157 FERC ¶ 61,067
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Norman C. Bay, Chairman;
Cheryl A. LaFleur, and Colette D. Honorable.

PJM Interconnection, L.L.C. Docket No. ER16-2460-000

ORDER ACCEPTING PROPOSED TARIFF REVISIONS

(Issued October 31, 2016)

1. On August 22, 2016, PJM Interconnection, L.L.C. (PJM) submitted a filing, pursuant to section 205 of the Federal Power Act (FPA),[1] to revise Schedule 1 of the PJM Amended and Restated Operating Agreement (Operating Agreement) and the parallel provisions of Attachment K-Appendix of the PJM Open Access Transmission Tariff (Tariff).[2] In its filing, PJM proposes to modify the measurement and verification of load reductions made during emergency conditions by certain participants in its Emergency Load Response Program. As discussed below, we accept PJM's filing, effective November 1, 2016, as requested.

I. Background

2. In its Emergency Load Response Program, PJM compensates Curtailment Service Providers (CSPs) for Demand Resources that reduce load during emergency conditions when dispatched by PJM. PJM explains that CSPs are load response participants that participate in PJM's markets by obtaining load reductions from end-use customers. PJM explains that there are two options for participating in the Emergency Load Response Program: the Full Program Option and the Energy Only Option.

[1] 16 U.S.C. § 824d (2012).

[2] For convenience, this order cites to the relevant provisions of the Operating Agreement alone.

3. Under the Full Program Option, PJM explains, a CSP participates in both the PJM capacity market and the PJM energy market and receives both a capacity payment and an energy payment for a load reduction at a particular location during an emergency event.[3] PJM explains that for this program, the default verification method used to determine energy payments measures load reduction based on the difference between: (i) the load during the hour before the start of the Load Management Event[4] (i.e., dispatch); and (ii) the actual load during the resource's dispatch. PJM explains that this "hour before" method refers to using measured load during the hour immediately preceding the start of the first dispatch of the day as the Customer Baseline Load (CBL) for all dispatch hours during the operating day, including for multiple dispatches during the same operating day.

4. PJM states that, if the Full Program Option participant is also an Economic Load Response Participant,[5] PJM calculates the load reduction based on the difference between: (i) the measured CBL as defined under the resource's registration; and (ii) the actual load during the resource's dispatch. PJM uses this CBL to measure energy reductions as a proxy baseline that represents what the participant's load would have been absent the load reduction. PJM states that this "economic" CBL method is more accurate than the "hour before" method and is used when the information is available.

5. PJM explains that at various times it has experienced inefficiencies with the energy settlement procedures for Full Program Option participants, such as: (1) a lack of analytical robustness associated with the "hour before" method, especially for early morning hours or multiple daily dispatches; (2) a complicated after-the-fact CSP selection of whether to use the "hour before" method or the "economic" CBL method during a Load Management Event; and (3) the use of an "economic" CBL method

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[3] By contrast, under the Energy Only Option, PJM explains that a CSP only receives an energy payment for load reductions during an emergency event.

[4] Load Management Event shall mean: (a) a single temporally contiguous dispatch of Demand Resources in a Compliance Aggregation Area during an Operating Day; or (b) multiple dispatches of Demand Resources in a Compliance Aggregation Area during an Operating Day that are temporally contiguous. *See* PJM Operating Agreement, Section 1.3.11.02.

[5] PJM Transmittal at 3, note 6. An Economic Load Response Participant participates in the PJM energy market or ancillary services markets through reductions in demand. An Economic Load Response Participant is a separate category of resource, but may simultaneously register as a Demand Response resource (such as in the Full Option Program).

equivalent to maximum base load for Demand Resources that are primarily offered into the ancillary service markets, because it may under-represent actual load reductions.

II. PJM's Filing

6. PJM explains that it is proposing various changes to its Operating Agreement in order to help mitigate the issues noted above. First, it proposes to change the default method to measure and verify load reductions from the "hour before" method to a more robust method, namely the economic "three-day" CBL method that utilizes PJM's four-step Symmetric Additive Adjustment.[6] PJM explains that the three days can refer to a Saturday, Sunday/holiday, or weekday and the economic CBL measure is calculated differently depending on which days are involved because of differing load patterns on weekends and holidays. PJM explains that this "three-day" CBL method is more analytically robust and generally more accurate than the "hour before" CBL method because it takes into account different load patterns during the week, adjusts the CBL measure hour by hour, and adjusts the CBL for each dispatch during the operating day.

7. Second, PJM proposes to allow an alternative CBL to be used for Full Program Option locations without approved Economic Load Response registrations based on the existing alternative CBL rules for Economic Load Response registrations.[7]

8. Third, PJM proposes to change the CBL at Full Program Option locations with approved Economic Load Response registrations from the economic CBL at the time of settlement to the economic CBL prior to the Load Management Event.

9. Fourth, PJM proposes to clarify that PJM will not use the registered economic CBL when it is equal to maximum base load,[8] an approach that PJM claims can under-

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[6] The Symmetric Additive Adjustment is a four-step measurement that: (i) calculates the average usage over the three-hour time period before a Load Management Event; (ii) calculates the average usage over the three-hour time period that corresponds to the CBL; (iii) subtracts the results of step two from step one to determine the adjustment; and then (iv) adds in an adjustment to each hour in the CBL that corresponds to each Load Management Event hour. *See* PJM Operating Agreement, Schedule 1, section 3.3A.3.

[7] *Id.* at section 3.3A.2.01.

[8] Maximum Base Load is a CBL for weekdays that is calculated as the average of the daily minimum hourly loads during the event hours over the five most recent weekdays preceding the load reduction event. *See* PJM Manual 11: Energy & Ancillary Service Market Operations at 152.

represent load reductions, but instead will use the "three-day" CBL method along with PJM's Symmetric Additive Adjustment.

10. Finally, PJM proposes to add language to clarify that a CSP will only need to submit energy settlements for Load Management Events that occur outside of the specific availability period as defined in the Reliability Assurance Agreement, if the CSP has confirmed that the customers on the registration did take action to reduce load or if the registration reflects the entire group of mass market customers for which an energy settlement will either be submitted for all or none of the mass market customers. PJM also clarifies that the CSP will only need to submit energy settlements for each registration for Load Management Events that occur during the product specific availability period if the CPS also provides associated load data for each registration in order to calculate that registration's capacity compliance.

III. Notice of Filing and Responsive Pleadings

11. Notice of PJM's filing was published in the *Federal Register*, 78 Fed. Reg. 57,146 (2016), with interventions and protests due on or before September 12, 2016. Timely-filed motions to intervene were submitted by the entities noted in the Appendix-A to this order. Comments were submitted by the Advanced Energy Management Alliance (AEMA). A protest was filed by PJM's Independent Market Monitor (IMM). On September 27, 2016, answers to protests were filed by PJM and AEMA. The IMM filed an answer to PJM and AEMA on October 7, 2016.

A. Comments and Protests

12. AEMA supports PJM's filing, as submitted. The IMM agrees that PJM's filing is reasonable, will improve the accuracy of demand response energy settlements, and should be accepted. However, the IMM argues that, to ensure greater accuracy, the Relative Root Mean Squared Error (RRMSE) Test[9] for selecting the CBL should be extended to participants in the Full Program Option. This test is currently applied only to participants in the Economic Program. The IMM argues that PJM's proposal would create a discriminatory exception from the application of the RRMSE Test and argues that Demand Resources are less likely to register as Economic Resources in order to avoid the additional cost of conducting the RRMSE Test. The IMM argues that accurate measurement and verification for Demand Resources is necessary because Demand Resources are paid based on predetermined strike prices regardless of the locational

[9] The RRMSE is a metric that predicts the expected accuracy of a forecast methodology, such as the CBL, for a given resource by comparing the forecast of an historic period with the actual historic measurement observed during that same period. *See* PJM Transmittal Letter, Docket No. ER16-873-000, at 3-4 (February 2, 2016).

marginal price; the strike price is greater than or equal to $1,000/MWh for 94.7 percent of Demand Resources. The IMM argues that, while the Commission has previously addressed PJM's measurement and verification rules and rejected the IMM's protest regarding the utilization of the RRMSE Test for Full Program Option participants as unduly burdensome, there is no reason to continue to exempt these Demand Resources from the RRMSE Test, given its greater accuracy.

B. Answers

13. In its answer, PJM argues that the IMM's proposal attempts to re-litigate the issues addressed by the Commission – including a previous PJM proposal that CSPs electing to utilize the default CBL measure when calculating compliance during non-summer months not be required to utilize the RRMSE Test.[10] PJM explains that it did not change the requirement that exempts CSPs from running the RRMSE Test with this filing because the Commission found this construct to be just and reasonable in the April 1 Order. PJM argues that the IMM's only new argument is that not utilizing the RRMSE Test will reduce participation in PJM's Economic Load Response Program. PJM argues that its treatment of the RRMSE Test is consistent with the April 1 Order, that the inclusion of the RRMSE Test was never intended for any market participant utilizing the default CBL measure, and that the IMM presents no empirical evidence that Economic Load Response Program participation will drop as a result of this proposal. PJM argues that participation has actually increased since July 2016 based on variation in energy market prices. PJM argues that the Economic Load Response Program and the Emergency Load Response Program are not substitutes for one another but are instead complements, as each has different objectives and requirements.[11]

14. AEMA similarly responds to the IMM's protest, arguing that the CBL measure being applied for capacity compliance is the exact same measure that is being proposed for Emergency Energy Compensation, which does not require an RRMSE Test. AEMA also states that the IMM fails to explain how not using the RRMSE Test is a discriminatory exception, since AEMA argues that there is no mention of favored or un-favored market participants. AEMA also argues that reduced participation is speculative and states that less than ten percent of Demand Resources are Economic Load Response Participants only. AEMA argues that the IMM makes an illogical link between accuracy and harm to the market and offers no justification for how the market would be harmed without use of the RRMSE Test. AEMA further argues that the RRMSE Test is much

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[10] PJM Answer at 3-4 (citing *PJM Interconnection, L.L.C.*, 155 FERC ¶ 61,004, at P 35 (2016) (April 1 Order) ("it is just and reasonable for PJM to require a[n] [RRMSE] calculation only if such market participants elect to submit an alternative [CBL].")).

[11] PJM Answer at 4-5.

less critical for Economic registrations because it is applied as the forecast of what load would have been for large numbers of participants that are dispatched simultaneously and for which errors favorable or unfavorable to a given site will be averaged out, and differs for Economic Load Response Participants whereby each site can choose the price for which it is available for dispatch. Finally, AEMA argues that there is a significant operational challenge for the 16,000 Demand Resource registrations to renew Capacity Registrations each year, even without the RRMSE obligations.[12]

15. The IMM filed an answer in response to PJM and AEMA reasserting its earlier arguments.

IV. Procedural Matters

16. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2016), the timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure prohibits an answer to a protest unless otherwise ordered by the decisional authority. We accept the answers submitted by PJM, AEMA, and the IMM because they have provided information that has assisted us in our decision-making process.

V. Discussion

17. For the reasons discussed below, we accept PJM's filing, to become effective November 1, 2016, as requested. We agree with PJM that its proposed changes will improve the accuracy of PJM's Demand Response energy settlements and better align market incentives with efficient market outcomes. We also find that the economic "three-day" CBL method provides for an improvement over the "hour before" method because it uses a proxy baseline that represents what the load would have been absent the load reduction. We find that the economic "three-day" CBL method is more accurate because it takes into account different load patterns during the week, adjusts the CBL measure hour by hour, and adjusts the CBL for each dispatch during the operating day.

[12] AEMA Answer at 3-5. AEMA also explains that in order to establish an RRSME, demand response providers must obtain at least two months' worth of hourly load data for each registration, which is not insignificant when applied to hundreds or thousands of registrations.

18. The IMM's protest goes beyond the scope of PJM's proposed FPA section 205 filing, which is limited to the changes PJM has proposed and which the IMM concedes are an improvement over PJM's current Operating Agreement.[13]

19. In any case, the IMM largely reiterates arguments that the Commission considered and rejected in the April 1 Order,[14] arguments that we continue to find unpersuasive here. As the Commission stated in the April 1 Order, any benefits of improved accuracy resulting from using the RRMSE Test would not definitively outweigh the costs of applying the test to thousands of additional registrations, and the benefits of the RRMSE Test are less significant to CSPs of load management resources than for Economic Load Response Participants. Also, the IMM has not shown that this one factor is the predominant reason resources do not participate in the Economic Load Response Program.

The Commission orders:

PJM's proposed Operating Agreement and Tariff revisions are hereby accepted, to become effective November 1, 2016, as discussed in the body of this order.

By the Commission.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.

[13] Concerning the RRMSE Test, PJM did not revise its Operating Agreement regarding the application of this test, so the IMM's concern applies to the current, as well as the proposed Operating Agreement.

[14] April 1 Order, 155 FERC ¶ 61,004, at PP 36.

Appendix A

List of Intervenors

Advanced Energy Management Alliance
American Municipal Power, Inc.
Electric Power Supply Association
Exelon Corporation
Dominion Resources Services, Inc.
FirstEnergy Service Company
Monitoring Analytics, LLC, acting as PJM's Independent Market Monitor
NRG Power Marketing LLC and GenOn Energy Management, LLC
North Carolina Electric Membership Corporation
Old Dominion Electric Cooperative
PJM Industrial Customer Coalition
PJM Power Providers Group
PSEG Companies

Appendix B

Tariff Records Accepted
PJM Interconnection, L.L.C.
Intra-PJM Tariffs

OATT ATT K APPX Sec 8.8, OATT Attachment K Appendix Section 8.8 – Market Settlements, 1.0.0
OA Schedule 1 Sec 8.8, OA Schedule 1 Sec 8.8 - Market Settlements, 7.0.0