UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Regional Transmission Organizations) Docket No. RT01-99-000

REQUEST FOR LEAVE TO ANSWER AND LIMITED ANSWER OF THE NEW YORK INDEPENDENT SYSTEM OPERATOR, INC.

Pursuant to Rules 212 and 213 of the Commission's Rules of Practice and Procedure,[1] the New York Independent System Operator, Inc. ("NYISO") hereby respectfully requests leave to answer and answers certain exhibits submitted by the "One RTO Coalition" and the PJM Interconnection, L.L.C., in this proceeding. The NYISO previously moved that the Commission strike these exhibits because their submission violated the page limits for comments imposed by the Commission's September 27 *Notice Regarding Mediator's Report* and contravened fundamental procedural due process norms.[2] In the alternative, the Motion asked that the NYISO be afforded an adequate opportunity to respond to the exhibits. Since the Commission has not yet addressed the Motion, the NYISO is now submitting its answer to: (i) the cost-benefit analysis, and accompanying materials, presented by Mirant Corporation and prepared by Energy and Environmental Analysis, Inc. ("EEA") (the "Mirant Study"); (ii) the paper developed by PJM entitled "Accommodation of ISO-Nominated Best Practices by the Regional Networked Market Model" ("Best Practices Paper"); and

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1 18 C.F.R. §§ 385.212 and 213 (2001).

2 *See Motion to Strike, or, in the Alternative for an Adequate Opportunity to Respond and Limited Answer of the New York Independent System Operator, Inc.*, Docket No. RT01-99-000 (October 16, 2001) ("Motion").

(iii) the Affidavit of Dr. Roy J. Shanker ("Shanker Affidavit"). For the reasons specified in the Motion, the NYISO asks that the Commission accept this filing and consider it in the event that it does not strike the PJM/One RTO Coalition exhibits, before issuing an order in this proceeding.[3]

In addition, the NYISO respectfully requests leave to answer and answers the *Answer of Mirant Americas, Inc. and Mirant Americas Energy Marketing, L.P. to Motions of the New York Independent System Operator, Inc. and Certain New England Consumer-Owned Entities* ("Mirant Answer"). Although the Commission does not ordinarily accept answers to answers, it has accepted such pleadings when they are narrowly confined to clarify the record or will otherwise assist the Commission in its deliberations.[4] Because the Mirant Answer grossly mischaracterizes the NYISO's position in this proceeding, and makes a number of inaccurate statements in support of the Mirant Study, the NYISO prepared a limited answer in order to correct Mirant's distortions. In addition, because the Mirant Answer is in effect a pre-emptive attempt to answer this pleading, the NYISO

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[3] The NYISO initially estimated that it could submit this response by October 26. The One RTO Coalition did not object to the NYISO making a filing by that date. However, this filing was delayed as a result of the NYISO's need to: (i) assess the implications of various NYISO-related orders issued, and other actions taken at the Commission's October 24th meeting; (ii) monitor "RTO Week" developments; and (iii) consider the Mirant Answer (filed October 25). Given that the One RTO Coalition (including Mirant) stated that an October 26th filing date would be appropriate when it expected the Commission to issue an order on November 1, it should have no objection to the timeliness of this filing since it now appears that the Commission will not issue an order until after its November 20 meeting.

[4] *See*, *e.g.*, *Morgan Stanley Capital Group, Inc. v. New York Independent System Operator, Inc.*, 93 FERC ¶ 61,017, at 61,036 (accepting an answer that was "helpful in the development of the record . . . .") (2000); *New York Independent System Operator, Inc.*, 91 FERC ¶ 61,218 at 61,797 (allowing an answer deemed "useful in addressing the issues arising in these proceedings . . . .") (2000); *Central Hudson Gas & Electric Corp.*, 88 FERC ¶ 61,137 at 61,381 (1999) (accepting otherwise prohibited pleadings because they helped to clarify the issues and because of the complex nature of the proceeding).

respectfully asks that if the Commission rejects the NYISO's response to the Mirant Answer pursuant to Rule 213 that it also reject the Mirant Answer for the same reason.

I. Response to the Mirant Study

When the Mirant Study was published in the September 1, 2001 edition of *Public Utilities Fortnightly*, the NYISO immediately detected a number of flawed assumptions and methodological errors that called its validity into question. Moreover, it found numerous aspects of the Mirant Study confusing and opaque. The NYISO therefore asked LECG, LLC ("LECG"), a well known economic consulting services firm with particular expertise regarding the operations of the Northeastern ISO markets, to conduct a peer review of the Mirant Study. The results of LECG's analysis are attached hereto.

In summary, LECG found that the Mirant Study was flawed because, among other things, it: (i) was limited to an examination of a short period that was not representative of current conditions because prices were distorted by market design flaws that have since been addressed; (ii) took no account of whether, or when, inter-regional flows were actually constrained by transmission limits and used a very overstated measure of available transmission capacity in assessing the potential for, and benefits of, increased real-time interchange in the Northeast; (iii) ignored the presence of binding constraints within the existing ISO areas and their impact on the shape of ISO supply curves or the quantity of load that would be impacted by estimated price changes; (iv) inappropriately compared day-ahead prices with real-time flows; (v) relied on estimated New England, New York and PJM supply curves for electricity that are likely to substantially overstate the response of supply to changes in real-time prices; (vi) failed to consider the extent to which limitations associated with the lack of locational marginal pricing based multi-settlement and congestion management systems in New England affected

the validity of its methodology and conclusions. In addition, LECG determined that the Mirant Study includes a number of significant mischaracterizations, notably its inaccurate assertion that the NYISO established a single proxy bus with PJM due to "software problems" which in turn forced PJM to adopt a single proxy bus for New York.[5]

LECG attempted to reproduce the EEA analysis using the same approach and produced considerably different results. In addition, the corrected version of Mirant's analysis predicted substantially fewer benefits, most of which would be concentrated in PJM, and indicated that there could, if certain assumptions proved accurate, be significant price increases in New York. At the same time, LECG recognized that even its attempt to improve the EEA methodology did not satisfactorily address all of the Mirant Study's methodological and data limitations and may not provide an accurate estimate of the actual benefits of an ISO combination.[6] LECG therefore recommended that a more careful analysis be conducted using a more appropriate methodology as well as data, and expertise, from all three of the existing Northeast ISOs.[7]

Given LECG's analysis and conclusions, it is apparent that the Mirant Study's results should not be relied upon by the Commission in its RTO policy deliberations. More generally, the NYISO hopes that LECG's review will illustrate some of the issues that a truly comprehensive cost-benefit analysis must consider and will provide a sense of how complex they can be. If the Commission is interested in

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[5] In reality, the NYISO included a single proxy bus in its market design because of its concerns that the use of multiple buses would facilitate gaming and have adverse market impacts. PJM ultimately came to the same conclusion after gaming occurred and moved to a single proxy bus system as well.

[6] LECG noted that neither it, nor the NYISO alone, nor any other single entity has access to all of the necessary data. However, an accurate study could be pursued if all three Northeast ISOs worked together.

conducting an accurate cost-benefit analysis for the Northeast, it should involve all three of the existing ISOs, and other interested stakeholders in the process. It should not rely on a biased study prepared by any one stakeholder, or any single stakeholder sector. Likewise, it should not attempt to prepare its own analysis in isolation, or in secret, and should reconsider if it has already initiated such an effort.[8] An open and inclusive process is much more likely to produce an accurate, balanced and complete study that will be broadly accepted. Merely updating the environmental impact studies that were issued in connection with Order Nos. 888 and 2000 and presenting them as new cost-benefit analyses justifying super-regional RTOs would be unlikely to achieve this result.

II. Response to the Mirant Answer

The Mirant Answer inaccurately claims that there is no need for RTO cost/benefit analyses because it is supposedly self-evident that the benefits of forming super-regional RTOs will exceed the costs, and because the question was ostensibly already decided by the Commission's July RTO orders. This ignores the strongly held view of many parties, including a large number of state regulatory commissions, that legitimate cost/benefit analyses are urgently needed. This issue is one of many raised by various still-pending requests for rehearing of the July RTO Orders. Based on the public comments

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[7] *See* the Attachment for additional information about LECG's analysis and findings.

[8] There have been various indications that such studies are underway. Most recently, Commissioner Breathitt hinted that the Commission had already begun separate regional cost-benefit analyses. *See Remarks of Commissioner Linda K. Breathitt, at the 19th Annual ELCON Seminar, "Crisis and Chaos: Energy Markets and the New Economy"* at 4 (October 25, 2001). The NYISO agrees with the October 17 *Request of Certain New England Consumer-Owned Entities for Opportunity to Comment on Cost/Benefit Analyses Concerning Northeast Regional RTO Consolidation* in this proceeding that important RTO policy decisions must not be made on the basis of an incomplete record or a set of assumptions that have not been revealed to, or addressed by, existing ISOs and other stakeholders.

of the Commissioners, the Commission itself has recognized that the lack of cost/benefit analysis support for the July Orders was problematic and, as noted above, apparently has initiated new studies of its own.

Indeed, Chairman Wood identified the Mirant Study as a possible example of the sort of study that needed to be conducted in an open Commission meeting and the Commission went so far as to give Mirant a public forum to explain its analysis.[9] The Commission's expressed interest in the Mirant study, and the possibility that it might rely upon it in making critical public policy decisions, makes it entirely appropriate for the NYISO to call the Commission's attention to the study's weaknesses. Of course, if Mirant genuinely believed that cost/benefit analyses were not needed then it is unclear why it went to the trouble of commissioning a study at all and why the One RTO Coalition, which includes Mirant, thought it necessary to file the study in the first place.

The Mirant Answer also distorts the NYISO's position by asserting that it is trying to force the Commission to engage in "endless fact-finding to further support cost/benefit analysis already performed."[10] Mirant even criticizes the NYISO for failing to cite legal authority in support of this argument, which the NYISO has never made.[11] The truth is that the NYISO has asked only that the Commission respect basic procedural due process norms by permitting the NYISO a fair chance to respond to exhibits that were filed in violation of Commission-prescribed page limits which the NYISO had honored and the One RTO Coalition had not. It is self-evident that it would be grossly inconsistent

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9 The NYISO participated in these public meetings and raised a number of questions which exposed the Mirant Study's flaws.

10 Mirant Answer at 5.

11 *Id.*

with due process for the Commission to apply different procedural rules to different parties in the same proceeding.

Moreover, contrary to Mirant's claims, the NYISO is expressly not calling for a time-consuming and non-constructive battle of partisan experts over cost/benefit issues. Instead, the NYISO believes that there should be a single accurate and intellectually honest investigation to be conducted either by the three existing Northeastern ISOs or the Commission itself in an open process that allows for stakeholder input. Such a study need not impose an undue delay and could be completed within the Option 1-M timeframe that Administrative Law Judge H. Peter Young has endorsed.

Mirant has also taken certain findings from the joint ISO study of the feasibility of a Northeastern Day-Ahead Market ("Joint Study")[12] and the NYISO's independent market advisor, Dr. David Patton, out of context in an attempt to bolster its position. For example, while it is true that the Joint Study found that a single super-regional energy market would bring benefits that study did not contemplate an ISO merger, or attempt to evaluate the costs and benefits of such a combination. Instead, the Joint Study envisioned that the existing ISOs would operate a single market, based on a market design that reflected best practices and accounted for the reliability needs of each sub-region. The Joint Study provides no support for a conclusion that the benefits from consolidation of the existing ISOs would necessarily outweigh the possible costs or that careful market design would not be necessary to realize those benefits.[13] Indeed, the NYISO has previously referred to the Joint Study to

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[12] *See* John Buechler, Scott Harvey, Susan Pope and Robert Thompson, *Feasibility Study for a Combined Day-Ahead Market in the Northeast* (May 4, 2001).

[13] One of the recommendations of the Joint Study was the need for a cost-benefit analysis to determine whether to proceed further with the development of a single Northeastern energy market.

support its view that a virtual RTO framework could be comparable to an ISO merger, or actually superior given the reduced structural and transitional costs. Similarly, Dr. Patton's observations, which the NYISO supports, that eliminating seams between the existing Northeastern ISOs and aggressively promoting interim market improvements during any RTO transition would help the Northeast marketplace (and New York more specifically) do not support the conclusion that a Northeast RTO will inevitably bring benefits that outweigh its costs.

Finally the Mirant Answer's critique of the LECG study is essentially an attack on the NYISO's press release, which noted one set of assumptions under which an ISO merger could increase costs to New York consumers, that does nothing to undermine the LECG study itself. Mirant and EEA admit that their study was simplistic and omitted a variety of real world complexities but nevertheless try to depict LECG's correction of the Mirant Study's acknowledged flaws as an attempt to manipulate its results. They seek to justify their sole reliance on historic data from June through December 2000 by claiming that they used the data available when the study began, which is implausible given that it took LECG only two weeks to recreate EEA's analysis and extend it through August 2001.[14]

Equally implausibly, EEA continues to argue that it is meaningful to compare day-ahead prices with real-time schedules, on the ground that most load settles either at day-ahead or bilateral prices. EEA never explains why real-time schedules should reflect day-ahead rather than real-time prices. Contrary to EEA's assertions, day-ahead schedules exist and are "checked out" between control areas

[14] Rather incredibly, they also argue that there is no evidence of market design flaws or sham transactions at the external New York proxy buses before October 11, 2000, a position that is belied by the broad stakeholder support for NYISO action to permanently correct these flaws by submitting proposed tariff amendments in Docket No. ER01-3112-000.

each day. These day-ahead schedules are often very different than real-time schedules because real-time schedules respond, as would be expected in a working market like New York's, to real-time prices. It is absurd for EEA to suggest that the efficiency of an ISO or RTO should be judged by the extent to which real-time electricity flows reflect day-ahead prices instead of real-time prices.

Most remarkably, Mirant and EEA assert that it is intuitively obvious that a Northeast RTO's benefits will exceed its costs and then condemn a serious analysis which demonstrated that their presumption might be false for reaching "counter-intuitive" conclusions. The Commission should not be fooled by such arguments and should expeditiously initiate a legitimate and methodologically sound cost/benefit analysis.

III. Response to the Best Practices Paper

A. General Observations

Although PJM and the One RTO Coalition present the Best Practices Paper as if it were technically unimpeachable, in reality it depends on a series of unsupported presumptions, assumes away difficult problems and prejudges major issues. Based on the NYISO's understanding of PJM's systems,[15] and its knowledge of what is required to successfully manage its own more congested and supply concentrated system, the NYISO is very skeptical of the Best Practices Paper's claims

[15] The NYISO's knowledge regarding PJM's hardware, software and other systems is derived from technical discussions with PJM staff, during the early phases of the mediation, in connection with the Northeast ISO Memorandum of Understanding ("MOU") process and during a series of post-mediation meetings facilitated by the New York State Public Service Commission and the New York State transmission owners. The NYISO has also learned a great deal from its staff's daily interactions between its and PJM's operators.

regarding the "Regional Networked Market" ("RNM") model's ability to incorporate[16] essential best practices. The NYISO also doubts PJM's claims that the solutions proposed in the Best Practices Paper, and in the RNM model as a whole, are necessarily the most "cost-effective." The NYISO has raised a number of questions about the Best Practices Paper which PJM has not addressed. Indeed, when PJM realized that the NYISO had serious doubts about its software's capabilities, it temporarily refused even to permit the NYISO to examine its systems further. Subsequent meetings with PJM staff have provided little access to additional information and have not diminished NYISO's concerns about PJM's ability to keep the Best Practices Paper's promises.

Moreover, as PJM recently noted, the Best Practices Paper was "extensively discussed during the mediation"[17] where many of its unproven presumptions were challenged and, in the NYISO's view, not satisfactorily explained. After considering this discussion, Judge Young refused to include the Best Practices Paper in the Business Plan and later concluded in his Report that "Option 3-M does not provide a meaningful opportunity to identify [best] practices, let alone implement them."[18] Far from ignoring the Best Practices Paper, Judge Young's Report described its basic premises[19] and rejected

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[16] PJM invariably takes the position that the RNM can "accommodate" New York and New England best practices. However, the Commission's July RTO orders require that the PJM platform be modified to "incorporate" best practices, not merely to "accommodate" them. This is more than a mere semantic difference that reflects PJM's reluctance to accept modifications to its platform.

[17] *See Answer of PJM Interconnection, L.L.C. to Motion of the New York Independent System Operator, Inc.*, Docket No. RT01-99-000 at 1 (October 31, 2001).

[18] *See Regional Transmission Organizations, Administrative Law Judge Mediator's Report to the Commission* ("Report"), 96 FERC ¶ 63,037 (2001) at 65,250.

[19] *See* Report, 96 FERC at 65,249 ("[Option 3-M's] proponents argue that Option 3-M already addresses the local reliability best practices identified by NYISO and ISO-New England, and allows three (3) months during the post-mediation process to determine which additional pre-identified best practices should supplement the PJM framework. They concede that some pre-identified best practices

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them while encouraging the Commission to carefully consider "Option 3-M's underlying assumptions and trade-offs."[20] Under the circumstances, it would be arbitrary and capricious for the Commission to accept the Best Practices Paper's, or RNM's, unsubstantiated claims. It would likewise be inappropriate not to conduct a genuinely independent technology review, as strongly recommended by Judge Young, in light of the commercial incentive that PJM and its software vendor have to promote PJM systems and software.[21] Instead of rushing headlong to embrace the Best Practices Paper and RNM, the Commission should instead adopt Option 1-M, order an independent technology assessment and take the time to determine whether PJM's proposals will actually work as advertised. The review need not result in significant delays if PJM will cooperate in the process and agree to exchange technical information needed to lay the groundwork for an independent review. To date, PJM has refused repeated NYISO's requests that it do so, insisting instead that any cooperative effort be focused solely on implementing Option 3-M, despite Judge Young's warnings.

In its comments in this proceeding, the NYISO briefly highlighted the fundamental problems with the RNM proposal, *i.e.,* its vagueness, its unsubstantiated presumption that it is feasible and cost-effective to delegate a particular set of market, reliability and consumer protection functions to local

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could not be implemented by the fourth quarter of 2003, but maintain that most of those practices could be incorporated at market start-up without affecting the anticipated implementation date if adopted in the first three (3) months and, if desired, could be implemented after initial market start-up (*i.e.,* by the fourth quarter of 2004)"). This is an accurate description of the plan outlined in the Best Practices Paper.

[20] Report, 96 FERC at 65,250.

[21] *See Comments of the New York Independent System Operator, Inc.* ("NYISO Comments"), Docket No. RT01-99-000 (October 9, 2001) at 7. As the NYISO has previously noted, such an independent review will not occur if the Commission endorses a PJM dominated Northeast RTO Board, since the current PJM Board has already committed itself to RNM.

control centers, and its facile assumption that regional and local activities can be smoothly and reliably coordinated. The same flaws permeate the Best Practices Paper which is so vague that it is extremely difficult, and often impossible, to assess the accuracy of its assertions. In effect, the Best Practices Paper insists that RNM can accommodate (not incorporate) "35 of 40" nominated best practices without making an honest attempt to explain how or providing a legitimate opportunity to consider what has been promised. It does not seriously discuss the schedule and resource requirements of enhancing the PJM platform's functionality in order to incorporate various best practices within its 24-month timeline.[22]

This approach does not inspire confidence. PJM should be willing to discuss and explain its plans as it would surely demand that the proponents of alternatives do. Other parties should not be expected to unquestioningly trust PJM to do the right thing, especially with respect to market or reliability problems that PJM is not familiar with and in light of PJM's incentives to favor its own systems and software products. A sound market design plan would take the time to think through and explain the practical details.

Finally, the Commission should be aware that two of the best practices which PJM admits it will not be able to incorporate, *i.e.,* the simultaneous co-optimization of energy and reserves and the use of an hourly interchange evaluation that provides an opportunity to make hourly bid changes, are, as is discussed in detail below, among the most important of the NYISO's nominated best practices.

B. Comments on Specific Best Practices Issues

[22] The fact that Option 3-M also envisions that market implementation efforts will begin immediately belies the claim that any Best Practices could actually be incorporated within its 24 month time frame.

PJM has also already conceded that there are actually more than forty nominated best practices because certain key NYISO market mitigation measures were omitted from the Best Practices Paper "[t]hrough an oversight." The NYISO has previously addressed PJM's claim in this proceeding that the RNM will somehow incorporate these practices based on PJM's existing market power mitigation tools, which are far less sophisticated and precise than the NYISO's.[23] The Commission must also understand that the NYISO's mitigation tools are an integral part of its Day-Ahead Market software and that PJM could not implement them without incorporating them into its Day-Ahead Market software, which would require changes that are almost certainly not compatible with Option 3-M's aggressive timeline. However, PJM's RNM proposal appears to envision that these mitigation functions will somehow be performed by local control centers, even though the Day-Ahead market functions will be performed at the regional level. The NYISO is very concerned that this arrangement will not work and that RNM's implementation will deprive New York of critical market power protections.

In addition, having local control centers mitigate generation bids after a coordinated regional unit commitment is complete[24] will probably result in substantial over-commitments of generation, artificially low real-time energy prices (due to large additional unit commitments to meet local reliability criteria), a skewed incentive to shun the Day-Ahead Market (in order to capitalize on artificially low real-time prices) which would increase market volatility and uplift payments. The NYISO's creators considered taking this approach during the ISO development process but found that it did not produce market-

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23 *See* Motion at 5-6.

24 *See* Best Practices Paper at 2.

based outcomes. Mitigating after a regional market solution has been developed would also be inconsistent with the growing consensus that mitigation should occur up front whenever possible.[25]

PJM's proposals also ignore the conclusion of the Joint Study of a single Northeastern Day-Ahead Market. That study found that a common Northeast market would not be feasible without significant real-time coordination between the control areas involved using a fully operational Northeast-wide congestion management system. PJM's proposal to extend its existing real-time dispatch tools to cover the entire Northeast appears to be inadequate to meet New York's needs since PJM's software does not perform: (i) a simultaneous co-optimized solution for energy and reserves; (ii) the reserve handling functions that are essential in New York; and (iii) the complex, but necessary quick-start unit management functions that the NYISO's real-time software does. The NYISO does not believe that PJM's software could be modified to perform these functions within the Option 3-M timeline, which means either that the Northeast RTO market will lack these important capabilities or that the RNM cannot be implemented as quickly as PJM claims.

In addition, it is unclear what PJM has in mind with respect to the real-time market when it states that "[c]urrent existing systems would be used to perform local contingency analysis and coordinate with the regional dispatch when needed. Local control actions would be fed back to the regional dispatch."[26] PJM has not explained whether local control centers would actually be dispatching generation to solve local constraints, how such activity would be coordinated with regional operations, and whether generation dispatched to solve local constraints would ever set prices or would be treated

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[25] *See Electricity Market Design and Structure, Docket No. RM01-12-000, October 15-19,2001, Staff Summary of Discussions* at 20.

as self-scheduled price-taking generation for price calculation purposes.[27] Given the number of New York transmission constraints that must be evaluated in real-time it does not appear feasible for local control centers to "supplement and verify regional dispatch instructions" in real-time.[28] It is not even clear whether PJM envisions a single five-minute dispatch or would have both a regional and three or four local dispatches that will somehow have to be coordinated.[29] Such ambiguity makes it impossible to determine the costs, benefits and feasibility of what PJM has proposed. It also impedes a reasoned analysis of how numerous related and important issues, such as self-scheduling, the management of block loaded units in New York City, price-setting and billing, will be addressed.

Similarly, the NYISO has many concerns regarding the capabilities of PJM's real-time software and many (unanswered) questions about the new, and as of yet unproven, "fully automated dispatch system" that PJM will implement in connection with its PJM West upgrades.[30] Once again, it is also unclear how "[l]ocal control center existing systems would continue to be used to further refine or supplement the regional solution when required" or whether this is possible, particularly given Option 3-M's schedule.

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[26] Best Practices Paper at 2.

[27] The NYISO has learned that this choice can have profound price and market efficiency ramifications, especially with respect to fixed block gas turbines in New York City. These effects would have to be considered as part of any rational evaluation of the Best Practices Paper.

[28] *See* Best Practices Paper at 4.

[29] PJM's proposal also ignores the time and expense that would be required to upgrade existing ISO/local control center software to address the real-time coordination challenges that RNM will pose.

[30] A NYISO technical team that visited PJM to learn about its new software tools concluded that it would bring significant improvements but would still not permit PJM to efficiently handle In-City fixed block gas turbines, manage reserves, or simultaneously co-optimize energy and ancillary services

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The Best Practices Paper also assumes that neither the NYISO's Balancing Market Evaluation ("BME"), nor any other kind of formal interchange schedule analysis that produces hour-ahead prices, will be needed because PJM's real-time software is sufficiently scalable to dispatch a market as large and complex as the Northeast. The NYISO's initial review of PJM's systems indicated that this was not accurate even when the newest enhancements are accounted for. Judge Young reached the same conclusion based on his own discussions with independent software experts.[31] If PJM's real-time software proves inadequate then BME, or some alternative hourly interchange schedule analysis will be needed for reliability purposes.[32] It does not appear that PJM could develop such a system within the confines of the Option 3-M timeline. Accordingly, more information on PJM's plans, and the capabilities of its systems, should be provided so that they can be accurately and independently assessed.[33] Schedules for expanding these systems to cover the entire Northeast should not be established until they are better understood and have been subjected to realistic preliminary testing.[34]

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markets. These functions are critically necessary to preserve reliability and mitigate market power problems in New York.

[31] Report, 96 FERC at 65,250.

[32] BME also plays a market mitigation role, insofar as certain mitigation "watch lists" are incorporated into it. If BME were eliminated, it would be necessary to add this function to some other system.

[33] As Judge Young warned, "there are very, very few vendors" that design electricity market software "and those vendors have a tremendous economic incentive to overestimate their software's capabilities" in order to capture lucrative RTO development contracts. *See* Report, *slip op*. at 19. The "verification" problem is especially serious with respect to scalability and other technical software issues.

[34] Contrary to certain parties' assertions, the NYISO is not trying to slow the RTO development process by arguing that PJM's existing and proposed systems must be exhaustively tested before any action is taken. However, it is insisting that a RTO formation plan must follow sound management

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Another major concern is the Best Practices Paper's inaccurate assertion that under RNM the "regional market will meet reserve and regulation requirements through co-optimization of all bids and offers."[35] Currently, the NYISO simultaneously optimizes energy, regulation and all reserves using market bids whereas PJM lacks reserves markets and "co-optimizes" reserves using administrative mechanisms. It would take significant time and effort to add true co-optimization capability to PJM's software, and it seems unlikely that the necessary upgrades could be completed within Option 3-M's timeline. Moreover, PJM has conceded that it will not be able to implement a spinning or non-spinning reserves market by its proposed energy market start date. PJM staff has also told NYISO staff that PJM's software is simply incapable of accommodating availability bids for ancillary services in a co-optimization with the energy market. It is, therefore, clear that true co-optimization will not exist under RNM for some time.

Full market-based co-optimization of energy with regulation and all ancillary services in the Day-Ahead Market is however a very important feature of the NYISO market design. It permits the NYISO to account for the major locational reserve needs and address reliability issues that exist in New York (but not in PJM). It also helps to maintain the competitiveness of the NYISO-administered markets by avoiding the gaming opportunities and other problems that plagued California's original

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principles, including upfront analysis and testing. It would not be prudent to proceed on the basis of a vague plan in the hope that the details, and any problems, can be worked out along the way.

[35] *See* Best Practices Paper at 5.

ancillary services market design.[36] Abandoning a true co-optimization would, therefore, very likely result in substantial additional costs for New York consumers each year.

Moreover, the Best Practices Paper claim that the NYISO's nominated best practices with respect to self-scheduling are "mooted by RNM"[37] reflects a troubling lack of understanding of fundamental differences between the New York and PJM markets. PJM's self-scheduling rules work well in PJM where there is still a substantial amount of vertically integrated generation and divested generation that is contractually committed to its original owner. PJM utilities can easily switch to self-scheduled generation when Locational Marginal Prices ("LMPs") increase and reduce their costs. If applied in more open markets, where generation is more fully divested, such as New York or New England, however, PJM's rules could result in cost-shifting because divested utilities would have no ability to "flick on" generation in response to rising prices. Furthermore, in New York's more heavily congested transmission environment operating margins would likely have to be increased at major interfaces in order to account for the uncertainty introduced by widespread self-scheduling, thereby reducing available transmission capacity. This problem would be further exacerbated if PJM's plan to eliminate BME were also adopted. New York's existing self-scheduling rules were designed with these realities in mind. Simply imposing PJM's rules on New York would create a less efficient market with less available transmission capacity and impose heavy costs on New York consumers.

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[36] The NYISO also believes that the Best Practices Paper's proposal not to consider regulation bids in the unit commitment would cause inefficient regulation price increases in New York. *See* Best Practices Paper at 7.

[37] *See* Best Practices Paper at 6.

At the same time, PJM's proposal to dispense with hourly bidding and adopt PJM's self-scheduling rules could have a major adverse effect on energy limited resources, *e.g.,* hydro and pumped storage units, which are important in New York but much less prevalent in PJM. If these resources lose the ability to submit day-ahead bids that vary hour-by-hour, as well as the flexibility to adjust them during the dispatch day, and are instead required to rely on day-ahead bids and self-scheduling, the result will likely be that they will make less capacity available in the real-time dispatch. This could be very disruptive York and might have a major effect on prices and reliability in New York. The alternative, modifying PJM's self-scheduling rules to address New York's needs would be difficult, might not even be practicable, and would very likely push back the Option 3-M timetable.

The NYISO is also concerned that: (i) PJM's existing software, or its planned software enhancements may not be able to co-optimize Phase Angle Regulators in the manner that the Best Practices Paper suggests;[38] (ii) the NYISO's robust demand-side bidding mechanisms and marginal losses rules could not realistically be included in a regional LMP or commitment based on the PJM platform and software[39] in the timeframe that PJM envisions; (iii) PJM's current inability to handle negative bids, and its practice of not fully committing generators to meet Day-Ahead Market schedules will make the use of TLRs or other curtailment mechanisms more frequent than the Best Practices Paper admits;[40] (iv) the Best Practices Paper does not address billing and settlement systems, or the timetable

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38 *See* Best Practices Paper at 3.

39 *Id.*

40 *Id.*

for developing them;[41] (v) the Best Practices Paper assumes that the RNM's communications requirements, including with respect to confidentiality and security, can be met, without considering the need for procedural, operational and technical improvements or the reliability consequences of communications breakdowns; and (vi) PJM's proposal would lack the kind of precise generator control tools that are needed if the New York State transmission system is to be operated without greatly tightening its current, transfer limits. As with the other issues raised herein, the NYISO's primary concern is not that it would be impossible to modify the PJM platform to incorporate essential NYISO practices if sufficient time were allotted and if PJM were genuinely willing to make necessary changes. The problem is that PJM has made a large number of facile, unrealistic promises regarding its ability to "accommodate" best practices and that Option 3-M does not allow the time to conduct the necessary evaluations or to complete the necessary work.

More generally, the Commission should be skeptical of claims that PJM's experience in extending its systems to PJM West is legitimately transferable to the entire Northeast. PJM West is a much smaller and simpler system than either New England or New York. Expanding to include it presented far fewer technical challenges and did not require PJM to make any best practices related changes to its own systems. By comparison, it will take more time for ISO-New England, Inc. ("ISO-NE") to implement a standard market design based on the PJM platform than Option 3-M allows for the larger and more complex New York market (which has more essential best practices than ISO-NE)

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[41] The NYISO has found that these systems can be extraordinarily complex to implement, especially given the peculiarities of the New York transmission system, and that problems with them can distort price signals and threaten reliability. Their development must not be an afterthought and should not be rushed.

to be brought into the RNM framework. Based on these considerations, it appears to the NYISO that the only way Option 3-M's aggressive timetable could be met would be if PJM's market design and software were imposed wholesale on New York, a possibility that PJM has not disavowed.[42] Furthermore, even if an analogy to PJM West were valid, the fact remains that PJM West has not yet even commenced operations using the PJM platform, and it would make sense to observe how well that expansion works before rushing to emulate it.

Finally, in light of the events of September 11, it would not be responsible to accept the Best Practices Paper claims at face value without conducting an upfront review of their security implications.

In short, the Commission should not accept the Best Practices Paper's assertions until key issues, including those set forth above, have been better explained and critically evaluated. As the Commission recognizes and as Judge Young has warned, there could be catastrophic consequences if the Northeastern RTO market design does not incorporate essential best practices and does not work right the first time. Moreover, as Judge Young recommended, the Commission should not simply accept PJM's, or its software vendor's, self-interested promises regarding RNM's technological feasibility. A genuinely independent technical review is needed to help the Commission decide whether the RNM proposal can actually incorporate best practices in its proposed timeframe and whether it is truly the most cost effective way to proceed. If PJM truly believes that its proposal is sound, it should be willing to subject it to a seven month vetting process that its own staff agreed was appropriate.

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[42] As Judge Young emphasized, PJM has never conceded that there are any non-PJM best practices. Even now, it continues to suggest that the decision whether to include best practices should be made by stakeholders, many of whom would benefit if New York's essential market mitigation related best practices were not included in the final market design.

IV. Response to the Shanker Affidavit

A. General Observations

The Shanker Affidavit makes a number of accurate points concerning the broad similarities between the NYISO and PJM systems. At the same time it obscures a number of critical differences that were deliberately included after a great deal of thought in the NYISO market design to reflect New York-specific circumstances and minimizes the consequences of their elimination. It also fails to address many of the issues, described above, which are of serious concern to the NYISO while focusing in great detail on issues that are not in dispute. Notably, Dr. Shanker accepts all of the Best Practices Paper's presumptions at face value without questioning their validity. Dr. Shanker also mischaracterizes the NYISO's mediation position as insisting that NYISO systems be the platform for a Northeast RTO rather than PJM's,[43] when the reality is that the NYISO sought only to ensure that the PJM platform could and would be modified to the extent necessary to make it work for the entire Northeast. This is a constructive, not an obstructionist, effort which Dr. Shanker is wrong to denigrate as a "scare tactic."[44]

As an initial matter, Dr. Shanker's argument that a Northeast RTO must be formed as rapidly as possible because of the potential savings involved[45] is undermined by its dependence on the deeply flawed Mirant Study.[46] His estimate of the overhead cost reductions that might result if an involuntary ISO merger and the RNM model were implemented is, at best, a guess, especially because it is

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43 Shanker Affidavit at ¶ 29.

44 *See, e.g.,* Shanker Affidavit at ¶ 34, 36.

45 *See* Shanker Affidavit at ¶¶ 11-13.

46 The Mirant Study's manifold weaknesses are highlighted above in Section I and are described in detail in Attachment I.

impossible to know how responsibilities will actually be divided under RNM, and it is, thus, not known how many staff will be needed at the proposed local control centers. If it turns out that a great deal of work will take place at the local level, as the Best Practices Paper seems to imagine, then the overhead cost-savings may be negligible. Likewise, if RNM somehow keeps necessary local market differences in place, it seems unlikely that Northeast stakeholders will save anywhere near as much from the formation of a Northeast RTO as Dr. Shanker anticipates. Dr. Shanker has also ignored the possibility that costs will increase, on a scale that would far exceed any possible overhead reductions, in the event that RNM is adopted but ultimately fails. This risk would become more serious if Option 3-M's overly aggressive timetable were adopted.[47]

Dr. Shanker's opinion that a Northeast-wide real-time market would be feasible, which is derived from a Nexant/PCA study he commissioned,[48] is not persuasive. The Nexant/PCA analysis is a limited power flow analysis consisting entirely of "preliminary feasibility screens" that were intended to evaluate the potential performance of hypothetical key "technical engines." It does not analyze whether Security Constrained Unit Commitment ("SCUC") functions are scalable, whether the other parts of a real-time dispatch program are scalable, whether any of the existing systems actually employed by the Northeast ISOs are scalable or whether the various "technical engines" could be coordinated within the timeframe (five minutes or less) necessary for an efficient real-time dispatch. It likewise does not consider the feasibility of the actual RNM proposal, which in fairness, would be extremely difficult, if not impossible, to do until the RNM model's ambiguities are resolved. In short, Dr. Shanker's analysis

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[47] The NYISO also strongly disagrees with Dr. Shanker's bald assertion that voluntary efforts to capture the savings that would result from a single market have failed. *See* Shanker at ¶ 11.

provides another example of why the Commission should insist on an independent technology and not rely on the analysis of an expert retained by an interested party.[49]

Dr. Shanker's comments regarding the "modularity" of PJM's software and the comparison that he draws to the supposed inflexibility and other limitations of the NYISO software must be clarified.[50] Although the now prevailing conventional wisdom holds that PJM's software is easier to modify than the NYISO's, there is no empirical basis for Dr. Shanker's characterizations as he is not personally familiar with the actual software structure of either platform. He likewise fails to identify any specific software change that PJM implemented more rapidly than the NYISO. ISO-NE's experience adapting the PJM software for its use as part of the standard market design project, and the amount of time that ISO-NE has predicted it will take to complete that project, does not suggest that PJM's software is easy to modify. It is true that PJM's new real-time dispatch software, which will be implemented in conjunction with the PJM West expansion, will be newer than the NYISO's existing Security Constrained Dispatch software.[51] However, the two systems' day-ahead market (*i.e.,* SCUC) software are approximately the same age and, in the NYISO staff's opinion, the New York SCUC is superior. There has in fact been no technical assessment of whether PJM's software is sufficiently malleable to satisfy the needs of a Northeast RTO, and there are tasks, *e.g.,* the co-optimization of

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48 *See* Shanker Affidavit at ¶¶ 14-27.

49 Dr. Shanker candidly admits that he prepared his analysis on behalf of the One RTO Coalition. Shanker Affidavit at ¶ 8.

50 *See, e.g.,* Shanker Affidavit at ¶¶ 27, 29, 51, 82.

51 The NYISO has plans to replace its real-time dispatch software in the near future. Dr. Shanker's claim that "it would be a virtually impossible task to update the NY market platforms to

(continued…)

energy and reserves, that it appears PJM's software could only be made to perform with considerable time and expense.

Dr. Shanker's assertions that the NYISO's software is more integrated, and thus less modular, than PJM's appear to confuse modularity and flexibility with the greater scope of the functions performed by the NYISO's software. The NYISO software automates various functions, *e.g.,* market power mitigation and real-time congestion analysis, that are not automated in PJM. This difference is not accidental. These functions must be performed in an integrated and automated manner in New York, given the greater complexity and congestion[52] of its system, but do not require automation, or are not even undertaken, in PJM. Thus, the NYISO staff believes that PJM's software would need to become more integrated, and, thus, lose much of its supposed "modularity advantage," if it were required to manage the NYISO system.[53]

B. Specific Best Practices Issues

The Shanker Affidavit articulates Dr. Shanker's opinion that the differences between the New York and PJM systems are slight and that New York's nominated best practices are not important and

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incorporate these new and faster solutions without a major overhaul of the entire market design and software," Shanker Affidavit at ¶ 26, is incorrect.

[52] Using conservative assumptions, the NYISO staff has estimated that congestion was 61% greater in New York than in PJM in 2000.

[53] Dr. Shanker is also incorrect to suggest that the NYISO's concerns about RNM and the Best Practices Paper are based on bad experiences with its own software and insufficient appreciation of PJM's. *See* Shanker Affidavit at ¶ 51. The NYISO's assessment has taken account of the relative advantages and disadvantages of the NYISO and PJM systems based on the best information available to it.

could quite easily be done without. This opinion is wrong.[54] Events this summer demonstrated that the NYISO's best practices are critically important to reliability and market performance in both New York and the Northeast as a whole. For example, the NYISO has determined that its software's ability to co-optimize energy and reserves, BME's optimization of in-day resource adjustments and demand-response tools made it possible for the NYISO to meet its load while still exporting energy to, and taking other steps to assist, PJM during the record August 9, 2001 peak. These best practices enabled the NYISO to accurately track and to augment system energy and reserves in real-time despite adverse operating conditions and to fully utilize New York's limited transmission capacity. If true co-optimization and a BME-type mechanism are eliminated in favor of RNM's least common denominator approach, it is unlikely that New York, or the Northeast, will fare as well the next time a record peak occurs.

More generally, in response to Dr. Shanker's comments, the NYISO offers the following comments on several key differences between the NYISO and PJM systems and the necessity of incorporating of NYISO practices into the PJM platform.

1. Discrete Ancillary Services Markets

A key advantage of the New York system for New York's circumstances is its separate ancillary services markets, in particular its markets for 10 minute spinning and 10 minute non-spinning reserves. Dr. Shanker suggests that the NYISO's reserve markets and availability payments are unnecessary and that PJM avoids the need for such markets because PJM relies on ICAP units and the

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[54] Similarly, former Florida Public Service Commission Chairman Joe Garcia was wrong when he suggested that best practices were unimportant and "evolving" at the Commission's October 24th open meeting.

payments of bid start up and no load costs to meet its quick start and reliability needs.[55] ICAP status does not, however, require generating units to be available within 10 minutes. Indeed, steam units can qualify for ICAP in both PJM and New York with start-up times of many hours. It is quite possible that given the resource mix and operating procedures in PJM, the availability of ten minute reserves does not affect the PJM unit commitment or dispatch. This lack of impact cannot, as discussed above, be generalized to New York. The New York transmission lines are in some cases operated at levels that require capacity to be available within ten minutes to reduce loadings in the event of a contingency. Absent sufficient ten minute reserves to support this operating procedure, transmission line loadings would need to be reduced to maintain the reliability of the system, resulting in cost and emissions increases for New York consumers, particularly in New York City. The purpose of moving to a larger, competitive market should be to reduce the costs of meeting electricity demand by operating the region's electric systems more, not less, efficiently. It is therefore absolutely essential to ensure that any combined Northeast market have a design that maintains New York's advantages in efficiently operating New York's grid.[56]

PJM's ICAP requirements do not currently require that units be available within ten minutes. Moreover, in some cases, the ability of units to be available within ten minutes rather than thirty minutes

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[55] Shanker Affidavit at ¶¶ 39-40.

[56] The experience of ISO-NE suggests that there may be substantial difficulties and time lags in modifying the PJM platform to support explicit reserves markets. New York consumers should not be forced to rely upon PJM's command and control mechanisms to provide non-spinning reserves for a few years for the sake of forcing the accelerated creation of a larger market. The California ISO's experience demonstrates that using command and control mechanisms to compensate for market design deficiencies can create major problems.

entails differences in staffing as well as controls. It is not feasible to extend ICAP requirements to mandate that particular New York generators maintain their capacity as ten minute reserves without compensation. This kind of command and control, non-market mechanism is unlikely to be successful in eliciting the needed additional supply of quick start capability, particularly in New York City.

2. Co-Optimization of Energy and Ancillary Services Commitments

The fundamental objective of New York's day ahead commitment software is the simultaneous optimization of day ahead energy, ancillary services, and additional capacity requirements to meet load scheduled in the day ahead market at least cost, while ensuring that sufficient capacity is available to meet forecast load. New York's SCUC software performs this critical, and complex, task by conducting a simultaneous optimization (minimization) of the cost of supplying energy, reserves (of all types), and regulation using market based offer prices supplied for each product from suppliers within and outside New York. This software technique, "co-optimization," yields the lowest overall cost to New York consumers for the supply of energy and ancillary services in the day-ahead market.

PJM employs a different method. There is no reserves market in PJM, so generators are not paid for providing reserves. Because all units are required to provide reserves services in real-time, reserves selection is a matter of simply counting the megawatts of excess capacity available after commitments to meet day-ahead load – the excess constitutes the reserves included in the day-ahead market. If the reserves "committed" in the day-ahead solution proves to be insufficient to meet the reliability requirements in-day, additional units are committed to supplement the reserves later in the day.

The difference in the methods of reserve commitment and compensation between New York and PJM is significant. New York would suffer severe financial and reliability consequences if the New York advantage were abandoned to use the PJM platform. Generators under PJM's rules have no

ability to charge uniquely for reserve services, and do not know if they will be used to provide reserves services from day to day. Each PJM generator must increase its ICAP or energy prices to recover the projected costs of providing reserves, whether or not their unit is actually called on for reserve duty. If PJM's rule were extended to New York, and every generator could be called on to provide reserves, ICAP suppliers in New York would likely increase ICAP and energy bids to cover the costs of reserve obligations, thereby increasing overall costs to New York consumers.

In contrast, under New York's system, reserves are acquired in markets where suppliers who choose to offer reserves recover their costs and required revenue through daily availability offers submitted to the market. They are further compensated for energy revenue they would otherwise have received through payment of lost opportunity costs ("LOC").

LOC payments are especially important to the combustion turbine owners who supply the non-spinning reserves in New York City and are an essential element to the reliability of New York City's electricity supply. The concept of LOC payments to non-spinning units does not appear to even exist in the PJM real time market, or even as a part of the day-ahead market. If New York is forced to abandon LOC payments in addition to its 10 minute non-spinning (combustion turbine-based) reserve market in favor of the PJM platform, energy costs and overall emissions would increase in the New York City area as energy from steam units will be held back to provide reserves while the combustion turbines run to provide energy.

New York's advantage in co-optimization of energy and ancillary services also allows the least cost reliable operation solution for the New York market by automatically optimizing unit commitments to provide regulating capacity at least cost. New York's SCUC system selects regulation suppliers at the same time as it selects suppliers of all services, and does so to produce the lowest overall cost for

the complete set of energy, reserve, and regulation products required for the next day. The PJM software commits generation to meet load and then, subsequent to the afternoon reliability commitment, calculates a day-ahead regulation price based on the bids of the capacity that has been committed. This sequential, California-style, regulation market would result in a more expensive unit commitment solution for New York and in reduced competition compared to New York's co-optimized approach given New York's resource mix. If imposed in New York, this approach would materially increase regulation costs.

Moreover, New York's co-optimization of capacity to meet load and provide regulation and reserves has in practice been essential in avoiding the exercise of market power in the New York regulation market, which is another advantage that should not be sacrificed in a rush to create a larger market. Obviously, any exercise of market power that cannot be avoided directly increases costs to New York consumers.

3. Resolution of Commitments Within Local Reliability Rules

The New York advantage in the ability of its software to commit capacity in the Day-Ahead Market to respect the critical operating limitations, or Local Reliability Rules, of New York City's complex transmission system must be maintained. The Local Reliability Rules mandated by the New York State Public Service Commission for New York City, and incorporated into New York's SCUC software, are materially different from normal bulk power system contingency rules. It will not work to simply put these Local Reliability Rules into the PJM model and solve them just like all the other contingencies PJM already solves.

New York City's Local Reliability Rules include many of the same kind of contingencies as in PJM's bulk power system, with two critical differences. First, New York's SCUC implements the

Local Reliability Rules to maintain reliability within New York City without unnecessarily increasing day-ahead energy prices. It does this by committing in-City capacity to meet second contingency conditions, but only scheduling energy to meet first contingency criteria. Second, New York implements the Local Reliability Rules by committing capacity to protect the 138 kV and 69 kV portions of the New York City network from contingency risks that are not separately considered during the energy scheduling pass. Simply adding the New York City lower voltage transmission network and the New York City contingencies to the list solved by PJM's security constrained commitment software would result in inappropriately high prices in eastern New York.

PJM has not demonstrated, and it does not appear, that PJM's day ahead market software can resolve for New York's Local Reliability Rules in a manner that will avoid severe financial consequences for New York City consumers. Again, New York has developed superior software and market tools to address the particular circumstances and challenges of New York's electric system, including the Local Reliability Rules. New York consumers should not be forced to pay more in order to get a PJM platform that does not meet their needs just to satisfy Option 3-M's arbitrary schedule.

Another, related advantage of the solutions to the New York City Local Reliability Rules is New York's method for allocation of uplift costs resulting from the commitment of units solely for Local Reliability Rule resolution. The New York implementation of the SCUC software allows for an automated computation of uplift costs on units committed solely for local reliability in New York City, and for those costs to be allocated, based on actual energy consumed, to the various load serving entities within the New York City zone. This ability is particularly important in light of the retail access programs in New York City because there is no more efficient alternative method by which to fairly allocate these costs.

4. Market Power Mitigation

The limited transmission and generation supply situation in New York City provided a ripe opportunity for the exercise of market power and had to be overcome before a workably competitive market structure could be created in New York City's electric system. The NYISO addressed this risk, at the same time that New York's state restructuring program resulted in the divestiture of generation assets in New York City, by developing a methodology that monitors conduct and mitigates generator bids pursuant to Commission approved criteria before making day-ahead generation schedules and establishing prices. This methodology avoids mitigating units that are not attempting to exercise market power.

The NYISO has also implemented a second Commission-approved mitigation tool, *i.e.,* its "Automated Mitigation Procedure," that represents another key advantage. This SCUC tool automatically, and consistently, monitors New York generators for conduct demonstrating an attempt to exercise market power, and separately evaluates the impact of the conduct before prices reflecting an abuse are posted. Only when Automatic Mitigation Procedure finds an impact are generator bids mitigated. PJM's day-ahead software solves for congestion around a set of "generic" constraints. When additional constraints are encountered, PJM mitigates the generators required to resolve the constraint to cost caps under the presumption that they have market power, but without making any finding of actual impact.[57]

The NYISO cannot evaluate the impact on New York's generators of imposing PJM-derived

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[57] As the NYISO has previously explained it is not accurate to present PJM's much less precise mitigation tools as if they were comparable to the NYISO's. The discussion at ¶ 46 of the Shanker Affidavit is incorrect when it draws this comparison.

cost-based mitigation to manage constraint solutions in light of the number of constraints in New York. Moreover, the NYISO cannot evaluate the impact on New York consumers of discouraging investments in New York City by exposing all generators to cost-based mitigation whenever there is congestion on other than a "generic" set of New York constraints. Clearly, New York's advantages in implementing fair in-City mitigation measures both encourage investment and protect consumers in New York City. Abandoning this advantage would increase costs for New York consumers and should not be forced on New York to meet an arbitrary schedule.

5. Multiple SCUC Pass Advantages

The multi-pass structure of the NYISO SCUC software is responsible for longer overall solution times than PJM. However, Dr. Shanker's implication that a multiple pass co-optimization software architecture is somehow inherently inefficient[58] is wrong because this structure permits the NYISO to address requirements that do not exist in PJM, and which would need to be addressed by a larger Northeast RTO that included New York. The multi-pass structure is a key advantage of the NYISO system, and must be retained to implement existing Commission requirements to restrain market power abuses, and to meet New York's unique reliability requirements.

One pass is needed solely to implement the Commission-approved market power mitigation measures for New York City; SCUC performs this task in the initial market power pass. This is a critical advantage of the New York software as the multi-pass approach avoids committing generation that is uneconomic after bid mitigation. The PJM software structure is workable given PJM's market

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[58] Shanker Affidavit at ¶¶ 49-50.

power mitigation needs, but that software structure was tested and failed during the NYISO's market trials, requiring the development of a multi-pass approach.[59]

There also needs to be a pass in which the New York City Local Reliability Rules are solved, as discussed above. It would be possible to solve the New York City Local Reliability Rules following SCUC, and to commit additional units after calculating day-ahead market prices, as PJM currently commits additional units for operating reserves. This approach would expose New York consumers to the risks of repeating the California mistakes of calculating day-ahead market prices based on a simplified grid model that is inconsistent with the real-time dispatch. Under the PJM platform, generation scheduled in the day-ahead market would be backed down at lower real-time prices that result from the commitment of additional generators for local reliability. The day-ahead scheduled generators would then, as in California, repurchase their day-ahead commitments at these lower real-time prices, creating huge uplift costs to consumers. Incorporating artificial incentives to create non-economic spreads between the day-ahead and real-time markets would also provide incentives for loads to purchase their energy in the real-time markets.

6. Precise Generator Operating Requirements and Dispatch to Real Time Constraints

Precise control of generation is essential to efficient and reliable operation of the heavily constrained New York transmission system. PJM's less stringent market rules and unit control philosophy work well in PJM's less congested and less divested environment, but would create very difficult operating problems if imposed in New York.

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[59] See Scott Harvey, William Hogan, Susan L. Pope, Andrew Hartshorn and Kurt Zala, "Report on Phase III Market Trials," September 17, 1999 p. 8 item 1 C.

New York's ability to precisely control generation dispatch allows New York to maximize the advantages of operating its transmission system close to physical limits with a low risk of damaging the system or having to shed load in the event of an unexpected equipment failure. Many parts of the New York transmission system are heavily congested, particularly in and around New York City. New York has developed the ability to closely monitor and control each generator to routinely operate the transmission system at the established operating limits, which are just below the physical limits. The NYISO is able to operate the New York system close to physical limits for two reasons: first, because the NYISO directly dispatches all units; second, and more important, because NYISO market rules provide strong incentives for generation to follow dispatch orders. These incentives take two forms: (i) payment rules that stop payment to generators for oversupply that will aggravate transmission limit violations; and (ii) penalties for generators that remain below scheduled levels beyond defined time limits.

These incentives, and the improved control performance they produce, are key advantages of the New York system. If New York were forced to abandon these advantages, it would also have to accept a diminution in achievable generator control precision as the outcome of a move to a PJM platform. This diminution, in turn, would force New York to reduce the operating limits of critical New York transmission facilities in order to provide a greater cushion between operating and physical limits and ensure continued secure operation. A reduction in operating limits, of course, is the same as an increase in inefficiency in the use of these assets. Because of this increased inefficiency in the transmission system, more expensive generating units will be required to run, increasing financial and environmental costs in New York, particularly in New York City.

7. Calculation and Allocation of the Cost of Incremental Losses

A key advantage of the New York SCUC and SCD systems is that these programs schedule generation to meet load while taking into account the cost of incremental losses. The PJM software does not. Forcing New York to adopt the PJM platform and ignore losses when making unit commitment decisions would artificially raise the cost of meeting load for New York consumers. These costs would be exacerbated in a Northeast RTO, where the potential distances between generation and load – and therefore the costs of incremental losses – would be much greater. New York consumers should not be forced to abandon this advantage and pay higher financial and environmental costs under the PJM platform just to meet an arbitrary schedule.

V. Conclusion

WHEREFORE, for the foregoing reasons, the New York Independent System Operator, Inc. ("NYISO"), respectfully requests that the Commission permit it to file this response and consider it when it makes its decision in this proceeding.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each party designated on the official service list compiled by the Secretary in Docket No. RT01-99-000, in accordance with the requirements of Rule 2010 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.2010 (2001).

Dated at Washington, DC this 6th day of November, 2001.

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