180 FERC ¶ 61,073
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Richard Glick, Chairman;
James P. Danly, Allison Clements,
and Mark C. Christie.

PJM Interconnection, L.L.C. Docket Nos. ER22-2029-000

PJM Interconnection, L.L.C. EL22-32-000
(Consolidated)

ORDER ACCEPTING AND SUSPENDING TARIFF REVISIONS, ESTABLISHING PAPER HEARING PROCEDURES, AND CONSOLIDATING PROCEEDINGS

(Issued August 2, 2022)

1. On June 3, 2022, PJM Interconnection, L.L.C. (PJM), pursuant to section 205 of the Federal Power Act (FPA) and part 35 of the Commission's regulations,[1] filed proposed revisions to its Open Access Transmission Tariff (Tariff).[2] PJM explains that the proposed revisions modify the calculation of the Financial Transmission Right (FTR) Credit Requirement,[3] which establishes the amount of collateral that FTR market participants are required to provide in order to participate in PJM's FTR market (FTR Credit Revisions). As discussed below, we accept and suspend the proposed Tariff revisions for a nominal period, to become effective August 3, 2022, subject to refund, and

[1] 16 U.S.C. § 824d and 18 C.F.R. part 35 (2021).

[2] PJM Interconnection, L.L.C., Intra-PJM Tariffs, ATTACHMENT Q, OATT ATTACHMENT Q (45.0.1).

[3] "'FTR Credit Requirement' shall mean the amount of credit that a Participant must provide in order to support the FTR positions that it holds and/or for which it is bidding. The FTR Credit Requirement shall not include months for which the invoicing has already been completed, provided that PJM Settlement shall have up to two Business Days following the date of the invoice completion to make such adjustments in its credit systems. FTR Credit Requirements are calculated and applied separately for each separate customer account." *See* PJM, Intra-PJM Tariffs, E-F, OATT Definitions – E - F (33.0.0). (All Tariff Citations are to the PJM, Intra-PJM Tariffs database which will not be repeated in the citations; the redundant language in PJM's section titles also will not be included in the citations).

establish paper hearing procedures to develop a further record to determine whether the proposed revisions are just and reasonable. In addition, we consolidate this proceeding with the FPA section 206 proceeding initiated by the Commission in Docket No. EL22-32-000.

I. Background

2. PJM's Tariff establishes the FTR Credit Requirement for FTR market participants, which is currently determined on a portfolio basis considering five factors: (1) a financial exposure calculation for each FTR path based on its FTR Historical Value;[4] (2) the addition of an increment for portfolios considered to be undiversified ("undiversified adder"); (3) the application of a $0.10/MWh volumetric minimum charge; (4) the subtraction of Auction Revenue Rights (ARR) Credits in an FTR market participant's account; and (5) subtraction of the mark-to-auction value.[5]

3. On December 21, 2021, in Docket No. ER22-703-001, PJM filed the same FTR Credit Revisions[6] to its FTR Credit Requirement that included using a value-at-risk approach based on a historical simulation (HSIM) model with a 97% confidence interval (December 2021 Filing). The Commission rejected the FTR Credit Revisions on the basis that they were unsupported by the record.[7] The Commission found that the record in that proceeding failed to support PJM's proposed use of an HSIM model with a 97% confidence interval. The Commission stated that:

> [v]alidating the HSIM model under conditions different from how PJM proposes to use it, i.e., at a 99% confidence interval rather than a 97% confidence interval, does not demonstrate whether the HSIM model would operate as represented across extreme events or that the initial margin estimates would cover losses as expected. Furthermore, PJM has not provided sufficient information regarding how validation conducted at

[4] "For each FTR for each month, 'FTR Historical Value' shall mean the weighted average of historical values over three years for the FTR path using the following weightings: 50% - most recent year; 30% - second year; 20% - third year." *See* PJM, Tariff Definitions – E - F (31.0.0).

[5] *See* PJM, Tariff, Attach. Q § VI.C. *See also* PJM Transmittal at 8-9.

[6] Since the proposed revisions in this filing are identical to those submitted in the December 2021 Filing, we will use the same term to reference PJM's proposed revisions to its FTR Credit Requirement that were submitted in the December 2021 Filing and this proposal.

[7] *PJM Interconnection, L.L.C.*, 178 FERC ¶ 61,146 (2022) (February 2022 Order).

> the 99% confidence interval would apply at the 97% confidence interval. For example, while the Eydeland affidavit provides a general description of the validation, the exhibits provided are not sufficient to understand the test periods used.[8]

4. The Commission also found that PJM failed to demonstrate in the December 2021 Filing that its proposed FTR Credit Revisions were reasonably calibrated to ensure that market participants would be required to provide adequate collateral relative to the risks of their positions. The Commission stated that:

> The record establishes that PJM's proposed 97% confidence interval would result in a reduction in market participants' aggregate collateral commitments relative to the existing FTR Credit Requirement. Although a reduction in aggregate collateral requirements is not inherently problematic, PJM has not provided evidence or otherwise explained why its proposed FTR Credit Revisions will ensure adequate margin requirements for the riskiest market participants. Given that the proposed FTR Credit Revisions would result in lower aggregate collateral levels than PJM's current collateral levels, we find that the lack of support regarding how the HSIM model used at a 97% confidence interval establishes reasonably calibrated collateral levels for riskier portfolios means that PJM had not met its burden to show that the FTR Credit Revisions are just and reasonable, particularly in light of the significant recent defaults involving the FTR market. . . .[9]

5. The Commission also found that PJM's filing raised questions regarding whether PJM's existing FTR Credit Requirement remains just and reasonable and instituted a FPA section 206 proceeding in Docket No. EL22-32-000 to investigate the lawfulness of PJM's existing FTR Credit Requirement.[10] PJM was directed to make an informational filing either: (1) to show cause as to why its existing FTR Credit Requirement remained just and reasonable and not unduly discriminatory or preferential; or (2) to explain what changes to its Tariff it believes would remedy the identified concerns if the Commission were to determine that the existing FTR Credit Requirement had, in fact, become unjust and unreasonable or unduly discriminatory or preferential and, therefore, proceed to establish a replacement rate. The Commission provided that "if PJM prefers to propose

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[8] *Id.* P 32.

[9] *Id.* P 33.

[10] *Id.* PP 37, 39.

revisions to its Tariff on the FTR Credit Requirement, then it may do so pursuant to its applicable FPA section 205 filing rights."[11]

6. With regard to the replacement rate, in the February 2022 Order the Commission acknowledged a congruence of opinion across comments in support of an HSIM model along with other changes PJM proposed, such as: removing the undiversified adder; revising the $0.10/MWh volumetric minimum charge to apply after ARR credits; and mark-to-auction value adjustments. Therefore, the Commission encouraged parties to address the appropriate confidence interval for use in an HSIM model when responding to the show cause order, including the arguments raised in response to the December 2021 Filing that the evidence submitted by PJM supported the use of a 99% confidence interval and that a 99% or higher confidence interval is the industry standard for financial markets that use central clearing counter parties. The Commission encouraged commenters to address whether a 97% confidence interval may or may not be found just and reasonable in light of protestor arguments that suggested that: (i) the adoption of a 97% confidence interval causes the PJM market and its customers to subsidize collateral for FTR market participants who should alone absorb the risk as well as the benefit of those positions; and (ii) a 97% confidence interval may expose the entire PJM membership to potential default costs.[12] The Commission further encouraged discussion about a potential transition from a 97% confidence interval to a 99% confidence interval to avoid a potential reduction in participation in FTR markets, and whether any such transition period should be specified in the Tariff.[13]

7. On March 30, 2022, in Docket Nos. ER22-703-002 and EL22-32-001, PJM filed a request for rehearing of the February 2022 Order. On April 22, 2022, in Docket No. EL22-32-000, PJM filed a motion for a 60-day extension of time to make the informational filing required by the February 2022 Order. On April 28, 2022, a notice of extension of time was issued allowing PJM an additional 30 days to make its required informational filing.

8. On May 31, 2022, in Docket No. EL22-32-000, PJM filed a Motion to Hold Section 206 Proceeding in Abeyance, because PJM intended to submit a revised section 205 application that might "resolve[] the concerns that prompted the February 28 Order."[14] PJM also stated that an abeyance would afford PJM time to investigate further

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[11] *Id.* P 38.

[12] *Id.* P 40.

[13] *Id.* P 41.

[14] PJM Motion to Hold Section 206 Proceeding in Abeyance at 4 (PJM Abeyance Motion).

a concern noted in the February 2022 Order, but not addressed in the instant proceeding, about ensuring adequate collateral protection for "the riskiest market participants."[15] PJM stated that it had initiated a stakeholder process to address how best to apply PJM's existing Tariff tools to protect against participant-related risks, or whether further Tariff changes may be needed to support that objective. PJM asserted that preserving the section 206 proceeding would lend impetus to that effort, as well as providing a forum to address any proposed Tariff-change remedies that result from that effort. PJM stated that it expects to complete its stakeholder engagement by December 2022. PJM also stated that, during the pendency of the requested abeyance, PJM would provide updates on the status of PJM's stakeholder process every 60 days.

II. Summary of Filing

9. PJM explains that the FTR Credit Revisions proposed in this filing are the same revisions it submitted under FPA section 205 in the December 2021 Filing, which the Commission found unsupported in the February 2022 Order.[16] PJM explains that it presented its stakeholders with a number of different options as to how to respond to the Commission's show cause order and a super-majority supported refiling the HSIM model with a 97% confidence interval, with additional support.[17]

10. PJM explains that, like in the December 2021 Filing, the proposed FTR Credit Revisions in this filing include:[18] (1) replacing the current approach of calculating the potential payment exposure of each FTR path based on FTR Historical Value with an initial margin calculation from an HSIM model using a 97% confidence interval; (2) removing the undiversified adder;[19] (3) removing the component relating to the

[15] *Id.* at 4.

[16] PJM Transmittal at 2.

[17] *Id.* at 11-12. PJM also states that in a preliminary vote only 10.1% voted for filing with a 99% confidence interval as their first preference, and only 28.8% voted for filing with a 97% confidence interval and then moving to a 99% confidence interval in a year as their first preference. *Id.* at 3 n.9.

[18] *Id.* at 13-16. PJM explains that it makes no substantive changes to ARR credit revisions but that those provisions will be located in a single section instead of various sections of the FTR Credit Requirement. PJM states that it also includes ministerial adjustments to the mark-to-auction Tariff provisions to align with the default provisions of the Operating Agreement on the deadline for fulfilling a demand for additional collateral. *Id.* at 16.

[19] PJM explains that removing the undiversified adder removes a collateral requirement, based on PJM's analysis and expert advice that the adder is not correlated

long-term FTR credit recalculation, because prices will be routinely updated under the HSIM model;[20] (4) revising the $0.10/MWh volumetric minimum charge to apply after ARR credits or mark-to-auction value adjustments;[21] (5) revising the Tariff to explicitly provide that, at time of settlement, gains result in a decrease to, and losses result in an increase to, the FTR Credit Requirement;[22] and (6) revising the Tariff so that the FTR Credit Requirement can be increased or decreased according to the net mark-to-auction impact.[23] PJM requests that the Commission accept the FTR Credit Revisions effective August 3, 2022.

11. PJM states that the FTR Credit Revisions address the limitations of the current FTR Credit Requirement that PJM identified in the December 2021 Filing, which were cited in the February 2022 Order as the basis for opening an FPA section 206 proceeding. PJM states that the support for the FTR Credit Revisions is more clearly demonstrated in this filing through additional evidence and analyses that were not available for the December 2021 Filing. PJM further states that accepting the filing should address any concern that the current effective FTR Credit Requirement may be unjust and unreasonable.[24]

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with market risk, and thus could result in a margin that does not sufficiently protect against the risks of default. *Id.* at 13.

[20] PJM further explains that provisions regarding the long-term FTR credit recalculation will be replaced by real-time updates from the mark-to-auction adjustments in the HSIM model. *Id.* at 13-14.

[21] PJM also explains that adjusting the $0.10/MWh volumetric charge to apply after ARR credits or mark-to-auction credits ensures that the $0.10/MWh minimum floor operates as was intended, i.e., as a backstop to avoid a *de minimis* or net zero FTR Credit Requirement. *Id.* at 14.

[22] PJM explains that the revisions which explicitly provide for an adjustment for gains and losses at settlement is an inherent aspect of the current approach, and therefore the changes ensure the adjustment is not inadvertently eliminated under the proposed FTR Credit Revisions. *Id.* at 15.

[23] PJM explains that this increase or decrease would reflect when FTRs have become more or less valuable than when they were first transacted, and those positions result in incremental increase or reduction to the FTR market participant's market risk exposure. *Id.* at 16.

[24] *Id.* at 37.

12. PJM states that the February 2022 Order acknowledged that "[t]he principal disagreement among the parties" was the confidence interval used for the HSIM model.[25] PJM states that that concern also appears to be the Commission's principal basis for rejecting the December 2021 Filing, as the Commission found "that the record fails to support PJM's proposed use of an HSIM model with a 97% confidence interval."[26] PJM states that it has committed significant attention to this concern by engaging with stakeholders and conducting additional analysis. PJM states that it has determined that: (1) the 97% confidence interval provides most of the protection that a 99% confidence interval would provide; (2) a 99% confidence interval greatly increases collateral requirements relative to a 97% confidence interval; (3) the increased collateral under a 99% confidence interval falls disproportionately on FTR market participants that serve load; and (4) the incremental costs of using a 99% confidence interval, as compared to a 97% confidence interval, seemingly exceed the incremental benefit of using a 99% confidence interval. PJM also states that its analysis shows that the 97% confidence interval results in a collateral requirement that is reasonably calibrated to protect PJM and its Members[27] from FTR market participant defaults. In response to the February 2022 Order, PJM also explains that the 97% confidence interval is not the driver of reduction in collateral relative to the status quo.[28] PJM asserts that the Commission has never held that a 99% confidence interval is mandatory for credit modeling and that a confidence interval reflects judgement on the level of certainty desired for the model output. PJM argues that the choice of confidence interval for any particular analysis "goes beyond statistics, and implicates considerations of the relative value, and the relative cost, of obtaining that extra increment of certainty." Therefore, PJM contends, balancing these considerations for a confidence interval is inherent to the well-established FPA principle that there can be more than one just and reasonable rate.[29]

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[25] *Id.* at 17 (citing February 2022 Order, 178 FERC ¶ 61,146 at P 40).

[26] *Id.* (citing February 2022 Order, 178 FERC ¶ 61,146 at P 32, n.57).

[27] PJM explains later in its transmittal that Members includes FTR market participants. *Id.* at 19, n.52.

[28] *Id.* at 17.

[29] *Id.* at 18 (citing *New England Power Generators Ass'n, Inc. v. ISO New England Inc.*, 150 FERC ¶ 61,064, at P 19 n.36 (2015) (citing *PJM Interconnection, L.L.C.*, 119 FERC ¶ 61,063, at P 39 (2007) ("The Commission has permitted different just and reasonable rate designs reflective of particular system characteristics and stakeholder input. In this regard, we have stated our deference to regional preferences a number of times . . .as well as in our approval of rate designs for different regional markets.") (citing *Sw. Power Pool, Inc.*, 106 FERC ¶ 61,110, at PP 218-219 (2004);

13. PJM states that it has included in the instant filing a cost-benefit analysis for the FTR Credit Revisions that compares the incremental costs and benefits to Members[30] of employing a 99% confidence interval rather than a 97% confidence interval.[31] PJM explains that it defines Members' costs as "the financial cost of providing the higher collateral that results from the higher confidence interval." PJM also explains that it defines Members' benefits as "the incremental reduction in FTR Participant defaults—the costs of which are allocated to Members."[32]

14. With respect to costs, PJM explains that it assumed the same collateral estimates as in the December 2021 Filing, specifically an aggregate increase of $585.3 million in collateral under a 99% confidence interval relative to a 97% confidence interval.[33] PJM states that this translates to a 48.0% increase in collateral relative to a 97% confidence interval. PJM states that the cost of maintaining collateral of a given amount is the implicit cost of financing that amount, in this case, the cost of financing the increment of $585.3 million in collateral. PJM explains that, to reasonably bracket this cost of funds, it developed both a low and high estimated cost of capital. PJM states that it determined a low financing cost estimate using published London Interbank Offer Rates as of March 25, 2022, plus a spread to reflect FTR Market Participants' different credit ratings, based on PNC Bank revolving credit facility rates. For the high estimate, PJM states that it used an eight percent flat rate.[34] PJM states that the costs to FTR market participants to

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Sw. Power Pool, Inc., 111 FERC ¶ 61,118, at P 39 (2005); *Cal. Indep. Sys. Operator Corp.*, 109 FERC ¶ 61,301 (2004), *reh'g denied*, 111 FERC ¶ 61,337 (2005); *New England Power Pool*, 109 FERC ¶ 61,252 (2004), *clarified*, 110 FERC ¶ 61,003 (2005); *Midwest Indep. Transmission Sys. Operator, Inc.*, 127 FERC ¶ 61,109, at P 20 (2009) ("It is well established that there can be more than one just and reasonable rate."); *N. Y. Indep. Sys. Operator, Inc.*, 126 FERC ¶ 61,320, at P 40 (2009) ("there can be more than one just and reasonable planning process and [different regions] are not required to have identical planning processes.")).

[30] PJM states that it uses the term "Members" for the cost-benefit comparison because all FTR market participants are Members, and any payment default by a party subject to the FTR Credit Requirement is recouped via default allocation assessments on Members. *Id.* at 19-20, n.52.

[31] *Id*. at 19.

[32] *Id*.

[33] *Id*. (citing February 2022 Order, 178 FERC ¶ 61,146 at PP 8, 33).

[34] *Id*. at 21.

use a 99% confidence interval instead of a 97% confidence interval in PJM's analysis are $22.4 million under the low estimate or $46.8 million under the high estimate.

15. To determine the benefits, PJM explains that it estimated failure rates under the 99% and 97% confidence intervals and calculated the resulting collateral shortfalls.[35] PJM states that the failure rate refers to the frequency with which collateral posted fails to cover an FTR market participant's losses, and the shortfall is the dollar gap between that posted collateral and the FTR portfolio losses. PJM explains that, generally speaking, the HSIM model with a 99% confidence interval is expected to have a one percent failure rate, and an HSIM model with a 97% confidence interval is expected to have a three percent failure rate. PJM asserts that its back-testing has confirmed these expectations for PJM's HSIM model.[36] Comparing the shortfall estimates, PJM states that the HSIM model with a 97% confidence interval results in an additional yearly shortfall of $27.5 million relative to a 99% confidence interval.[37] PJM states, however, that this does not mean Members must pay the cost of a $27.5 million default because the shortfall at issue is only the difference between FTR market participants' portfolio losses and their collateral resulting specifically from the FTR Credit Revisions. PJM explains that "cost to Members will depend on how much of that shortfall results in an FTR Participant payment default."[38]

16. PJM witness Drauschak contends that the relationship between collateral shortfalls and defaults is difficult to predict but that "it is safe to say that shortfalls. . . are much more common" than defaults.[39] PJM states that, as an example, it observed failure rates where portfolio losses exceed the collateral required under the current FTR Credit Requirement of around eight percent to 11%. Drauschak states that, by contrast, FTR payment defaults "are infrequent, although, because PJM strives to avoid any payment defaults, each one that occurs is highly notable."[40] PJM states that, "to reflect the generally low incidence and extent of payment defaults relative to FTR payment

[35] *Id.* at 22.

[36] *Id.* at 22 (citing Drauschak Aff. at 11; Eydeland Aff. at 13).

[37] *Id.* at 22-23.

[38] *Id.*

[39] *Id.* at 23 (citing Drauschak Aff. at 16).

[40] *Id.* (citing Drauschak Aff. at 18).

defaults,"[41] its cost-benefit analysis uses both a five percent and 10% factor to relate default amounts to shortfall amounts.

17. PJM also states that, because this percentage is uncertain, it also generated a percentage value "at which a net benefit would become a net cost." PJM states that this 81% is the calculated percentage of $27.5 million that corresponds to the $22.4 million low estimate of costs for Members to finance the incremental collateral required under a 99% confidence interval.[42] PJM states further that "[w]ith a more plausible estimate that the resulting payment default would equal 10% of a shortfall in collateral under the [FTR Credit Revisions], Members' aggregate benefit of $2.7 million in avoided default allocations is well below the $22.4 million low estimate of their aggregate cost of funding the additional collateral."[43] PJM concludes that its cost-benefit analysis shows that the cost to individual Members from using a 99% confidence interval is likely to exceed the benefit to them.

18. PJM states that its cost-benefit analysis also evaluated the impacts on each sector. PJM explains that it estimated the collateral financing costs and the default allocation avoidance benefits for end-use customers, electric distributors, generation owners, transmission owners, and other suppliers, which PJM further divided into load serving entities, financial traders, and remaining other suppliers. PJM states that its analysis shows that all sectors experience collateral increases that exceed benefits, and entities that serve load see the largest percentage increase in their collateral, when moving from a 97% to a 99% confidence interval.[44]

19. PJM also states that it supplemented its previous analysis of failure rates through back-testing the HSIM model[45] to estimate collateral that would have been collected for

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[41] *Id*. (citing Drauschak Aff. at 16-17).

[42] *Id.* at 23-24.

[43] *Id.* at 24.

[44] PJM states that entities self-identifying as load serving entities within the "other suppliers" sector would experience an increase of 55.3% in required collateral. PJM states that other sectors including load serving entities see a much higher increase in required collateral under a 99% confidence interval: electric distributors experience a 57.5% increase, generation owners experience a 63.0% increase, and transmission owners experience a 114.1% increase. *Id.* at 26-27.

[45] PJM states that back-testing the HSIM model involves applying the FTR Credit Revisions to a past period to estimate: (1) how much collateral would have been required for one or more past auctions; and (2) how often portfolio losses would have exceeded required collateral based on historical pricing. PJM states that "[i]n the December 2021

the February and March 2022 FTR auctions if the FTR Credit Revisions had been in place. PJM explains that the failure rate would have been 3.6% (11 failures over 308 portfolios) with a $2.3 million shortfall in the February 2022 auction, and would have been 3.0% (9 failures over 301 portfolios) with a shortfall of $0.6 million for the March 2022 FTR auction. PJM states that back-testing shows reductions in the estimated dollar shortfall under the FTR Credit Revisions from the status quo of 94%, or $41.7 million to $2.3 million, for the February 2022 auction and 80%, or $3.1 million to $0.6 million, for the March 2022 auction, even though the FTR Credit Revisions result in overall lower collateral levels than the status quo for each auction. PJM argues that the FTR Credit Revisions are reasonably calibrated and better tailored than the current FTR Credit Requirement to protect against the risk of FTR market participant payment default due to FTR portfolio risk.[46]

20. PJM states that it also analyzed the collateral reduction from the status quo estimated for the FTR Credit Revisions, which was observed for an HSIM model with both a 97% and 99% confidence interval. PJM states that it found that the collateral reduction was driven by the elimination of the undiversified adder and reducing the FTR Credit Requirement according to positive mark-to-auction adjustments, not by the choice of the 97% confidence interval. PJM states that "the reduction in collateral associated with these two drivers is not exposing PJM and Members to an increased exposure to FTR portfolio losses." PJM explains that, based on its back-testing for the February and March 2022 auctions, removing the undiversified adder reduces collateral by $894 million in the February 2022 auction and by $841 million in the March 2022 auction. PJM explains further that decreasing the FTR Credit Requirement when mark-to-auction value is positive reduces collateral by $848 million in the February 2022 auction and by $661 million in the March 2022 auction.[47]

21. PJM states that eliminating the undiversified adder and reducing the FTR Credit Requirement by positive mark-to-auction adjustments does not increase risk exposure for PJM and its Members. PJM explains that the GreenHat Report[48] recommended that the undiversified adder be removed because the collateral required by the undiversified adder is not well correlated with the market risk from the FTR paths that comprise a participant's portfolio. PJM states that the disconnect it found between the higher

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Filing, PJM reported that it 'back-tested results for 10,724 zonal path prices' and found only 139 failures, 'indicating a failure rate of .013,' i.e., 1.3%." *Id.* at 27-28 (citing December 2021 Filing, Docket No. ER22-703, Eydeland Aff. at 12).

[46] *Id.* at 27-29.

[47] *Id.* at 30-31.

[48] *See* GreenHat Report, app. at 1 (Recommendation A).

collateral and high failure rate under the current FTR Credit Requirement illustrates this point from the GreenHat Report. PJM further states that the February 2022 Order cited the undiversified adder as a reason the current FTR Credit Requirement may be unjust and unreasonable.[49] PJM also explains that reducing collateral requirements according to positive mark-to-auction value, i.e., an increased value of the FTR portfolio, recognizes that an FTR portfolio's market risk exposure has decreased and inherently reduces aggregate collateral. PJM explains that the downward adjustment to collateral in response to an incremental reduction in the portfolio's risk exposure is reasonable and consistent with the risk calibration objective of the February 2022 Order.[50]

22. With respect to the February 2022 Order's concerns regarding the lack of validation of the HSIM model at 97%, PJM states that it has submitted a summary of the independent auditor KPMG's validation of the HSIM model that uses a 97% confidence interval. According to PJM, KPMG found that "[t]he overall results have demonstrated that the [initial margin] methodology historically behaves as expected under 95%, 97%, and 99% confidence intervals."[51]

23. PJM also states that the concerns raised in the February 2022 Order about potential market disruption from using a 99% confidence interval are moot because PJM is not proposing to use a 99% confidence interval. PJM further states that, since February 2022, it has provided FTR market participants calculations of their collateral that would be required under the HSIM model with a 97% confidence interval.[52]

24. Finally, PJM explains that while the FTR Credit Revisions are an outgrowth of the comprehensive review and investigation of FTR credit reforms following the GreenHat default, the FTR Credit Revisions are "intended and designed to address the distinct issues of FTR *portfolio* risk, as opposed to FTR *participant* risk." PJM states that it has multiple separate tools to address the latter risk, including "Know Your Customer"

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[49] PJM Transmittal at 33 (citing February 2022 Order, 178 FERC ¶ 61,146 at P 40).

[50] *Id.* at 33-34.

[51] The Drauschak Affidavit explains further that PJM requested that KPMG validate the HSIM model, which included evaluating the model's conceptual soundness and development, testing procedures and results, monitoring and plan, as well as a comparison of modeling framework with leading industry practices. Drauschak explains that validating the model is independent of a particular confidence interval, but states that PJM requested KPMG to validate the HSIM model at a 97% confidence interval. *Id.* at 35. (citing Drauschak Aff. at Exhibit F).

[52] *Id.* at 36-37.

reforms, restricted timelines for collateral call payments, enhanced material adverse change language, required audited financials, the implementation of financial models, the addition of unreasonable credit risk as a basis for collateral calls, and the ability to limit and suspend market participation.[53]

25. PJM explains that its June Filing is not intended or designed to address concerns raised by the February 2022 Order about "the riskiest market participants." PJM states that, beyond participant-specific risks, this remaining concern also implicates the "tail risk" that would occur under any FTR Credit Requirement with a non-zero failure rate, whether that is approximately 11% under the current FTR Credit Requirement, three percent for an HSIM model with a 97% confidence interval, or 1% for an HSIM model with a 99% confidence interval. Therefore, PJM states, such a concern is appropriately addressed in the section 206 proceeding, not in this proceeding. PJM states the Commission should keep the section 206 proceeding open, but in abeyance, while PJM and its stakeholders work on solutions to this problem.[54]

III. Notice of the Filing and Responsive Pleadings

26. Notice of PJM's filing was published in the *Federal Register*, 87 Fed. Reg. 35,541 (June 10, 2022).

27. Timely interventions were filed by PJM Industrial Customer Coalition, Calpine Corporation, Public Citizen, Inc., Constellation Energy Generation, LLC, Rockland Electric Company, American Electric Power Service Corporation, NRG Power Marketing LLC and Midwest Generation LLC, Delaware Division of the Public Advocate, Office of the People's Counsel for the District of Columbia, Maryland Office of People's Counsel, and Boston Energy Trading and Marketing LLC.

28. Timely motions to intervene and comments were filed by Monitoring Analytics, LLC, acting in its capacity as the Independent Market Monitor for PJM (Market Monitor), Organization of PJM States, Inc. (OPSI),[55] Citadel FNGE Ltd (Citadel),

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[53] PJM states that portfolio risk refers to the risk that market conditions, such as the actual cost of congestion on FTR paths purchased in an auction, will be such that the FTR participant suffers a substantial loss on the FTRs it purchased. PJM states that participant risk refers to the risk that a participant will prove incapable of meeting its obligations in the PJM market due to financial strength (or lack thereof) specific to the participant. *Id.* at 35-36.

[54] *Id.* at 38.

[55] This includes the following OPSI members: Delaware Public Service Commission, District of Columbia Public Service Commission, Illinois Commerce Commission, Indiana Utility Regulatory Commission, Kentucky Public Service

Appian Way Energy Partners, LLC (Appian Way), Elliot Bay Energy Trading, LLC (Elliot Bay), Energy Trading Institute (ETI), Joint Commenters,[56] Joint Load Servers,[57] and the PJM Power Providers Group. An out-of-time motion to intervene was submitted by North Carolina Electric Membership Corporation and Southern Maryland Electric Cooperative, Inc. PJM, the Market Monitor, and Joint Load Servers filed answers. OPSI also moved to lodge its comments and answer, and the expert testimony accompanying PJM's December 2021 Filing in this record.

29. Supportive commenters state that PJM's FTR Credit Revisions demonstrate a significant drop in the failure rate of FTR portfolios and reduced potential collateral shortfalls, as compared to the status quo. Supportive commenters explain that this shows that the proposal is reasonably calibrated to ensure adequate collateral based on portfolio risk, while avoiding excessive costs from overcollateralization. In response to the Commission's concern that overall collateral requirements may be lower under the proposed methodology, Appian Way explains that the reduction is driven by factors other than the HSIM model and confidence interval, such as the mark-to-auction gains and removal of the undiversified adder.[58] Appian Way and Elliot Bay argue that the fact that the proposal reduces overall collateral in addition to portfolio failure rates should be seen as evidence that the proposal does a better job targeting portfolio risk and is just and reasonable.[59]

30. Supportive commenters also note that the FTR Credit Revisions were supported by a large majority of PJM members in the stakeholder process, including those that would bear the costs of any potential defaults. Joint Load Servers further state that for

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Commission, Maryland Public Service Commission, Michigan Public Service Commission, New Jersey Board of Public Utilities, North Carolina Utilities Commission, Pennsylvania Public Utility Commission, Tennessee Public Utility Commission, Virginia State Corporation Commission, and Public Service Commission of West Virginia. OPSI states that these entities approved its protest on June 24, 2021, and that the Public Utilities Commission of Ohio abstained in the vote on this filing.

[56] Joint Commenters include DC Energy, LLC, American Municipal Power, Inc., LS Power Development, LLC, Saracen Energy East LP, and Shell Energy North America (US), L.P.

[57] Joint Load Servers include Constellation Energy Generation, LLC (CEG), Old Dominion Electric Cooperative (ODEC), Duke Energy Ohio, Inc. and Duke Energy Kentucky, Inc. (together, Duke Energy), and NextEra Energy Marketing, LLC (NextEra).

[58] Appian Way Comments at 4.

[59] *Id.* at 5; Elliot Bay Comments at 10.

CEG, one of the largest suppliers in PJM, default allocations are typically borne by CEG and its shareholders in the short term, but in the long term, default probability and magnitude are factored into pricing offered to customers in the future. Joint Load Servers state that NextEra is similarly impacted as a large load serving entity in PJM, while for Duke Energy and ODEC, default allocations may be borne by end use customers or member customers. Joint Load Servers state that high collateral costs impact all FTR market participants, potentially impeding market liquidity and price transparency by reducing the overall number of market participants and bidding activity. Joint Load Servers state that they face exposure to both potential costs of an insufficiently collateralized default along with the costs of providing FTR credit support, and that the FTR Credit Revisions strike a reasonable balance between those costs.[60]

31. Supportive commenters also agree that PJM has demonstrated that the costs of using an alternative 99% confidence interval exceed the benefits, relative to implementing the proposed 97% confidence interval. ETI notes that the increased collateral associated with the 99% confidence interval disproportionately falls on participants that serve load, as measured by relative percent increase in collateral.[61] Joint Load Servers argue that the Commission should not burden load servers and their customers with these additional costs for which they will receive less than commensurate benefits.[62]

32. OPSI and the Market Monitor argue that PJM's proposed use of a 97% confidence interval is unjust and unreasonable. OPSI and the Market Monitor express concerns about the harm associated with the socialization of default risk that can result from undercapitalized participation in PJM's FTR market and argue that the "industry standard" HSIM model at a 99% confidence interval should be used instead.

33. OPSI and the Market Monitor contend that PJM's proposed use of a 97% confidence is substandard and not justified by its new cost-benefit analysis. The Market Monitor argues that PJM has not justified its election of a 97% confidence interval when the International Swaps Dealers Association's Standard Initial Margin method for HSIM models uses a 99% confidence interval. As a result, the Market Monitor contends, FTR market participants will not be required to pay a significant portion of the cost of their portfolios' potential default risk and, relative to the 99% confidence interval, the entire PJM membership will provide a subsidy of collateral-related costs to FTR market participants. The Market Monitor contends that

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[60] Joint Load Servers Comments at 5.

[61] ETI Comments at 8.

[62] Joint Load Servers Comments at 12-13.

the risk of default should be borne by the FTR holders who benefit from their FTR positions and not by PJM members who have nothing to do with such positions.

34. The Market Monitor argues that PJM has not provided a reasonable basis for its contention that the costs of using a 99% confidence interval exceed its added benefits. The Market Monitor explains that PJM compared the HSIM determined initial margin collateral requirements of the study period under both the 97% and 99% confidence intervals to the actual FTR portfolio losses in the study period. The Market Monitor argues that this cost-benefit analysis confuses a single possible event (the actual, historically realized FTR portfolio losses) with the range of possible events (the possible realized FTR portfolio losses that could have resulted in the period.[63] The Market Monitor argues that, based on the historical numbers used in the HSIM model, the realized shortfalls in excess of collateral could have been much higher than what was realized historically in the period. The Market Monitor contends that this is not a parallel or correct comparison of costs and benefits and that a correct comparison would examine the estimated benefit at the 97% and 99% confidence intervals to the HSIM collateral costs for confidence intervals of 97% and 99%.[64]

35. The Market Monitor also argues that no clearinghouse would design an initial margin collateral requirement that assumes only 5% or 10% of portfolio shortfalls would result in a default. The Market Monitor states that the objective of the HSIM approach is to have sufficient initial margin collateral to cover a portfolio shortfall for a designated confidence interval, since any shortfall represents a potential default that puts the central clearinghouse and its members at risk. The Market Monitor asserts that the objective of the HSIM approach is not for the clearinghouse and its members to bear the costs of that collateral for the benefit of the market participants.[65]

36. The Market Monitor and OPSI also disagree with PJM's assertion that the increased collateral required by a using a 99% confidence interval falls disproportionately on FTR market participants that serve load. In response to PJM's claim, the Market Monitor contends that PJM's position indicates a systematic problem that would cause a disproportionate credit requirement (credit requirements not in line with expected risk) for every confidence interval, and not just the 99% confidence interval. OPSI asserts that: (1) it is unclear how PJM determined the cost per member sector; (2) PJM incorrectly assumes that no members who serve customers also hold positions for profit making purposes; and (3) some members may have cross-sector interests but opt to

[63] Market Monitor Protest at 7.

[64] *Id.* at 7-8.

[65] *Id.* at 8.

identify under a specific membership sector for voting purposes, further complicating this analysis.[66]

37. OPSI states that beyond sector interests, it is not clear how much customers would actually save if PJM collected less collateral and how much risk they would assume if load serving entities pass on costs to cover the default to ratepayers. OPSI asserts that it is the size of any possible default that continues to represent a significant downside risk to retail customers, and not the profitability of FTR market participants. OPSI argues that this risk is not mitigated through PJM's Know Your Customer reforms, which were already in place at the time of the Hill Energy default[67] and were in PJM's governing documents when the Commission found PJM's previous 97% HSIM model proposal not just and reasonable.[68]

38. OPSI quotes PJM's expert consultants from the December 2021 Filing who stated that by missing 3% of the outlying events of the past using a 97% confidence interval when setting a protective initial margin level, the 97% confidence interval choice knowingly exposes the FTR markets to foreseeable price moves that are not covered by the level of required initial margin. OPSI argues that even while the market proceeds without any defaults, the PJM market as a whole and members of PJM (including non-participants in the FTR market) are effectively providing credit support to FTR market participants by agreeing to backstop losses resulting from a failure in FTR market margin policy.[69] OPSI states that the FPA is a consumer protection statute and that the Commission cannot decide that a market construct is just and reasonable based on whether it protects PJM and its members without also analyzing how PJM and its members protect customers.

39. OPSI states that this concern, coupled with PJM's former independent chief risk officer calling attention to the extreme volatility and illiquidity in the markets, not seen since the 2008 recession, further validates the need to adopt the universally recognized minimum 99% confidence interval employed by Derivatives Clearing Organizations and other Market Risk Managers (e.g., ERCOT, Nodal Exchange, and ICE). OPSI also argues that PJM's deference to certain stakeholders, even on proposals PJM

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[66] OPSI Protest at 6.

[67] *See* Monitoring Analytics, LLC, *Q1 2022 State of the Market Report for PJM* at 771 (https://www.monitoringanalytics.com/reports/PJM_State_of_the_Market/2022/2022q1-som-pjm.pdf).

[68] *Id.* at 6-7.

[69] *Id.* at 7.

acknowledges are substandard, raises concerns of a systemic misalignment with the principles in Order No. 2000, and that this misalignment speaks further to the unjustness and unreasonableness of the current proposal.[70]

40. Citadel argues that PJM's current FTR Credit Requirement and the proposed FTR Credit Revisions provide inadequate protection against default. Citadel argues that even with PJM's proposal in place, it is unclear if PJM's rules would have prevented Hill Energy's default. Citadel contends that the only way to protect PJM members against unforeseen risks is to augment the credit policy with adequate capitalization requirements for entities holding or trading FTRs. To that end, Citadel requests that the Commission hold a technical conference on requirements that would only allow well-capitalized firms to directly face the market with something like the minimum capitalization requirement faced by futures commissions merchants, a class of firms defined under the US Code and registered with the Commodity Futures Trading Commission (CFTC).[71]

41. PJM argues that the Market Monitor has not demonstrated that a 99% confidence interval is the only just and reasonable approach or otherwise demonstrated that PJM's proposed FTR Credit Revisions are per se unjust and unreasonable.[72] PJM states that there are structural differences between the Commission-regulated FTR market and CFTC-regulated exchanges, and that there is no single approach to the choice of confidence interval in an HSIM model, especially when the HSIM is just one component of the proposed FTR Credit Revisions.[73] PJM argues that the Market Monitor assumes away the balancing that is inherent in any choice of confidence interval that sets collateral requirements for market participation. PJM states that using a 99% confidence interval would still leave a tail risk on the market and still involves a policy choice to shift that risk away from the market participant, relative to a confidence interval above 99%.[74]

42. In response to OPSI, PJM contends that its cost-benefit analysis considers consumer interests;[75] specifically, the analysis considered the financial costs of maintaining collateral and the benefit of avoiding default allocation assessments. PJM

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[70] *Id.* at 8-9.

[71] Citadel Protest at 2-4, 6.

[72] PJM Answer at 5-7

[73] *Id.* at 6.

[74] *Id.* at 7.

[75] *Id.* at 8-9.

further states that both the costs of maintaining collateral and the potential costs from default allocations for load serving entities may be passed on to consumers. PJM also states that there is broad overlap between PJM Members that participate in FTR markets and PJM Members that face default allocations, and that the overlap is compatible with the tests the courts have adopted for cost/benefit analyses in Commission cases where even rudimentary attempts to match costs and benefits have sufficed.[76]

43. PJM states that the Market Monitor argues that every collateral shortfall could theoretically become a default, but PJM argues that that argument does not reflect reality. PJM explains that collateral shortfalls are common under the current requirements, as evidenced by the observed 8% to 11% failure rate, whereas actual FTR defaults are rare, such that "all of those occurring in the last fourteen years can be counted on one hand."[77]

44. PJM also argues that the Market Monitor's suggested alternative cost-benefit analysis is not useful for evaluating a margin requirement.[78] PJM states that it would essentially set the dollar value from the GreenHat default as the benefit gained from higher collateral and use that to conclude that the benefits exceed the cost of using a 99% confidence interval. PJM states that this comparison does not stop at 99% and implies that market participants should bear dramatically higher collateral costs from a near-100% confidence interval before their costs would approach the ascribed benefit. PJM asserts that the margin requirement is just one tool among many and that requiring the margin requirement to solve all problems, as the Market Monitor's suggested cost-benefit analysis essentially does, would deprive the PJM market of the clear benefits that the FTR Credit Revisions can provide.

45. PJM disputes the Market Monitor's argument that there is no basis for the assertion that the increased collateral required by using a 99% confidence interval falls disproportionately on FTR market participants that serve load.[79] PJM states that the observed difference in impact can be explained by the fact that FTR market participants that serve load are more likely to use FTRs as a hedge against congestion on the paths between their physical resources and load, while other entities such as financial traders can construct FTR trading strategies without regard to these constraints. PJM states FTR market participants that serve load and hedge congestion on paths for physical load tend

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[76] *Id.* at 9 (citing *Ill. Com. Comm'n. v. FERC*, 721 F.3d 764, 775 (7th Cir. 2013) (it is "not enough. . .to point out that. . .[the Commission's] attempt to match the costs and the benefits. . .is crude; if crude is all that is possible, it will have to suffice.")).

[77] *Id.* at 10.

[78] *Id.* at 11.

[79] *Id.* at 12.

to have less path diversification and greater path diversification tends to mute risks posed by congestion and pricing history on any particular path, which is what the HSIM model is designed to do – assess risks posed by FTR paths being used by different participants. PJM explains that the choice of a 99% confidence interval ascribes worse potential outcomes relative to a 97% confidence interval on each FTR path and that market participants with less diverse portfolios that are more dependent on specific paths, like load serving entities, are therefore more prone to collateral increases from a 99% confidence interval.[80]

46. PJM states that Citadel's protest seeks rejection of PJM's proposal because it does not also address minimum capitalization requirements, even though Citadel concedes that the FTR Credit Revisions are an improvement relative to PJM's current requirements. PJM asserts that Citadel's argument is outside of the standards for evaluating tariff changes filed under FPA section 205.[81]

47. Joint Load Servers assert that protestors fail to demonstrate that PJM's proposal is unjust or unreasonable and that protestors' arguments for use of an HSIM model with a 99% confidence interval are not part of PJM's proposal and, therefore, are outside the scope of this proceeding.[82] Joint Load Servers further state that protests fall outside of the consensus of the PJM membership that supported PJM's proposal in the stakeholder process and would only further delay or disrupt the proposed FTR market reforms.[83] Joint Load Servers cite a separate cost-benefit analysis, prepared in August 2021 by Duke/Perast Capital to support adoption of a 95% confidence interval over a 97% confidence interval, that was presented during the stakeholder process last year, and they argue that it independently corroborates PJM's cost-benefit analysis.[84] Joint Load Servers also argue that OPSI's suggestion that the next GreenHat default is possible under PJM's proposal fails to account for the FTR market reforms that have been implemented since the GreenHat default, such as the mark-to-auction adjustment and volumetric minimum charge.[85] Joint Load Servers state that the 99% confidence interval is not an industry standard for FTR markets, and they note that no RTOs other than ERCOT, which is outside of Commission jurisdiction, have adopted a 99% confidence

[80] *Id.* at 13.

[81] *Id.* at 16-17.

[82] Joint Load Servers Answer at 3-4.

[83] *Id.* at 5-6.

[84] *Id.* at 6-7.

[85] *Id.* at 8-9.

interval. Joint Load Servers state that the California Independent System Operator calculates credit requirements for Congestion Revenue Rights using a similar methodology to PJM's proposal and uses a 95% confidence interval.[86]

48. In its answer, the Market Monitor argues that, contrary to PJM's claims otherwise, the structural differences between the CFTC-regulated exchanges and PJM's FTR market support PJM's adherence to the industry standard 99% confidence interval, not a lower standard for collateral protection, as PJM's proposes.[87] The Market Monitor states that the "structural difference" between the CFTC-regulated exchanges and PJM's FTR market to which PJM refers is that the CFTC-regulated commodity markets clear daily and the period of risk, the time between a collateral shortfall and the period in which the affected portfolio can be liquated, is shorter. The Market Monitor argues that PJM's conclusion that this shorter period of risk and the more liquid market justifies the use of higher confidence intervals for the HSIM is nonsensical. The Market Monitor contends that where there is less liquidity and fewer interim opportunities to liquidate (one or two months instead of hours and days), there is greater, not lower, risk exposure to the market and that a collateral shortfall will result in a default before the portfolio can be liquidated.[88]

49. The Market Monitor contends that PJM's flawed cost-benefit analysis does not support adoption of the weaker 97% confidence interval. First, the Market Monitor asserts that PJM's own analysis shows that the 99% confidence interval results in lower aggregate collateral commitments and reduces risk relative to the status quo, reflecting a strict benefit and reduced costs, an observation PJM omitted when arguing that the 99% confidence interval requires higher collateral costs.[89] Second, the Market Monitor argues that, while there is still uncovered risk to participants outside of the FTR market at a 99% confidence interval, there is even more risk exposure at a 97% confidence interval and for this reason, the 99% confidence interval is superior to the 97% confidence interval. The Market Monitor contends that the 99% confidence interval places more of the risk where it belongs, on the FTR market participant that is engaged in the risky behavior.[90]

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[86] *Id.* at 9-10.

[87] Market Monitor Answer at 3-4.

[88] *Id.*

[89] *Id.* at 4.

[90] *Id.* at 5.

50. Third, the Market Monitor disagrees with PJM's contention that defaults, not shortfalls, should be the metric for assessing benefits. The Market Monitor states that HSIM calculations, as used by PJM, are based on shortfalls because the objective of the HSIM approach is to protect the central clearinghouse, and its members, from potential exposure to a default from a portfolio in the risk period, by relying on collateral requirements; it is not for the clearinghouse and its members to bear the costs of that collateral for the benefit of the market participants.[91]

51. Fourth, the Market Monitor states that, while PJM used the difference in the capital carrying costs between the 99% and 97% confidence interval to calculate the incremental cost of using 99% instead of the 97% confidence interval, PJM did not conduct a parallel analysis for incremental benefits of using the 99% instead of the 97% confidence interval. The Market Monitor states that a parallel analysis would subject a participant's FTR portfolio to historical FTR price movements to generate a distribution of potential shortfalls to calculate the maximum potential shortfall corresponding to each fixed confidence interval. The incremental benefit of using the 99% confidence interval instead of the 97% confidence interval would then be the difference between those two maximum potential shortfalls. The Market Monitor argues that, instead of using a parallel method, PJM has picked a method that, based on a single set of events (actual market results, not the range of possible market results based on historical variation), seems to support their conclusion.[92]

52. The Market Monitor disputes PJM's contention that other tools and credit requirements can compensate for under-collateralizing initial margin, and notes that initial margin requirements are designed to cover specific portfolio risks. The Market Monitor argues that reliance on such other tools and requirements to address margin deficits is neither just nor reasonable. The Market Monitor also argues that PJM's assertion that the increased collateral required by using a 99% confidence interval falls disproportionately on FTR participants that serve load continues to be unsupported. The Market Monitor argues that the HSIM risk estimate for a specific portfolio does not differentiate between whether the participant is a load serving entity, a generator or a purely financial participant, and if it did, that would indicate a systematic problem that would cause a disproportionate credit requirement (i.e., credit requirements not in line with expected risk) for every confidence interval, not just the 99% confidence interval.[93]

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[91] *Id.* at 5-6.

[92] *Id.* at 6-7.

IV. Discussion

A. Procedural Matters

53. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2021), the notices of intervention and timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding.

54. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2) (2021), prohibits an answer to a protest unless otherwise ordered by the decisional authority. We accept the answers from PJM, the Market Monitor, and Joint Load Servers because those answers provided information that assisted us in our decision-making process. We also grant OPSI's motion, filed in conjunction with its protest, to lodge certain materials from the record in Docket No. ER22-703-001.

B. Substantive Matters

55. Our preliminary analysis indicates that PJM's proposed FTR Credit Revisions have not been shown to be just and reasonable, and may be unjust, unreasonable, unduly discriminatory, or preferential, or otherwise unlawful. PJM's filing raises issues of material fact that cannot be resolved based on the record before us. Accordingly, we accept and suspend PJM's proposed FTR Credit Revisions for a nominal period, to become effective August 3, 2022, subject to refund, and subject to the outcome of paper hearing procedures.

56. Appendix A to this order contains questions for that paper hearing. Our questions for the paper hearing focus on the risk associated with PJM's proposed 97% confidence interval used in the HSIM model. PJM is directed to respond to those questions within 60 days of the issuance of this order, and other parties also may respond to the questions within the same time period. Reply comments are due within 90 days of the date of issuance of this order.

57. We deny PJM's Motion to Hold Section 206 Proceeding in Abeyance[94] asking the Commission to hold the section 206 proceeding in abeyance pending the Commission's action on the instant section 205 filing. Because we have not yet determined whether PJM's instant section 205 filing is just and reasonable, we deny the abeyance motion, and require PJM to show cause why "the default position, the prior rate,"[95] remains just and

[94] PJM, Motion to Hold Section 206 Proceeding in Abeyance, Docket No. EL22-32-000 (May 31, 2022).

[95] *W. Res., Inc. v. FERC*, 9 F.3d 1568, 1579 (D.C. Cir. 1993) (interpreting parallel

reasonable.[96] We further find that the most expedient path to resolving these concerns is to consolidate this proceeding with the show cause proceeding, as these proceedings share common issues of law and fact.[97]

The Commission orders:

(A) The proposed Tariff revisions are hereby accepted and suspended for a nominal period, to become effective August 3, 2022, subject to refund, and subject to the outcome of the paper hearing, as discussed in the body of this order.

(B) Docket No. EL22-32-000 is hereby consolidated with Docket No. ER22-2029-000, as discussed in the body of the order.

(C) Paper hearing procedures are hereby established to develop a further record to determine whether the proposed Tariff revisions are just and reasonable, as discussed in the body of this order.

provisions of the Natural Gas Act).

[96] *See Monongahela Power Co.*, 162 FERC ¶ 61,129, at P 92, *order on reh'g*, 164 FERC ¶ 61,217, at P 19 (2018) (addressing a filing pursuant to section 205 of the FPA in a pending proceeding filed pursuant to section 206 of the FPA).

[97] *See El Paso Natural Gas Co.*, 33 FPC 1260, 1262 (1965) ("Those parties granted intervention by this order will be considered as intervenors in all the matters in these presently consolidated proceedings. Those parties therefore, need not refile for intervention in the additional and individual docket consolidated by this order unless they desire to do so.").

(D) Responses to both the paper hearing questions and the show cause are due 60 days from the date of issuance of this order, and comments on those responses are due 90 days from the date of issuance of this order, as discussed in the body of this order.

By the Commission. Commissioner Phillips is not participating.

(S E A L)

Debbie-Anne A. Reese,
Deputy Secretary.

Appendix A

1. As noted in the February 2022 Order's show cause directive, PJM states that it has implemented recommendations from the GreenHat Report but acknowledged that its current FTR Credit Requirement still includes a number of risks, including those associated with an undiversified adder. The February 2022 Order recognized that PJM's December 2021 Filing "addresses several limitations in the current approach to determining the FTR Credit Requirement, particularly as to credit for FTR Obligations – which comprise the vast majority of FTR market activity and financial exposure."[98]

Please address:

a. Whether the default position, i.e. the prior FTR Credit Requirement in effect before PJM proposed the current revisions to its FTR Credit Requirement, remains just and reasonable.

b. Whether PJM's proposed revisions to its current FTR Credit Requirement are just and reasonable

2. As stated in the February 2022 Order,[99] parties are encouraged to address the following arguments raised in the record of that proceeding:

a. Compared to the 99% confidence interval: (i) whether adoption of a 97% confidence interval causes the PJM market and its customers to subsidize collateral for FTR market participants who should alone absorb the risk as well as

[98] February 2022 Order, 178 FERC ¶ 61,146 at PP 36-37.

[99] *Id.* PP 40-41.

the benefit of those positions;[100] and (ii) a 97% confidence interval may expose the entire PJM membership to potential default costs.[101]

b. A potential transition from a 97% confidence interval to a 99% confidence interval could avoid potentially significant reduced participation in FTR markets, and whether any such transition period should be specified in the Tariff.[102]

3. PJM proposes a 97% confidence interval in its HSIM model, deciding not to use the 99% confidence interval utilized by "a number of non-jurisdictional exchanges," and arguing that "a 97% confidence interval is just and reasonable for the particular circumstances of PJM and its FTR market."[103] The Market Monitor agrees that there are "'structural differences' between . . . CFTC-regulated exchanges and the Commission-regulated FTR market," but argues that those "structural differences" support the use of the 99% confidence interval, not a 97% confidence interval. The Market Monitor contends that "[n]o evidence is provided [by PJM] that the structural differences cited by PJM and Elliot Bay support a weaker standard for collateral protection than that employed in CFTC-regulated exchanges," and that the lower liquidity and fewer interim opportunities to liquidate portfolio positions instead support adherence

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[100] *See*, e.g., Market Monitor Protest at 3, December 2021 Filing, Docket No. ER22-703, ("'Relative to an initial margin based on a 99% confidence interval, an initial margin based on a 97% confidence interval provides a subsidy of collateral related costs for FTR market participation at the expense of potential default costs imposed on the entire membership. . . . [T]he risk of default should be borne by the FTR holders who benefit from their FTR positions and not by PJM members more generally who have nothing to do with other FTR holders' positions.'"); OPSI at 5, Docket No. EL22-32-000 ("'Even while the market proceeds without any defaults, the PJM markets as a whole and members of PJM (including non-participants in the FTR market) are effectively providing credit support to FTR market participants by agreeing to backstop losses resulting from a failure in FTR market margin policy.'") (quoting Wolkoff and Anderson Aff. at 22-23).

[101] *See*, e.g., Market Monitor Protest at 3; OPSI Protest at 4, December 2021 Filing, Docket No. ER22-703, ("'By design, a 97% [confidence interval] in the FTR Credit Requirements will allow for potentially more inadequate margin scenarios which may result in more uncovered losses to the PJM markets as a whole and to the PJM members, including those that do not actively participate in the FTR markets. . . .'") (quoting Wolkoff and Anderson Aff. at 22-23).

[102] February 2022 Order, 178 FERC ¶ 61,146 at PP 34, 41 (summarizing arguments regarding a transition mechanism).

[103] PJM Transmittal at 18-19 (emphasis removed).

to a 99% confidence interval.[104] PJM's expert witnesses in the December 2021 Filing also stated that "FTR contracts and FTR markets, in our view, have many of the same market risks associated with them as regulated financial commodity derivatives . . . . ."[105]

a. Please explain in detail how these structural differences in the PJM FTR market relative to CFTC-regulated exchanges justify the use of a lower confidence interval for the HSIM model.

4. PJM states that the reduced collateral requirements (relative to the existing Tariff) of the proposed 97% confidence interval "[were] not driven by the choice of a 97% confidence interval" but "[were] instead driven by the elimination of the undiversified adder and the proposal to allow positive [mark-to-auction] adjustments to reduce the FTR Credit Requirement."[106] PJM also states that "its Members are protected from portfolio risks by the [FTR Credit Revisions'] dramatic reduction in the failure rate – which directly measures the exposure to portfolio risk."[107]

a. Please explain in detail how these factors affect collateral levels at both 97% and 99% confidence intervals, and how any such collateral reductions are sufficient to protect PJM market participants from the risks of initial margin shortfalls. Please support your answer with data that demonstrates how these components would drive the overall reduction in collateral over additional months for both the 97% confidence interval and 99% confidence interval.

5. With regard to extreme tail events, the February 2022 Order found that PJM had failed to "demonstrate whether the HSIM model would operate as represented across extreme events or that the initial margin estimates would cover losses as expected."[108] PJM's June Filing of the FTR Credit Revisions provides back-test failure rate summaries

[104] Market Monitor Answer at 3-4.

[105] PJM Transmittal of December 2021 Filing, Docket No. ER22-703, Wolkoff and Anderson Aff. at 7.

[106] PJM Transmittal at 30.

[107] *Id.* at 33.

[108] PJM Transmittal of December 2021 Filing, Docket No. ER22-703, Wolkoff and Anderson Aff. at 22-23.

for the February 2022 and March 2022 FTR auctions, which PJM states to be 3.6% and 3.0% respectively for the 97% HSIM model.[109]

Please respond to the following:

a. For both the 97% and 99% confidence intervals, provide additional monthly back-test data for the past 10 years, if possible and explain if not possible, with the model's risk estimate, the observed initial margin deficit, and what percent of portfolios experienced a back-test failure. Please provide data that includes stressed periods and identify the periods where stressed market conditions were observed.[110]

b. For each month in which data is provided, explain what the impact would be of the single largest FTR counterparty defaulting, and of the two largest FTR counterparties simultaneously defaulting if collateral is determined using the HSIM model at the 97% and 99% confidence intervals (please provide details including dates, risk estimates of model, and default size)?

6. Please provide the complete KPMG report summarized in the Drauschak Affidavit.

7. PJM states that "[t]he increased collateral required by a 99% confidence interval falls disproportionately on FTR Participants that serve load."[111]

Please respond to the following:

a. PJM's manuals define Load Serving Entity as "[a]ny entity (or the duly designated agent of such an entity), including a load aggregator or power marketer that: (a) serves end-users within the PJM Control Area; and (b) is granted the authority or has an obligation pursuant to state or local law, regulation or franchise to sell electric energy to end-users located within the PJM Control Area."[112] Is this

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[109] PJM Transmittal at 27-28.

[110] These stressed periods should include both events such as those described by witnesses Wolkoff and Anderson (PJM Transmittal of December 2021 Filing, Docket No. ER22-703, Wolkoff and Anderson Aff. at 22-23), and periods where fat loss tails (i.e., observed extreme loss events not anticipated by the assumed probability distribution of losses) were observed in market prices.

[111] PJM Transmittal at 25.

[112] PJM Manual 35 (Definitions and Acronyms) (PJM Manual 35) at 54.

definition identical to what PJM describes as "FTR Participants that serve load?"

b. Referring to the sector designations in Figure 2[113] (Electric Distributor, Generation Owner, Transmission Owner, Load Serving Entity, Financial Trader and Other Supplier), (i) which of these sectors "serve load?" and (ii) which members of these sectors have been "granted the authority or ha[ve] an obligation pursuant to state or local law, regulation or franchise to sell electric energy to end-users located within the PJM Control Area?" [114]

c. Referring again to Figure 2, 69% of the collateral costs under a 97% confidence interval are borne by Financial Traders and Other Suppliers, and 66% of the collateral costs under a 99% confidence interval are borne by Financial Traders and Other Suppliers. How much of the remaining collateral costs are borne by "FTR Participants that serve load?"

d. The Market Monitor states that "[f]or PJM to suggest that the initial margin credit requirements generated by HSIM are disproportionate for a class of participants would indicate a systematic problem that would cause a disproportionate credit requirement . . . for every confidence interval, not just the 99 percent confidence interval:"[115] (i) Please explain your statement that the burden of increased collateral requirements falls "disproportionately" on "FTR Participants that serve load;" (ii) Please explain whether (and why or why not) the burden of collateral requirements under a 97% confidence interval also falls "disproportionately" on FTR market participants that serve load?

8. PJM's cost-benefit analysis compares the costs and benefits of moving from a 97% confidence interval to a 99% confidence interval, which PJM states would result in additional financing costs of $22.4 million for FTR market participants compared to additional benefits of $27.5 million in shortfall reductions. The Market Monitor contends that the cost-benefit analysis should instead compare the estimated benefits from reducing shortfalls "across all possible events, based on historical data, from using HSIM based on a confidence interval of 99 percent instead of 97 percent."[116] The Market Monitor argues that PJM did not conduct a parallel analysis for the incremental benefits of using the 99% instead of the 97% confidence interval. A parallel analysis would

[113] PJM Transmittal at 26.

[114] PJM Manual 35 at 54.

[115] Market Monitor Answer at 8.

[116] *Id.* at 5.

subject a participant's FTR portfolio to historical FTR price movements to generate a distribution of potential shortfalls[117] to calculate the maximum potential shortfall corresponding to each fixed confidence interval. The difference between maximum potential shortfall using the 99% instead of the 97% confidence interval would be the incremental benefit.[118]

a. Please provide a comparison of costs and benefits across a wide range of possible events under a 97% confidence interval and 99% confidence interval. In this analysis, please evaluate estimated costs not only to FTR market participants but to non-FTR market participants and retail customers and provide the basis for that evaluation.

b. Please provide details about the expected shortfalls (i.e., actual dollar amounts) at the 97% and 99% confidence intervals, and how they compare with the observed initial margin deficits. Please include this data for both normal and stressed market conditions[119] over the same period as back-testing was performed, i.e. the past 10 years.

9. PJM's cost-benefit analysis compares the costs for FTR market participants to finance incremental increases in collateral (i.e., financing cost savings) to the benefits of avoiding shortfalls. PJM's April 2022 committee meeting presentation states that utilizing a 97% confidence interval (as opposed to a 99% confidence interval) results in overall lower collateral and financing costs for PJM market participants, but also generates $260 million less aggregate collateral than utilization of a 99% confidence interval.[120] OPSI challenges the methodology of PJM's cost-benefit analysis, and

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[117] As explained by PJM's consultant, Dr. Eydeland, when describing how initial margin is calculated and what expected shortfall measures: "the collateral (capital) required for insurance against default or other adverse market events can be computed in several ways. It can be just the value corresponding to this percentile (VaR), or it [i.e., Expected Shortfall] can be the expected value of losses exceeding VaR." PJM Transmittal of December 2021 Filing, Docket No. ER22-703, Exhibit A at 5.

[118] Market Monitor Answer at 7.

[119] *See* supra n. 111.

[120] *See* "FTR Credit Requirement Filing" Presentation, PJM Special Members Committee Meeting, April 14, 2022, (https://www.pjm.com/-/media/committees-groups/committees/mc/2022/20220414-special/20220414-item-01-ftr-credit-requirements.ashx).

disputes PJM's suggestion that "customers would be better off if [members that serve load]" did not pay collateral increases under a 99% confidence interval relative to a 97% confidence interval. OPSI argues that PJM's cost-benefit analysis focuses on the collateral and financing costs to FTR market participants rather than the potential costs to the PJM customers who could ultimately be paying the costs of a future non-covered default.[121]

a. Please explain how retail customers and non-defaulting market participants would benefit from the incremental financing cost savings for FTR market participants that PJM used in its cost-benefit analysis.

b. Please provide additional support regarding how these potential cost savings may compare to potential default costs associated with severe tail events that could be allocated to retail customers and non-defaulting market participants. How much net benefit might retail customers and non-defaulting market participants expect to receive from these financing cost savings to FTR market participants?

10. PJM's cost-benefit analysis calculates Members' benefits based on the incremental reduction in FTR market participant defaults, as opposed to collateral shortfalls, and used both a five percent and a 10% factor to relate default amounts to shortfall amounts. The Market Monitor disagrees with PJM's contention that defaults, not shortfalls, should be the metric of benefits. The Market Monitor asserts that HSIM calculations, even as used by PJM, are based on shortfalls because the objective of the HSIM approach is to protect the central clearinghouse, and its members, from potential exposure to a default from a portfolio in the risk period, by relying on collateral requirements; it is not for the clearinghouse and its members to bear the costs of that collateral for the benefit of the market participants.[122]

a. Explain how PJM's estimate of a 5% and a 10% default rate compares to other Derivatives Clearing Organizations' assumptions about defaults when using an HSIM model.

11. Load serving entities contend the Commission should take into account the broad level of support for PJM's proposal and that a higher collateral requirement would upset the balance in PJM's proposal by "disproportionately requiring much higher collateral costs that pose increased risk of undermining hedging activity."[123] OPSI emphasizes that

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[121] OPSI Protest at 5-6.

[122] Market Monitor Protest at 8.

[123] Joint Load Servers Answer at 5, 7.

"the FPA is a consumer protection statute" and takes issue with PJM's claim that its proposal benefits load because "customers would be better off if those entities did not have to provide this increased amount of collateral" and points out that FTR market participants may aim to keep more of their capital available to deploy elsewhere instead of being used as collateral which ultimately protects PJM customers.[124]

a. Provide information as to how, under its proposal, PJM would allocate the default shortfall amounts that may occur under an HSIM model from a default among its Members, particularly the amount allocated and percentage of allocation to load serving entity members. PJM, as well as other parties, should address whether the amounts allocated, particularly to load serving entities, could be or has been passed through to retail customers.

[124] OPSI Protest at 5-6.

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