166 FERC ¶ 61,104 UNITED STATES OF AMERICA FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Neil Chatterjee, Chairman;

Cheryl A. LaFleur, Richard Glick, and Bernard L. McNamee.

PJM Interconnection, L.L.C.

Docket No. ER19-562-000

ORDER ACCEPTING OPERATING AGREEMENT REVISIONS

(Issued February 12, 2019)

- 1. On December 14, 2018, pursuant to section 205 of the Federal Power Act (FPA), PJM Interconnection, L.L.C. (PJM) filed revisions to its economic transmission planning process (market efficiency process) as set forth in Schedule 6, section 1.5.7, of its Amended and Restated Operating Agreement (Operating Agreement). These revisions address the generation assumptions that go into PJM's market efficiency analysis. As discussed below, PJM proposes to exclude from these assumptions, with exceptions, generation either with only an executed Facilities Study Agreement (FSA) or with an executed Interconnection Service Agreement (ISA) that is under suspension.
- 2. In this order, we accept the Operating Agreement revisions, to become effective February 13, 2019, as requested. Additionally, we direct PJM to submit, for informational purposes, a filing, as discussed below, within 60 days of the first annual market efficiency analysis performed under the proposed Operating Agreement revisions, and likewise submit the filing for the subsequent two annual analyses.

I. Background

3. Section 1.5 of Schedule 6 of PJM's Operating Agreement details the procedures for the development of the Regional Transmission Expansion Plan (RTEP).² Section 1.5.7 of Schedule 6 provides for the development of economic-based transmission enhancements or expansion under PJM's market efficiency process. For market efficiency planning, PJM uses a 24-month transmission planning cycle over the 15-year horizon of the RTEP. The

¹ 16 U.S.C. § 824d (2012).

² PJM Operating Agreement, Schedule 6, section 1.5 (Procedure for Development of the Regional Transmission Expansion Plan).

process is made up of two similar 12-month cycles to identify reliability-driven RTEP projects that may be accelerated or modified, and one 24-month planning cycle to provide enough time for the identification of transmission upgrades with longer lead times.³

4. The first step in the market efficiency planning process is the development of a set of assumptions that will be used in the market efficiency analysis.⁴ Prior to 2014, PJM's Operating Agreement excluded generation projects with only an executed FSA from the market efficiency analysis. In 2014, the Commission accepted PJM's proposed change to include generation projects with only an executed FSA in the market efficiency analysis. PJM explained that it wished to add this generation to reduce or eliminate "scaling," 5 whereby PJM increased assumed generation to meet future reserve requirements. Under the existing Operating Agreement, PJM includes in the market efficiency analysis, among other things, existing in-service generation and generation with (i) an executed ISA; (ii) an executed interim ISA for which an ISA is expected to be executed; or (iii) an executed FSA.⁷ After review with the Transmission Expansion Advisory Committee (TEAC), PJM may exclude generation with only an executed FSA on a case-by-case basis.⁸ PJM also includes in its assumptions the expected levels of new generation and generation retirements over at least the following 15 years. If PJM finds that its reserve requirement is not met in any of its future-year market efficiency analyses, it models adequate future generation based on type and location of generation in existing PJM interconnection queues and, if necessary, adds transmission enhancements to address congestion that arises from such modeling. Regarding these provisions that are contingent on the PJM reserve requirement not being met, PJM notes that the likelihood that the provisions are necessary for at least the next 15

³ PJM Transmittal at 10 (citing PJM Operating Agreement, Schedule 6, section 1.5.7(a)).

⁴ *Id*.

⁵ *Id.* at 3, n.3. PJM explains that generation scaling generally means adding additional megawatts to existing generation in the model, without considering a host of generator-specific factors, and without adding the actual generation projects in the PJM queue.

⁶ *Id.* at 4 (citing *PJM Interconnection, L.L.C.*, Docket No. ER14-1394-000 (April 23, 2014) (delegated order)).

⁷ *Id.* at 15. *See* PJM Operating Agreement, Schedule 6, sections 1.5.7(i)(iv) and 1.5.7(i)(vii).

⁸ *Id.* at 9. PJM states that the process to exclude generation on a unit-by-unit basis is intended for rare circumstances.

years is slim because the PJM capacity market has incented investment in new generation to the point that PJM is well positioned with a reserve margin well over the requirement.⁹

II. Proposed Operating Agreement Revisions

5. PJM states that based on the planning cycles for 2014-2015 and 2016-2017, it has found that it is over-including in its market efficiency assumptions generation that ultimately will not proceed to commercial operation, most of which is generation either with only an executed FSA or with an executed ISA that is under suspension. Furthermore, using annual data for the years 1999 through 2018, PJM finds that only about 36 percent of "completed" generation projects either with an executed FSA or with an executed ISA under suspension reach commercial operation. ¹² PJM states that, in comparison, about 70 percent of completed generation projects with an executed ISA or Wholesale Market Participation Agreement reach commercial operation. PJM states that the inclusion of generation either with only an executed FSA or with an executed ISA under suspension has led to a vast overstatement of the level of generation eventually reaching commercial operation.¹³ PJM explains that if it underestimates or overestimates the amount of queued generation that goes into service, the models that analyze the benefits of various market efficiency projects may be significantly skewed, which in turn may affect whether projects are included in or excluded from the RTEP. 14 Under the current Operating Agreement, PJM states, the vast overstatement of generation leads to a less accurate picture of the needs for

⁹ Id. at 20. See PJM Operating Agreement, Schedule 6, sections 1.5.7(i)(vii).

¹⁰ *Id.* at 2.

¹¹ In PJM's analysis, a "completed" generation project is one that withdrew or went into service. Based on Table 1 on page 13 of the PJM Transmittal, it appears that PJM calculates the 36 percent figure by dividing the number of in-service generation projects that have executed an FSA since 1999 by the number of those projects that are completed. The 36 percent figure does not represent the percentage of generation projects with an executed FSA that eventually went into service, which is the 25 percent figure in the second-to-last column of the table. A similar clarification applies to the 70 percent figure in Table 2 on page 14 of the PJM Transmittal.

¹² PJM Transmittal at 4, 14.

¹³ *Id.* at 12.

¹⁴ *Id.* at 2-3, 13-14.

market efficiency projects in the PJM region.¹⁵ PJM adds that including all projects either with only an executed FSA or with an executed ISA that is under suspension skews the market efficiency models towards including too much generation, which results in an unrealistic estimation of congestion.¹⁶

6. Consequently, PJM proposes first to exclude from its market efficiency assumptions all generation either with only an executed FSA or with an executed ISA that is under suspension; then, on a case-by-case basis, PJM will include such generation either based on a generator's specific circumstances or when PJM forecasts its system reserve margins to be below the installed reserve margin. In both cases, PJM states, it will exercise this flexibility in an open, transparent process in consultation with the TEAC, and will identify the specific generation projects based on articulable factors that justify their addition. PJM expects to invoke this unit-by-unit process rarely. Finally, PJM notes that during its annual update to its modeling assumptions, it will add to the assumptions any previously excluded generator with an executed FSA once it executes an ISA, as well as any generator with an executed ISA coming out of suspension.

III. Notice of Filing and Responsive Pleadings

7. Notice of the filing was published in the *Federal Register*, 83 Fed. Reg. 65,653 (2018), with interventions and protests due on or before January 4, 2019. On December 21, 2018, LSP Transmission Holdings, LLC (LSP Transmission), Central Transmission, LLC (Central Transmission), and ITC Mid-Atlantic Development, LLC (ITC Mid-Atlantic) filed

¹⁵ *Id.* at 5.

¹⁶ *Id.* at 15.

¹⁷ *Id.* at 22-23. PJM explains that in the unlikely event that the forecasted system reserve margin is below the installed reserve margin, PJM will add generators either with only an executed FSA or with an executed ISA that is under suspension based on their commercial probability (the likelihood, calculated by PJM, that the generator will reach commercial operation). PJM states that it will add generators in order of probability.

¹⁸ *Id.* at 19. PJM provides the following example of a rare situation in which it might propose to include generation either with only an executed FSA or with an executed ISA that is under suspension: when PJM fully expects that generation to come out of suspension, and that generation is impacting an identified constraint.

¹⁹ *Id.* at 6-7.

²⁰ *Id.* at 18.

a motion for a two-week extension of time until January 18, 2019, to file interventions and comments. By notice issued December 27, 2018, the deadline to file intervention and comments was extended to January 11, 2019.

- 8. Timely motions to intervene were filed by American Electric Power Service Corporation; American Municipal Power, Inc.; Dominion Energy Services, Inc.; Exelon Corporation; FirstEnergy Service Company; LSP Transmission and Central Transmission (LS Power); Monitoring Analytics, LLC (Market Monitor);²¹ NextEra Energy Transmission, LLC; North Carolina Electric Membership Corporation; Northern Indiana Public Service Company, LLC (NIPSCO); NRG Power Marketing LLC; and Public Citizen, Inc. ITC Mid-Atlantic filed an out-of-time motion to intervene.
- 9. LS Power and ITC Mid-Atlantic (collectively, Developers) jointly filed a protest. The Market Monitor and NIPSCO each filed comments identifying several concerns with the proposed revisions.

Protests and Comments

- 10. Developers argue that PJM's proposal is unjust and unreasonable, arguing that it offers no improvement in accuracy and will prevent PJM from appropriately identifying regional market efficiency needs.²² Developers agree that PJM should fix its planning models, but argue that PJM's proposal trades one set of errors for another.²³ Developers state that PJM's goal should be a planning model that represents the most likely future scenario, not the most expedient or easily implemented model.²⁴
- 11. Developers state that PJM admits its proposal will underrepresent prospective generation. They contend that the result will be either the failure to identify needed market efficiency projects where that new generation contributes to congestion, ²⁵ or the false

²¹ Monitoring Analytics filed an intervention acting in its capacity as the Independent Market Monitor for PJM.

²² Developers Protest at 1-2.

²³ *Id.* at 3, n.4. Developers state that if a single model does not provide that accuracy, PJM should consider developing an approach that looks at several models and weights them in a way that is supported, as Midcontinent Independent System Operator, Inc., does.

²⁴ *Id.* at 2-3.

²⁵ Developers also state that this failure harms consumers and affects their rates. *Id.* at 8, 10, 15.

assumption of market efficiency benefits from transmission additions where future generation could mitigate those assumed benefits.²⁶ Developers state that underrepresentation of generation thus will bias the planning models.²⁷

- 12. Developers also contend that inaccurate market efficiency planning models lead to an erroneous representation of cost allocation for transmission projects. They state that if PJM approves a market efficiency project while excluding generation that does not have a signed ISA, the impact of the unaccounted-for future generation on the cost allocation will be masked and will skew the cost allocation projections. Developers claim this same issue does not arise under the existing Operating Agreement provisions, contending that while overinclusion of early-stage generation could result in PJM's identifying projects that are unnecessary (with attendant cost allocation), PJM has pointed to no example to support such a claim. Further, Developers argue that if PJM did approve a transmission project based on the inclusion of generation with only an executed FSA, the potential that cost allocation would change if the speculative generation did not come to fruition would be fully visible to all interested parties because the status of the generation included in the models would be clearly visible.²⁹
- 13. Developers state that these cost allocation issues carry over to the state siting or approval process and raise additional risk a given project will not obtain state siting approval. They contend that those opposing the transmission project, or its prospective cost allocation, will seize on any deficiencies in PJM's analysis to cast doubt on the project. Developers state that while PJM may assert that the existing Operating Agreement provision creates similar doubt by over-including generation, PJM's discretion to remove speculative generation and the clearly visible generation remaining in the model at least allow all parties full insight into PJM's market efficiency determinations and a clearer *ex ante* picture of cost allocation under a variety of scenarios.³⁰ Developers assert that models that reflect the full range of potential generation additions provide a more accurate picture of the transmission

²⁶ *Id.* at 2.

²⁷ *Id.* at 6.

 $^{^{28}}$ Id. at 2 (citing Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities, Order No. 1000, 136 FERC \P 61,051 (2011), order on reh'g, Order No. 1000-A, 139 FERC \P 61,132, order on reh'g and clarification, Order No. 1000-B, 141 FERC \P 61,044 (2012) , aff'd sub nom. S.C. Pub. Serv. Auth. v. FERC, 762 F.3d 41 (D.C. Cir. 2014).

²⁹ *Id.* at 14.

³⁰ *Id.* at 16-17.

system to all market participants, other stakeholders, and state commissions. They claim that prospective generation with an executed FSA represents the best picture of generation to be added.³¹

- 14. The Market Monitor states that eliminating all generation either with only an executed FSA or with an executed ISA that is under suspension in the assumptions is inappropriate and will not better align PJM's market efficiency analysis with the realities of generation development in PJM's interconnection queue. The Market Monitor explains that the inclusion of market efficiency transmission projects in the planning process results in direct competition between generation and transmission to address congestion issues in the wholesale power market. The Market Monitor claims that the proposed exclusion of generation may make transmission projects look more economic and generation projects less economic. In such cases, it claims, the transmission projects will be more likely to be completed and will make the generating units less economic and thus contribute to the probability that the units will not be completed. The Market Monitor asserts that PJM has not explained why eliminating all this generation is consistent with an evenhanded approach to competition between generation and transmission. The Market Monitor states that rather than making piecemeal changes, PJM should more thoroughly evaluate the role of the market efficiency process and its impact on competition. It states that no further changes to favor transmission should be implemented prior to a complete review of the market efficiency process and approach.³²
- 15. The Market Monitor notes that PJM does not explain why it expects that an insufficient proportion of generation projects with only an executed FSA will continue to fail to reach commercial operation, particularly under the Capacity Performance market redesign. The Market Monitor also states that if PJM is going to incorporate uncertainty into its forecasts of future generation, it should consistently incorporate uncertainty into related areas such as forecast congestion, expected fuel costs, and the future cost of constructing transmission projects.³³
- 16. The Market Monitor states that given that the market efficiency approach is not identifying transmission projects needed for reliability but is defining whether PJM should permit a transmission project to displace generation, there is no reason to underestimate the level of generation. The Market Monitor believes that PJM should refine the metric used to

³¹ *Id.* at 14.

³² Market Monitor Comments at 2-3.

³³ *Id.* at 3. As an example, the Market Monitor notes that PJM does not discount forecast congestion in the same way that PJM proposes to discount generation in the queue, even though congestion also is unlikely to be realized at forecasted levels.

determine which units to include in the market efficiency analysis rather than merely eliminating all queue projects either with only an executed FSA or with an executed ISA that is under suspension. The goals, it contends, should be to eliminate only units that have an extremely low probability of completion, and to allow generation and transmission to compete on a more level basis.³⁴

- 17. NIPSCO, a transmission-owning member of Midcontinent Independent System Operator, Inc. (MISO) and a member of PJM, claims that the regional transmission planning processes in PJM and MISO have an impact on their interregional transmission planning process. NIPSCO requests that PJM work with MISO to perform an analysis of the impacts of PJM's proposal on interregional transmission planning, then present that analysis to stakeholders at the Interregional Planning Stakeholder Advisory Committee. 36
- 18. NIPSCO also states that it cannot accurately judge the potential impacts of PJM's proposal based only on the data in Table 3 of the PJM transmittal. NIPSCO claims that the data are from just one model from one of PJM's annual planning cycles, even though each year PJM uses four models. It requests a more robust analysis based on multiple years of data that includes information on the approval and non-approval of projects.³⁷
- 19. NIPSCO requests that PJM clarify the data used in Tables 1 and 2 of the transmittal.³⁸ Specifically, NIPSCO notes that Table 1 indicates that there were 885 executed FSAs from 1999 to 2018, while Table 2 indicates that there were 1,433 executed ISAs during this same time period. NIPSCO states that because all projects with a signed ISA would have a signed FSA, the data should show a number of FSAs that is greater than or equal to the number of ISAs. NIPSCO also provides an alternative calculation of the percentage of projects with only an executed FSA that reach commercial service, claiming

³⁴ *Id.* at 4.

³⁵ NIPSCO Comments at 1, 4.

³⁶ *Id.* at 5. To support its request, NIPSCO notes that Table 3 of the PJM transmittal relies on MISO/PJM constraints for 40 percent of its data.

³⁷ *Id.* at 5-6.

³⁸ As previously noted, these tables present the data with which PJM calculates the probabilities in which different classes of generation projects reach commercial service: Table 1 for generation projects with only an executed FSA, and Table 2 for generation projects with either an executed ISA or a Wholesale Market Participation Agreement.

that this alternative results in 45 percent of generation projects with only an executed FSA reaching commercial operation, a higher percentage than the one reported by PJM.³⁹

IV. <u>Discussion</u>

A. Procedural Matters

20. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2018), the timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding. We grant the late-filed motion to intervene of ITC Mid-Atlantic given its interest in the proceeding and the absence of undue prejudice or delay.

B. Substantive Matters

We accept PJM's proposed Operating Agreement revisions, to be effective 21. February 13, 2019, as requested. Prior to 2014, the Commission found just and reasonable an Operating Agreement provision similar to PJM's current proposal; PJM excluded generation projects with only an FSA from the market efficiency analysis. 40 In 2014, PJM instituted its current Operating Agreement provision, which includes generation projects with only FSAs, subject to their exclusion on a case-by-case basis after discussion with the TEAC. In this filing, however, PJM reconsiders its 2014 change, providing evidence that only about 36 percent of "completed" generation projects either with only an executed FSA or with an executed ISA under suspension reach commercial operation, 42 compared with 70 percent of completed generation projects with an executed ISA or Wholesale Market Participation Agreement that reach commercial operation. We find that the record evidence supports PJM's proposed return to its pre-2014 Operating Agreement provision, to change the default treatment of generation with executed FSAs or executed ISAs under suspension in the market efficiency analysis. Given that only 36 percent of completed projects with only executed FSAs or executed ISAs under suspension reach commercial operation, PJM has a reasonable basis to exclude those generation projects as a default in conducting its market efficiency analysis. PJM also proposes to allow generators with only executed FSAs or suspended executed ISAs to be included after review with the TEAC.

³⁹ NIPSCO Comments at 6. In its calculation, NIPSCO adds together the number of projects under construction with the number of projects in service; then it considers the percentage this sum represents of all "FSA projects."

⁴⁰ PJM Interconnection, L.L.C., 119 FERC ¶ 61,265 (2007).

⁴¹ See supra n.11.

⁴² PJM Transmittal at 4, 14.

Therefore, if parties believe that certain projects are likely to reach commercial operation, such that they should be included, they can bring that information to the TEAC and seek inclusion as is permitted through PJM's Operating Agreement revisions.

- 22. Although PJM acknowledges that its proposal will not ensure complete accuracy, the record reflects that it will help improve accuracy of PJM's transmission planning by excluding generation projects from the market efficiency analysis that PJM has demonstrated have historically had a lower than 50 percent probability of going into commercial operation. Developers' argument for retaining the status quo relies on the fact that PJM has not identified a market efficiency transmission project that PJM selected in the RTEP but subsequently found not to be needed because PJM had included generation in the market efficiency analysis that did not reach commercial operation. Such a showing is not necessary for us to find the instant proposal just and reasonable. While Developers note that underrepresentation of generation will bias the market efficiency analysis under PJM's proposal, PJM contends that there will be less bias under its proposal than there is currently. We find, looking at the record as a whole, that the proposed revisions will help improve the accuracy of PJM's market efficiency analysis. In addition, PJM states that during its annual update of its modeling assumptions, it will add to the assumptions used in the market efficiency analysis any previously excluded generator with only an executed FSA once it executes an ISA, as well as any generator with an executed ISA coming out of suspension.
- 23. The Market Monitor argues that PJM's proposal will benefit transmission projects in their competition with generation projects to address congestion issues, making transmission projects look more economic and generation projects less economic in the market efficiency analysis. We are not persuaded by the Market Monitor's arguments that PJM's proposal provides a significant benefit to transmission projects in the market efficiency analysis. Even if we were to assume it is true that the proposal will benefit transmission projects as compared with generation projects, we find just and reasonable PJM's exclusion of generators either with only an executed FSA or with an executed ISA under suspension because the improvements to the accuracy of PJM's market efficiency analysis, discussed immediately above, outweigh any advantage that the proposal may provide to transmission projects.
- 24. NIPSCO and the Market Monitor both take issue with PJM's data in support of its proposal. The Market Monitor states that PJM does not explain why it believes the historical trends on which it bases its proposal will continue. However, the Market Monitor provides no support for its argument that the 20-year trend line will not continue. Given the number of years included in PJM's analysis, we find it a reasonable basis on which to support its proposal. NIPSCO also suggests that PJM conduct a more robust analysis of the multiple years of data to help stakeholders better understand why the proposed change is warranted. The data PJM provides does include information on the number of projects that went into commercial operation, which we find sufficient to justify its proposal. NIPSCO further claims to have discovered a discrepancy between Table 1 and Table 2 of PJM's

filing because the total number of generators over 20 years with an executed ISA exceeds the number of generators with an executed FSA. NIPSCO, however, fails to recognize that Table 2 includes generators with an executed ISA or a Wholesale Market Participation Agreement, which does not necessarily require an executed FSA. Finally, we are not persuaded by NIPSCO's alternative calculation of the percentage of projects with an executed FSA that reach commercial service.

- 25. In addition, we find that the protesters raise several issues that are beyond the scope of this proceeding. For example, NIPSCO requests that PJM work with MISO to analyze the impacts of PJM's proposal on interregional transmission planning, then present that analysis to the Interregional Planning Stakeholder Advisory Committee. The Market Monitor calls for a complete review of PJM's market efficiency process and how it relates to competition between generation projects and transmission projects. The Market Monitor also states that if PJM were to implement its proposal, PJM should consistently incorporate uncertainty in related areas such as forecast congestion and expected fuel costs. Developers and the Market Monitor indicate that PJM should adopt a more intricate transmission planning model to increase accuracy in choosing market efficiency projects. While it may be worthwhile for PJM to work with its stakeholders to undertake some of the suggested analysis, the issue here is limited to whether PJM's proposed Operating Agreement revision is just and reasonable. For the reasons discussed above, we find that it is.
- Noting concerns raised regarding generation trends and visibility of the analysis, we 26. require PJM to file with the Commission an annual informational filing regarding executed FSAs, executed ISAs under suspension, and executed ISAs. First, PJM should include an update to the information presented in Tables 1 and 2 of the PJM transmittal in support of the proposed revisions. We find that such a requirement will improve transparency for stakeholders as PJM gains additional information and experience utilizing the new assumptions in the modeling component of its market efficiency analysis. Second, we also direct PJM to include in the annual informational filing the number of generators with only an executed FSA or an executed ISA under suspension that were included in the assumptions of the market efficiency analysis on a case-by-case basis after consultation with the TEAC. Lastly, PJM should also conduct a sensitivity analysis of its modeling of expected congestion included in the market efficiency study process under the revised Operating Agreement provisions, as compared to what would have been included prior to the revised Operating Agreement provisions. PJM should make the results of such analysis available in the same manner in which it makes other results available to stakeholders, and

⁴³ *Id.* at 14, Table 2. Also not necessarily requiring an executed FSA are generators with executed ISAs without network upgrade requirements.

⁴⁴ See supra n.39.

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should note in its annual informational filing completion and provision of such analysis. We direct PJM to submit this informational filing within 60 days of the first annual market efficiency analysis performed under this Operating Agreement revision, and to do likewise for the two subsequent annual analyses, for a total of three years.⁴⁵

The Commission orders:

- (A) PJM's proposed Operating Agreement revisions are hereby accepted, effective February 13, 2019, as discussed in the body of this order.
- (B) PJM is directed to submit an annual informational filing, as discussed in the body of this order.

By the Commission.

(SEAL)

Nathaniel J. Davis, Sr., Deputy Secretary.

⁴⁵ This filing will be for informational purposes and will not be noticed for comment or subject to Commission order.

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