.[52]

43. In their June 5, 2012 answer, the NYTOs agree that Order No. 755 does not require a positive price for Regulation Movement and disagree with Beacon Power that NYISO should abandon its proposal to use the marginal resource's Regulation Movement bid to set the Regulation Movement Market Price. The NYTOs assert that a $0/MW market price would still comply with Order No. 755's requirement of a market-based price.

44. The NYTOs agree with Beacon Power that NYISO's proposal to use a single RMM for all resources when selecting regulation service suppliers is appropriate at this time. However, the NYTOs add that in the long term, NYISO will have the ability to make other market changes. For example, NYISO may be able to evaluate bids to provide Regulation Capacity separately from bids to provide Regulation Movement instead of merging them into a composite bid. In this case the NYTOs state it would be appropriate to use resource specific RMMs because doing so would properly recognize that when a fast-ramping resource is scheduled to provide a MW of Regulation Capacity, it is likely to provide more Regulation Movement than a slower-ramping resource. Therefore, its Regulation Movement bid should be assigned greater weight than the Regulation Movement bid of a slower-ramping resource.[53] The NYTOs state that this approach would not unfairly penalize fast-

[51] NYTOs September 24, 2012 Answer at 3

[52] NYISO June 6, 2012 Answer at 11.

[53] NYTOs June 5, 2012 Answer at 4.

ramping resources because it would recognize that fast-ramping resources are providing a disproportionately large amount of Regulation Movement.

45. The NYTOs also assert that Beacon Power's proposal to give the MMU unilateral power to determine whether the Bid Restriction remains in effect is inappropriate. The NYTOs state that NYISO's proposal, which does not give the MMU this unilateral power, is more consistent with the MMU's proper role of evaluating existing and proposed market rules and recommending changes. Therefore, the NYTOs request the Commission reject Beacon Power's request.

46. In their June 25, 2012 answers, Beacon Power and ESA assert that, contrary to NYISO's statement that its Regulation Movement pricing proposal encourages participants to accurately bid their costs, NYISO's proposal encourages some resources to submit inaccurate bids. Specifically, Beacon Power and ESA explain, any resource that is likely to provide less Regulation Movement than the average resource in the market will be incented to include its costs in its Regulation Capacity bid rather than its Regulation Movement bid.

47. Beacon Power and ESA also respond to NYISO's statement that to adopt PJM's approach to pricing Regulation Movement could introduce potential gaming opportunities. In particular, Beacon Power and ESA state that any potential for gaming would be more than adequately mitigated by the proposed Bid Restriction.[54]

48. In its September 21, 2012 answer to Beacon Power's September 7, 2012 comments and protest, NYISO asserts that Beacon Power understates the revenue each supplier will earn under NYISO's proposed market design. NYISO states that Beacon Power mischaracterizes the expected revenue regulation suppliers will be able to earn under NYISO's proposed market redesign. For example, NYISO notes that the proposed BPCG for day-ahead and real-time Regulation Capacity bids and real-time Regulation Movement bids ensure that the revenue any scheduled provider receives in a day will at least equal its regulation service as-bid costs for the day. Thus, NYISO asserts, it ensures full cost recovery for regulation-only suppliers through its BPCG. NYISO also notes that there is no reason to believe regulation suppliers were bidding less than their costs during the 2009-2011 historical study period, and that, even with a Bid Restriction, suppliers can expect to recover all of the costs they bid historically.

49. In response to Beacon Power's and ESA's protest of the NYISO's proposed $2.47 Bid Restriction value, NYISO asserts that Beacon Power inaccurately characterizes the manner in which the Bid Restriction was calculated. NYISO argues the protest is based on mathematical errors and incomplete analysis. NYISO reiterates that the $2.47 value is the average revenue earned by a regulation service supplier in the NYISO market from 2009 to

[54] Beacon Power June 25, 2012 Answer at 8.

2011 for each MW of energy provided in response to NYISO's regulation service dispatch signal. Therefore, NYISO notes, because the Bid Restriction is based on historic average revenues, it will allow suppliers to recover amounts greater than their actual costs when these costs are lower than the historic average. NYISO points out that Beacon Power focuses exclusively on the possibility that there might be individual hours during the temporary duration of the Bid Restriction in which the Bid Restriction might limit cost recovery, rather than acknowledging that there will be hours when regulation service suppliers will be able to earn revenues in excess of their costs.

50. In addition, NYISO states that Beacon Power's assertion that the Bid Restriction is not temporary ignores the plain meaning of the provision as described in the Services Tariff. NYISO points out that the section 21.5.3 of the Services Tariff requires NYISO's MMU to evaluate the Bid Restriction, at least once a year, and recommend that it continue, be adjusted, or expire. NYISO asserts that the Commission should not preempt the MMU by determining the date on which the Bid Restriction will no longer be necessary. Therefore, NYISO requests the Commission adopt the Bid Restriction as proposed. NYISO also points out that Beacon Power does not offer an alternative design and does not provide any evidence on which an alternative bid level should be based. Therefore, NYISO requests the Commission dismiss Beacon Power's and ESA's protest.

IV. Discussion

A. Procedural Matters

51. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2012), the notices of intervention and the timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding.

52. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2) (2012), prohibits an answer to a protest and an answer to an answer unless otherwise ordered by the decisional authority. We will accept the answers as they have aided us in our review of NYISO's compliance filing.

B. Commission Determination

53. We find that NYISO's compliance proposal generally satisfies the requirements of Order No. 755 and is a reasonable approach to compensating resources that provide frequency regulation service. Order No. 755 gives discretion to each RTO and ISO regarding the design of an RTO/ISO regulation market.[55] However, we require an informational report, and several changes and tariff modifications, as described below.

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[55] Order No. 755, FERC Stats. & Regs. ¶ 31,324 at P 75.

1. Clearing Process, Market Prices, the Regulation Movement Multiplier, and Accuracy

a. Order No. 755

54. Order No. 755 required all RTOs and ISOs to modify their tariffs to provide for a two-part market-based payment to frequency regulation resources.[56] These two payments include a capacity or option payment for keeping a resource's capacity in reserve in the event that it is needed to provide real-time frequency regulation service, and a performance (movement) payment that reflects the amount of work each resource performs in real-time.[57] The Commission stated that market-based prices will encourage resources to make bids that accurately reflect their costs of ramping up and down, and thus will help ensure that resources which can provide ramping capability most cost-effectively will be selected and, in turn, should lower costs to customers.[58] Order No. 755 also required that the RTO/ISO measure the accuracy of provision of regulation service of a resource in relation to the system operator's dispatch signal.[59] Under Order No. 755, RTOs/ISOs are required to link the measurement of a resource's accuracy in meeting the system operator's AGC dispatch signal to the resource's performance, and to reflect the resource's performance accuracy in the resource's compensation procedures.

55. However, although the Commission stated that it was requiring two-part bidding, the Commission did not specify an approach to market clearing and, thus, stated that it has not specified the specific technical aspects of how those bids are then used in the market-clearing algorithm.[60] The Commission further recognized that two-part bidding solutions are not insignificant problems that might need to be addressed.[61]

b. Discussion

56. We accept NYISO's proposal regarding the process for setting the Regulation Movement and Regulation Capacity prices, and conditionally accept the use of a uniform

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[56] *Id.* P 3.

[57] *See, e.g., id.* PP 198-199.

[58] *Id.* P 106.

[59] Order No. 755, FERC Stats & Regs. ¶ 31,324 at P 151.

[60] *Id.* P 185

[61] *Id.* P 185.

RMM and the temporary RMM adjustment. We generally find that NYISO's proposal is a just and reasonable approach to clearing its regulation market and is compliant with Order No. 755, and approve it pending a demonstration that the use of a uniform RMM will result in the appropriate commitment and compensation of resources, as discussed in more detail below. However, we acknowledge concerns raised by protesters and note that additional market experience may ultimately warrant further refinements to the instant proposal, and therefore, as discussed below, we will direct NYISO to file an informational report analyzing, among other things, its experience, including the degree to which the uniform RMM accurately reflects the dispatched movement of regulation service providers and allows the market to provide appropriate incentives and cost recovery, particularly as regards to the interaction between the use of a uniform RMM and setting the Regulation Movement Market Price.[62]

57. We also conditionally accept NYISO's proposed RMM value of ten (10) and its proposal to use a single uniform RMM for all hours as just and reasonable. NYISO calculated the value from the historical average ratio of Movement MWs to Capacity MWs and, represents the expected Movement MW from each MW of Regulation Capacity. In addition, as NYISO states, based on historical performance, the RMM either did not vary significantly, or did not have a predictable pattern, when viewed by season, by day of week, by weekday versus weekend, by on-peak versus off peak, or by hour of the day. We also note NYISO's commitment to continue to monitor and evaluate this value for potential adjustments.

58. We also find that NYISO's proposed accuracy provisions satisfy the requirements of Order No. 755. NYISO's proposed revisions include means of (1) measuring the accuracy of a resource's response and (2) compensating those resources according to the accuracy of their responses.[63] We find that these provisions should improve overall frequency regulation market performance by encouraging all resources to improve the speed and accuracy of their response. Accordingly, we accept NYISO's proposal to apply its current performance factor to Regulation Movement settlements and to use the performance factor in calculating a new regulation service performance charge to adjust day-ahead and real-time Regulation Capacity settlements.

59. With respect to NYISO's proposal to apply a uniform RMM, we acknowledge comments by the NYTOs that a uniform RMM might not accurately reflect the movement asked of different types of resources. As noted above, NYISO's AGC function allocates regulation response signals proportionally based on the amount of Regulation Movement

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[62] This is an informational filing only and will not be noticed or subject to comments.

[63] *See supra* P 14.

MWs they are able to provide.[64] Thus, NYISO should expect to see faster-ramping resources dispatched to provide more service in real-time than relatively slower-ramping resources.[65] Resources that are more frequently dispatched, provide more movement and more accurately respond to the dispatch signal will have their greater movement reflected in their compensation.

60. Given NYISO's limited experience with this market design, we agree with NYISO that the use of a uniform RMM may be reasonable.[66] However, as discussed above, we will only accept its use conditioned on NYISO filing with the Commission a compliance filing within 30 days of the issuance of this order. In this compliance filing, NYISO must demonstrate how resource response rates are used in the selection (commitment and dispatch) of resources and NYISO must show that the use of a uniform RMM will not result in under-compensation to resources that provide more movement than assumed by the uniform RMM. In the Commission's analysis, we presume that the Regulation Movement a resource can deliver in six (6) seconds is equivalent to the Regulation Movement Response Rate defined in the proposed tariff. We direct NYISO to confirm that our assumption is correct, or otherwise clarify as necessary, in the 30-day compliance filing required by this order. We also direct NYISO to submit, fourteen (14) months after implementation of these market changes, an informational report describing, among other things, whether the uniform RMM accurately reflects the dispatched movement of regulation service providers.

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[64] We also note that at the Commission's May 26, 2010 technical conference, Robb Pike of NYISO stated that NYISO has historically relied on large hydro units with very high response rates and very accurate response rates to provide regulation service. Robb Pike, May 26, 2010 Technical Conference (Docket No. AD10-11-000) at 49.

[65] When a resource is dispatched more in real-time than was expected day-ahead, that resource will be compensated at the Regulation Movement Market Price.

[66] It is our understanding that, given NYISO's proposed regulation market structure, a uniform RMM arguably would reduce the likelihood that bids from resources that are typically asked to perform more work would be artificially excluded from clearing in the regulation market clearing process, thus increasing the likelihood that these resources will be selected to provide their services to the system. For example, if Resource A is able to provide 20 MW of movement per MW of offered capacity in a given hour, multiplying its movement bid by twenty to create a composite bid would increase the resource's movement bid by a certain amount. If Resource B is only capable of responding at a rate of 10 MW of movement per MW of offered capacity in that hour, multiplying its movement bid by ten would cause Resource A's movement bid would appear twice as expensive as Resource B's movement bid. In this case, Resource A would be less likely to clear in the commitment process, despite its value to the system. A uniform RMM arguably avoids that issue.

61. With respect to Beacon Power's and ESA's request to modify the NYISO clearing process such that the Regulation Movement Market Price be set at the highest Regulation Movement bid of all cleared resources, instead of the Regulation Movement bid of the marginal resource, the Commission finds that request not to be justified at this time. Order No. 755 did not require that the clearing prices for both movement and capacity be set by the highest cleared bid for each component. While it did require two-part bidding, it did not specify the specific technical aspects of how those bids are then used in the market-clearing algorithm.[67]

62. Additionally, while we acknowledge concerns that the highest cleared composite offer may not correspond to the highest Regulation Movement bid, we are not persuaded that this potential outcome warrants modifications to NYISO's proposal at this time. We assume that resources will generally submit offer bids that accurately reflect their costs, and the costs of providing regulation movement are not likely to be zero, contrary to the scenario presented by Beacon. Nonetheless, we will require NYISO to file, fourteen (14) months after implementation of these rules, an informational report assessing whether the Regulation Movement prices appropriately compensate the provision of that service.[68] As part of this filing, we direct NYISO to examine whether discrepancies between the assumed RMM and the actual movement that regulation resources are asked to provide impact the efficiency of the ultimate market prices paid for Regulation Movement. The informational report should discuss whether it would be more appropriate to use resource specific RMMs, including some method to recognize that faster-ramping resources scheduled to provide Regulation Capacity likely will provide more Regulation Movement than slower-ramping resources.

63. We also note that NYISO proposed that all regulation service providers, including Limited Energy Storage Resources, whose daily energy and ancillary service market revenues do not cover the cost of their market bids, including their regulation service bids, will be entitled to a BPCG.[69] We accept this proposal as just and reasonable, as the BPCG will help to ensure that regulation service providers receive adequate compensation. As noted, Beacon Power and ESA argue that it is not just and reasonable to employ the BPCG to pay resources that are economically cleared in the bid stack at only their as-bid costs. They state that Order No. 755 directs that "the clearing performance price be paid uniformly to all resources cleared during the same settlement period," and the example they provide indicates that even with the BPCG, resources performing the most work may be paid less

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[67] *Id.* P 185.

[68] As previously stated, this is an informational filing only and will not be noticed or subject to comments.

[69] NYISO April 30, 2012 Compliance Filing at 7.

than slower resources that provide less work. Beacon Power's and ESA's concern relates to whether the Regulation Movement Market Price will be compensatory, particularly given NYISO's uniform RMM assumption and proposed method for determining Regulation Movement prices. As we noted above, we are not persuaded that this potential outcome warrants a change to NYISO's proposal. We expect NYISO's informational report to provide additional information on this issue.

64. With regards to NYISO's proposed tariff language allowing it to immediately adjust the RMM to a temporary value, we find that NYISO provides insufficient explanation of the operational or reliability problems that could require an adjustment to the RMM. We also find that NYISO has not adequately explained how a temporary adjustment of the RMM would enable NYISO to avoid such future operational or reliability problems that would otherwise require recurring operator intervention outside normal market scheduling procedures. Therefore, we require NYISO to provide this additional information and explanation in a compliance filing, within thirty (30) days of the date of this order.

2. <u>Regulation Movement Bid Restriction</u>

a. <u>NYISO's Proposal</u>

65. NYISO states that it is proposing what it describes as a temporary Bid Restriction on the Regulation Movement bid price to avoid unforeseen but potentially significant price volatility and increases in the total cost of compensation in the newly designed regulation service market. It states that this is a particular concern since, at market start, NYISO will not have reference bids for Regulation Movement bids which it needs to evaluate the competitive nature of the bids and to prevent the abuse of market power.[70] NYISO states that it may need as much as several months to develop Regulation Movement Bid-based reference levels, as well as additional experience to determine appropriate cost-based references.[71] It states that, while it may be reasonable to assume that total regulation revenue should not increase under the two-part bid because, at least theoretically, the cost of movement has always been included in the regulation service supplier's one-part bid, NYISO and many of its stakeholders are concerned that the new market could potentially produce significant and unjustified increases for loads. NYISO states that the historic 8 to 12 to 1 ratio of movement MW to capacity MW in each hour, indicates that even a moderately sized Regulation Movement bid could increase load's exposure to the cost of regulation service by several times its current level unless there was an equivalent reduction in the Regulation Capacity bid price.

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[70] *E.g.*, reference levels necessary to implement section 23.3.1.2.1.2.2 of its proposed Services Tariff.

[71] NYISO April 30, 2012 Compliance Filing at 8.

66. In its August 17, 2012 Compliance Filing, NYISO proposes to set the Bid Restriction at $2.47. NYISO states that it derived this value using historic data for the time period 2009-2011. NYISO states that it set the temporary Bid Restriction at the quotient of the average annual fuel-adjusted regulation service revenue paid to regulation service providers during the historic period, divided by the amount of Regulation Movement typically realized during this period.[72]

67. NYISO asserts that a Bid Restriction value of $2.47 is reasonable, because the value "contemplates recovery" of all historic regulation service revenues through the new Regulation Movement settlement independent of any accompanying Regulation Capacity settlement revenue. NYISO asserts that a $2.47 Bid Restriction allows recovery, at a minimum, of all costs reflected in the historic regulation service bids. NYISO notes that, in some circumstances regulation service suppliers may face variable costs that exceed the revenue recovered for the day from the Regulation Movement clearing price and any Bid Protection Cost Guarantee paid. However, NYISO states, such market participants could: (1) recover these costs through a small adder to the Regulation Movement or Capacity bid; or (2) protect themselves with a hedge by purchasing energy via a virtual position in the DAM or by pursuing out-of-market opportunities appropriate to their product, such as bilateral contracts and nodal exchanges. NYISO adds that frequently when real time energy prices are volatile, real-time regulation prices are also volatile and can trigger the Demand Curves - establishing much higher real-time regulation market prices.[73]

68. NYISO reiterates that the Bid Restriction is temporary and notes that the MMU will review the Regulation Movement Bid Restriction at least annually to evaluate, among other things, whether it can be lifted and to ensure that it does not act as a barrier to new entry.

b. <u>Discussion</u>

69. While we accept NYISO's proposal to modify section 23.3.1.2.1.2 of its Services Tariff to establish thresholds to identify economic withholding that may warrant the mitigation of a generator's Regulation Capacity and Regulation Movement bids, we reject NYISO's temporary Regulation Movement Bid Restriction and require a further compliance filing, as more fully discussed below. Although we agree with NYISO that some method for mitigating the exercise of market power could be justified during the period that NYISO develops bid-based reference levels and appropriate cost-based references, we reject its

[72] Specifically, NYISO states that, 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. NYISO states it then divided these adjusted daily settlement dollars by the estimated number of Movement MWs over the time period.

[73] NYISO August 17, 2012 Compliance Filing at n.12.

temporary Regulation Movement Bid Restriction proposal for three reasons. First, we find that NYISO has failed to demonstrate that its proposal will not dampen price signals. A central tenet of Order No. 755 was the assurance that regulation markets send efficient price signals. If resources are unable to reflect their actual costs in their bids, the bid restriction proposed by NYISO may prevent such a market outcome.

70. Second, NYISO has not shown why it expects total regulation costs to increase, stating only that an analysis was performed showing that costs could increase for load. The Commission found in Order No. 755 that we expect costs to decrease over time as more faster-ramping resources enter the market.[74] Nothing in NYISO's proposal convinces us otherwise. NYISO has also failed to explain why a bid restriction is necessary to limit price volatility if such volatility is reflective of actual Regulation Movement costs. Therefore, while we agree with NYISO that the total cost of regulation service should not increase simply because offers for both capacity and movement are included in regulation market clearing process, NYISO has failed to show why it expects costs to increase.

71. Third, we also note that Beacon Power and ESA assert that NYISO's proposed Bid Restriction on Regulation Movement may not permit adequate cost recovery for fast-ramping storage resources that must recover all their costs with the revenue earned in the regulation service market, and that NYISO's proposed methodology to establish the Bid Restriction level will result in low Bid Restriction levels because it is based on average market prices. Additionally, as the NYTOs note, the proposed revisions to section 21.5 of the Services Tariff do not indicate whether Bid Restrictions should be constant over the course of the year, or whether they should vary seasonally, reflecting seasonal variations in prices. As Beacon Power and ESA state, setting the bid cap at the average cost to provide service in all hours inherently fails to provide bid flexibility to resources at times when their costs are above average, such as during peak periods or periods of high energy prices. Both parties provided examples of how NYISO's method of analysis may result in low maximum movement prices[75] which would apply in all hours. NYISO provides an answer to this, noting that in the hour Beacon Power uses as an example, Beacon Power would have actually expected to receive more compensation than is claimed. While in this one hour NYISO has shown that a resource can expect to cover its costs, we are concerned that there would be other hours in the year when a resource could not. Accordingly, we will not accept as just and reasonable a proposal that does not allow a market participant to reflect its actual costs in its offers to the market.

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[74] *See* Order No. 755, FERC Stats. & Regs. ¶ 31,324 at P 68.

[75] May 21, 2012 ESA Comments at 12-14, and May 21, 2012 Beacon Power Comments at 14-16.

72. As previously noted, Order No. 755 required each RTO/ISO to submit revised market power mitigation provisions, as appropriate to their redesigned frequency regulation markets, or to explain how their current mitigation methods are sufficient to address market power concerns. While we have accepted NYISO's proposal to establish a mitigation threshold of 300 percent of reference levels for Regulation Movement, we acknowledge that NYISO may not yet have information necessary to accurately determine cost-based reference levels for Regulation Movement. Accordingly, we require NYISO to submit a further compliance filing, within thirty (30) days of the date of this order, either proposing tariff provisions for an interim market power mitigation method appropriate to NYISO's redesigned frequency regulation market, or explaining how NYISO's current mitigation methods are sufficient to address any market power concerns in this market during this time period. NYISO's interim method must ensure that each individual unit will have an opportunity to recover its costs in every hour.

3. Opportunity Costs

a. Order No. 755

73. Order No. 755 required ISOs and RTOs to calculate uniform clearing prices that include opportunity costs.[76] The Commission raised the concern that "by not paying a uniform clearing price, it is possible, for instance, to dispatch a unit with relatively low explicit capacity costs but very high opportunity costs, rather than a lower-cost unit which has relatively higher explicit capacity costs but low opportunity costs."[77] The Commission went on to state that "[r]egarding cross-product opportunity costs, which reflect the foregone opportunity to participate in the energy or ancillary services markets, the Commission finds that it is appropriate for the RTOs and ISOs to calculate this and include it in each resource's offer to supply frequency regulation capacity, for use when determining the market clearing price and which resources clear. Therefore we will require this."[78]

74. Order No. 755 directed each RTO and ISO to allow a resource to include its inter-temporal opportunity costs, to the extent the resource has such costs, in its offer (i.e., the foregone value when a resource must operate at a given time, and therefore must either

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[76] The Commission stated in Order No. 755, "when participating in the energy and frequency regulation markets, a resource is dispatched at a set-point below its maximum capacity. Because this amount of capacity is held in reserve to provide frequency regulation, the resource misses the opportunity to provide energy at the current LMP." Order No. 755, FERC Stats. & Regs. ¶ 31,324 at P 18 & n.22.

[77] *Id.* P 99.

[78] *Id.* P 102.

forego a profit from selling energy at a later time or incur costs due to consuming at a later time), provided such costs are verifiable.[79] Further, Order No. 755 deferred to the RTOs and ISOs to propose which party is responsible for calculating inter-temporal costs, whether the RTO/ISO or market participants.[80]

b. NYISO's Proposal

75. In NYISO's April 30, 2012 Compliance Filing, NYISO does not specify whether cross-product opportunity costs are used in the process of selecting and committing regulation resources. NYISO does include these cross-product opportunity costs in settlement. However, the cross-product opportunity cost of the marginal unit, which is used to establish the market regulation capacity price, does not appear to be incorporated in the combined Regulation Capacity and Regulation Movement bids that are used in committing regulation resources.

c. Discussion

76. We find that NYISO has failed to demonstrate that it is in compliance with Order No. 755 regarding the treatment of opportunity costs. Regarding Order No. 755's requirement to include cross-product opportunity costs in the evaluation and commitment of regulation service bids, we cannot determine from NYISO's filing whether or how such costs are considered in the clearing process. Similarly, NYISO did not address the issue of inter-temporal opportunity costs in its filing. While NYISO does not appear to prohibit resources from including inter-temporal opportunity costs in their Regulation Movement or Regulation Capacity bids, it is not clear whether NYISO intends such costs to be included in one or both of the bid components, or that NYISO has an adequate mechanism to ensure any such costs are verifiable. Accordingly, the Commission directs NYISO to submit a compliance filing within thirty (30) days of this order explaining how it will account for opportunity costs when clearing its regulation market.

V. Effective Date

77. In its April 30, 2012 Compliance Filing, NYISO requests the proposed tariff revisions become effective October 27, 2012. NYISO states that it expects to implement the software code adjustments necessary for the proposed tariff revisions related to its April 30, 2012 Compliance Filing to become effective October 27, 2012.[81] In its August 17, 2012

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[79] *Id.*

[80] *Id.*

[81] Because of the simultaneous and ongoing effort to also implement Commission-ordered Market-to-Market revisions in Docket No. ER12-718-000, the code for both designs

(continued…)

Compliance Filing, NYISO requests an effective date between October 10, 2012 and November 14, 2012, which NYISO will provide with two weeks' written notice to the Commission and NYISO's market. We conditionally accept in part and reject in part the revisions NYISO proposed in the April 30, 2012 Compliance Filing and the August 17, 2012 Compliance Filing, as described above, to become effective on a date established by a subsequent Commission order on compliance. In the compliance filing that we direct NYISO to make within thirty (30) days of the date of this order, we expect NYISO to request a revised effective date.[82]

VI. Errata

78. Section 21.5.3 of NYISO's revised Market Administration and Control Area Services Tariff states, "The responsibilities of the Market Monitoring Unit that are addressed in this Section of Attachment F are also addressed in Section of Attachment O." We direct NYISO to insert the appropriate section numbering or numberings between the words "Section of" and "Attachment O."

The Commission orders:

(A) NYISO's April 30, 2012 Compliance Filing is hereby conditionally accepted in part and rejected in part, to be effective on a date established by subsequent Commission order on compliance, subject to further compliance as discussed in the body of this order.

(B) NYISO's August 17, 2012 Compliance Filing is hereby accepted in part and rejected in part, to be effective on a date established by subsequent Commission order on compliance, subject to further compliance as discussed in the body of this order.

(C) NYISO is hereby directed to make an additional compliance filing within 30 days of the date of this order, as discussed in the body of this order.

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is being built as an integrated whole. NYISO states that it advises the Commission of this development process in order to alert the Commission to the fact that an unanticipated delay in the effective dates of revisions in this Docket or in Docket No. ER12-718-000 will effectively delay both of these efforts.

[82] On October 25, 2012, NYISO filed a letter in Docket Nos. ER12-1653-000, RM11-7-000, and AD10-11-000, stating that, if the Commission does not issue an approval order by October 31, 2012, NYISO would need to request a delay in the effective date until after January 1, 2013, in order to implement the Commission's directives in Order No. 755.

(D) NYISO is hereby directed to submit an informational report fourteen (14) months from the date of implementation of these market changes, as discussed in the body of this order.

By the Commission.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.