

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

PJM Interconnection, L.L.C.)	Docket Nos. ER22-2029-000
)	EL22-32-000
)	
		(consolidated)

**RESPONSE OF PJM INTERCONNECTION, L.L.C. TO PAPER HEARING
ORDER, AND REQUEST FOR CONFIDENTIAL TREATMENT**

PJM Interconnection, L.L.C. (“PJM”) hereby provides its responses to the questions posed by the Federal Energy Regulatory Commission (“Commission” or “FERC”) in its August 2, 2022 order (subject to the outcome of this paper hearing) in this proceeding.¹ PJM’s responses confirm that the Revised Financial Transmission Right (“FTR”) Credit Requirement² accepted by the Commission in the August 2 Order is just and reasonable, and provides additional record support for that determination.

In addition, because this submittal attaches certain FTR Market Participant-specific data that PJM keeps confidential and is market-sensitive, PJM requests non-public treatment of that information, as more fully discussed in section III below.

I. EXECUTIVE SUMMARY

In the August 2 Order, the Commission established paper hearing procedures to develop a further record as to whether the Revised FTR Credit Requirement is just and

¹ *PJM Interconnection, L.L.C.*, 180 FERC ¶ 61,073 (2022) (“August 2 Order”).

² The Revised FTR Credit Requirement refers to the set of PJM Open Access Transmission Tariff (“Tariff”) amendments to the FTR Credit Requirement that PJM proposed in both the *PJM Interconnection, L.L.C.*, Revisions to PJM’s FTR Credit Requirement and Request for 28-Day Comment Period, Docket No. ER22-703-000 (Dec. 21, 2021) (“December 2021 Filing”) and the *PJM Interconnection, L.L.C.*, Revisions to PJM’s FTR Credit Requirement, Docket No. ER22-2029-000 (June 3, 2022) (“June 3 Filing”). Terms not otherwise defined herein shall have the same meaning as set forth in the Tariff, and the Amended and Restated Operating Agreement of PJM Interconnection, L.L.C. (“Operating Agreement”).

reasonable.³ By this filing, PJM provides the requested information, which confirms that the inclusion of a historical simulation (“HSIM”) model with a confidence interval (“CI”) of 97% is just and reasonable. As also shown, PJM Members that serve load are disproportionately impacted by a change to a 99% CI.

II. RESPONSE

- 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.**

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.**

As explained below, no Federal Power Act (“FPA”) section 206⁴ action is needed in this case, because ample evidence in the record demonstrates that the Tariff amendments PJM filed under section 205⁵ are just and reasonable. If, however, the Commission does feel compelled to act under section 206 in this case, PJM urges the Commission to confine that action to the issue that is the evident focus of this paper hearing, i.e., whether to use a 97% or a 99% CI in the HSIM.

³ See August 2 Order at P 55.

⁴ 16 U.S.C. § 824e.

⁵ 16 U.S.C. § 824d.

All provisions of the FTR Credit Requirement⁶ that were in effect before the Commission allowed the Revised FTR Credit Requirement⁷ in the June 3 Filing to take effect were previously accepted by the Commission as just and reasonable. Moreover, PJM observes that the FTR Credit Requirement, which has been in effect in some form since PJM added its credit policy to the Tariff in the form of Tariff, Attachment Q,⁸ has yielded significant benefits, and those benefits have been enhanced over time as a result of PJM's continuing efforts, working with its stakeholders, to improve its FTR credit and collateral rules to better reflect the market risks of FTR transactions.⁹ That preexisting FTR Credit Requirement was thus the result of an ongoing evolution in PJM's efforts to incorporate lessons learned from FTR market experiences (including FTR Market Participant defaults) to support a robust FTR market while protecting PJM Members from potential losses resulting from default.

At the same time, PJM identified in the June 3 Filing (and in its December 2021 Filing) a number of shortcomings in the previously effective FTR Credit Requirement, as part of PJM's explanation and support for the specific changes effected by the Revised FTR Credit Requirement, and that record is available to the Commission. PJM leaves to the Commission whether those specific identified shortcomings—which the Revised FTR Credit Requirement moots and replaces—had become unjust and unreasonable within the meaning of FPA, section 206.¹⁰

⁶PJM Open Access Transmission Tariff ("Tariff"); Tariff, OATT Definitions – E - F (definition of FTR Credit Requirement).

⁷ See *supra* note 2.

⁸ See *PJM Interconnection, L.L.C.*, Notice of Compliance Tariff Filing, Docket No. EL03-207-001 (July 22, 2003).

⁹ See, e.g., December 2021 Filing at 4; *PJM Interconnection, L.L.C.*, Amendment to Revisions to PJM's FTR Credit Requirement, Docket No. ER22-703-001 (Dec. 30, 2021) (describing prior PJM improvements to its FTR credit practices).

¹⁰ 16 U.S.C. § 824e.

If the Commission finds that the shortcomings PJM identified in the December 2021 Filing and the June 3 Filing provide the basis for a holding that the prior Tariff was unjust and unreasonable, the Commission has a just and reasonable solution that was specifically designed to remedy those shortcomings, i.e., the Revised FTR Credit Requirement. No party has presented substantial evidence to demonstrate that any other Tariff amendment made by the June 3 Filing is unjust and unreasonable. To the contrary, even the parties that advocate a 99% CI supported the other Tariff changes in the June 3 Filing.¹¹

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

The June 3 Filing demonstrated that the current-effective FTR Credit Requirement, accepted (subject to nominal suspension and refund) by the Commission in its August 2, 2022 order, is just and reasonable.¹² In the June 3 Filing, PJM made the following demonstrations:

- PJM showed that, relative to using an HSIM with a 97% CI, the incremental costs of using a 99% CI (increased costs to carry extra collateral) exceed the incremental benefits (reduced default allocations);¹³
- PJM showed that the HSIM with a 97% CI establishes reasonably calibrated collateral levels for riskier portfolios, as evidenced by dramatic reductions

¹¹ See, e.g., *PJM Interconnection, L.L.C.*, Comments of the Independent Market Monitor, Docket No. ER22-2029-000, at 2 (June 24, 2022) (“IMM Comments”) (supporting the June 3 Filing with the exception of the CI).

¹² *PJM Interconnection, L.L.C.*, 180 FERC ¶ 61,073, at P 55 (2022) (accepting and suspending the current FTR Credit Requirement).

¹³ June 3 Filing at 19-25.

in the failure rate (i.e., how often in the back-testing market losses exceeded the required collateral) even while reducing aggregate collateral;¹⁴

- PJM showed that the reduction in collateral from the HSIM with a 97% CI was primarily due, not to the 97% CI itself, but to other changes in the Revised FTR Credit Requirement;¹⁵ and
- PJM provided a summary report of an independent consulting firm affirming that they found the HSIM with a 97% CI does indeed operate as intended.¹⁶

In its answer to comments and protests in this proceeding, PJM further showed that an HSIM with a 99% CI is not the only just and reasonable approach to setting the FTR Credit Requirement,¹⁷ and demonstrated that PJM's cost/benefit analysis supports the current FTR Credit Requirement.¹⁸ Through these responses, PJM provides updated analyses that demonstrate that the 97% CI provides protection very close to the 99% CI, yet at substantially lower cost. PJM demonstrates this with additional back-testing results and other analyses provided in its responses to the Commission's paper hearing Question Nos. 5, 7 and 8. Each of these demonstrations support the Revised FTR Credit Requirement as set forth in the June 3 Filing, as just and reasonable, and fully responds to the questions posed in the Commission's August 2 Order.¹⁹

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

¹⁴ See *id.* at 22-23.

¹⁵ See *id.* at 30.

¹⁶ See *id.* at 34-35.

¹⁷ *PJM Interconnection, L.L.C.*, Motion for Leave to Answer and Answer of PJM Interconnection, L.L.C., Docket No. ER22-2029-000, at 5-7 (July 11, 2022) ("PJM Answer").

¹⁸ See *id.* at 8-11.

¹⁹ August 2 Order at Appendix A.

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

PJM disagrees with the intervenor arguments raised in Docket No. ER22-703 that were noted in the February 2022 Order,²⁰ and welcomes the invitation to address those arguments here.

The fundamental purpose of PJM’s filing was to establish a reasonable balance—a CI that sufficiently protects consumers from the risk of default balanced with the need to ensure that the increased Collateral requirement does not unreasonably increase the costs of Collateral. *Every* credit rule that imposes a lower collateral requirement than an alternative credit rule will, by that fact alone, create a greater risk (relative to the alternative rule) of a default that is not fully covered by collateral. For example, using HSIM with a 99% CI will yield a lower collateral requirement than using HSIM with a 100% CI, and therefore creates a greater risk (compared to using 100% CI) of a default that is not fully covered by collateral. Obviously, it does not follow that every credit rule that imposes a lower collateral requirement, or that use of 99% CI instead of 100% CI, is per se an improper subsidy and must be unjust and unreasonable. The Commission has never held that only the rule that results in the highest collateral requirement can be just and reasonable, and calling any lower collateral requirement a “subsid[y]” does not advance the discussion—it merely begs the question of whether the proposed credit rule is just and reasonable taking into account the balance that is needed in such a determination.

²⁰ See *PJM Interconnection, L.L.C.*, 178 FERC ¶ 61,146 (2022) (“February 2022 Order”).

Similarly, the Commission has never held that market participants “should alone absorb the risk” that a market loss could exceed required collateral, regardless of the cost of that collateral, and regardless of the many other factors relevant to the question of whether a proposed credit rule is just and reasonable.

The question, therefore, is not simply whether using HSIM with a 97% CI results in lower collateral than using HSIM with 99% CI, which *inherently* results in an increased risk that a particular default may not be fully covered by the required collateral. The question is whether using HSIM with a 97% CI is just and reasonable. The Commission has more than sufficient evidence, which includes the updated information presented below, to find that the Revised FTR Credit Requirement represents a reasonable balance and therefore meets the section 205 requirements. PJM’s evidence, highlighted under the following headings, underscores that focusing solely on the relative level of required collateral, to the exclusion of cost and other considerations, is misguided.

Market Participant Cost of Collateral

First, higher collateral has a higher cost, which can be compared against the reasonably estimated benefit of reducing the cost of a default that is not covered by collateral. PJM has provided substantial evidence that the increased cost of using a 99% CI is well in excess of the incremental benefit of using 99% CI.²¹ If anything, PJM’s prior assessment was conservative—updated evidence presented herein demonstrates that the cost/benefit comparison of a 97% CI vs. 99% CI argues even more strongly that the costs of a 99% CI greatly exceeds its benefits.²²

²¹ See June 3 Filing at 19-27; Affidavit of Lisa M. Drauschak (Attachment C) at 17:13-20:15 (“Drauschak Aff.”).

²² See response to Question 5a.

In particular, the additional back-testing provided with this submittal highlights that collateral shortfalls (i.e., occasions when an FTR Market Participant's losses on its FTR portfolio exceed the Collateral it was required by the Revised FTR Credit Requirement to provide) are likely far more common than defaults, which matters greatly, since Members only bear costs from defaults—not from Collateral shortfalls. The Collateral shortfall represents the difference between the settled values of a Market Participant's portfolio as compared to the FTR Credit Requirement held. Consequently, a FTR Market Participant's costs of meeting a Collateral requirement under HSIM with 99% CI will now be *even greater* than the benefit of avoiding defaults.²³

Unforeseen Tail Risk

Second, the difference between the Collateral shortfall resulting from a 97% CI and the Collateral shortfall resulting from a 99% CI can easily be dwarfed by the Collateral shortfall resulting from an event *not contemplated* by the historic period covered by the HSIM. Probabilities of an adverse event, such as a series of unplanned transmission outages, do not stop at the 99% CI; to the contrary, they can *exceed* 100% because the universe of possible adverse occurrences is greater than the subset of occurrences captured by the defined historic period included in the HSIM. For example, a series of unplanned transmission outages that goes beyond any adverse event included in the HSIM's historic look-back period could produce portfolio losses greater than the highest losses contemplated by the HSIM—and thus beyond what even a 100% CI would derive from the HSIM's data-set. The CI percentage figures exist only within that subset, and not within

²³ FTR Market Participants' borrowing costs, which are relevant to providing and maintaining the collateral required by the Revised FTR Credit Requirement, have increased dramatically since the March 2022 time period that PJM used in its cost-benefit analysis to estimate capital costs, and those borrowing costs are almost certain to increase even more in coming months given announced Federal Reserve intentions.

the broader universe of events that could result in potentially significant collateral shortfalls and even defaults. Put more simply, HSIM, whether using a 97% CI or a 99% CI, cannot resolve all FTR collateral and credit risks—and *is not designed to do so*. The Revised FTR Credit Requirement is only one part—albeit an important part—of PJM’s tool chest for protecting Members against the risk that an FTR Participant may default and impose costs on Members. The Revised FTR Credit Requirement will work in conjunction with the implementation of enhanced risk management tools in 2020, specifically: Know Your Customer Reforms, enhanced material adverse change language, required audited financials, implemented financial risk models, the addition of unreasonable credit risk as a basis for a collateral request and the ability to limit or suspend a Market Participant.²⁴ Importantly, these other tools are needed whether or not the HSIM uses a 99% CI or a 97% CI, and *they will be just as effective in meeting each of their designed purposes* whether the HSIM uses a 99% CI or a 97% CI. That choice of CI does not affect the utilization of these other credit protections.

Impact of Increased Costs of Capital on Load Serving Entities (“LSEs”)

Third, the costs of the increased Collateral from using a 99% CI instead of a 97% CI *do* fall disproportionately on the Members that serve retail load, compared to Members that do not serve retail load. PJM used an available break-down of Member account information in the June 3 Filing to assess this impact, and observed that Members that serve load saw a noticeably higher increase in their Collateral, relative to other Members.²⁵ PJM expands on that analysis in its response to Question No. 7 below. As explained in the June 3 Filing, PJM used Member account information including Members’ sector designations,

²⁴ See Drauschak Aff. at 24:3-7 (describing 2020 enhanced risk management tools).

²⁵ June 3 Filing at 25-27.

as an approximate means in the cost/benefit analyses to differentiate Members likely to serve load from those unlikely to serve load.²⁶

In response to Question No. 7, PJM takes three additional approaches to that differentiation: i) Members that meet the definition of LSE as defined in Article 1 of PJM's Reliability Assurance Agreement ("RAA") versus Members that do not; ii) Members that are Financial Traders, versus all other Members; and iii) Members that have Network Service Peak Load ("NSPL") versus Members that do not have NSPL. PJM uses these varying approaches because Members can engage in multiple lines of business ("LOB") within PJM, and even a Member that signs the RAA—and thus meets the definition of a LSE that the Commission notes in Question No. 7—might not serve load as its primary. While each approach is thus an approximation, the approach used in the June 3 Filing, and the three approaches added here, all show that Members in the group most likely to serve load see a higher percentage increase in their required Collateral from HSIM using a 99% CI versus 97% CI compared to the group that is least likely to serve load—and the higher percentage increases for load servers are similar across the approach used in the June 3 Filing (as summarized in the footnote below)²⁷ and the three approaches presented here.

Under the first approach, Members that signed the RAA and therefore must meet the RAA's LSE definition see a 57% increase in their required Collateral from HSIM using a 99% CI versus 97% CI, as compared to the 39% increase in Collateral from the remaining

²⁶ See *id.* at 25.

²⁷ In the June 3 Filing, PJM's analysis concluded that Members that self-identify as LSEs within the "Other Suppliers" sector see a 55.3% increase in their Collateral requirement from HSIM using a 99% CI versus a 97% CI. The other sectors that include LSEs (i.e., the Electric Distributor, Generation Owner, and Transmission Owner sectors) also see much higher increases in their required Collateral as a result of using the 99% CI, i.e., increases of 57.5%, 63.0%, and 114.1%, respectively. By contrast, Members within the Other Suppliers sector that self-identify as Financial Traders and other non-LSEs see Collateral increases of 38.3% and 46.9% moving from a 97% CI to a 99% CI. See June 3 Filing at 26-27; Drauschak Aff. at 19-20.

Members. Under the second approach, Members that *do not* self-identify as *Financial Traders* see a 58% increase in their required Collateral from HSIM using a 99% CI, compared to the 38% increase in Collateral for members that *do* self-identify as *Financial Traders*. Under the third approach, Members that *have an NSPL* see a 60% increase in Collateral from the switch to a 99% CI, compared to the 42% increase in Collateral for those that *do not have an NSPL*.

These observed results are consistent with how the HSIM produces collateral requirements. Generally speaking, Members that are responsible for serving physical loads from physical resources are more likely to hold a narrower portfolio of FTRs, i.e., on the paths associated with those physical locations. By contrast, Members without physical loads and resources are more likely to hold a broad portfolio of FTRs, and are more likely to use one set of FTR holdings to hedge other FTR holdings. Thus, the physical load/resource group are likely to have less-diversified FTR portfolios.²⁸ But those are the portfolios for which the HSIM is likely to require greater collateral, given the greater inherent riskiness of individual physical paths. Moving deeper into the tail risk, i.e., from a 97% CI to a 99% CI, causes a substantial increase in the model's estimate of losses from these less-diversified portfolios, and therefore requires a larger increase in their collateral.

In sum, it seems clear that Members that are responsible for serving retail load will see a greater increase in Collateral if the HSIM uses a 99% CI instead of a 97% CI than the Members that are not responsible for serving retail load.

²⁸ See December 2021 Filing, *Bloczynski Aff.* at 14:7-10; *Drauschak Aff.* 20:19-21:2; *see also* PJM Answer at 12-13.

Benefits of FTRs to All Market Participants

Fourth, the suggestion (in the question's summary of some intervenors' arguments)²⁹ that FTR holders should "alone" be responsible for all credit risks created by their FTR portfolios goes too far, because it leaves out any consideration of the benefits of FTR market to all PJM stakeholders. Since their introduction in 1998, FTRs have played an integral role in the functioning of PJM's energy markets. The Commission has explained, in examining this issue, that the FTR instrument was created as a method for buyers (on behalf of load) and other market participants to hedge congestion cost components on locational market prices ("LMPs").³⁰ The Commission further found that FTRs are "superior to a pure physical rights regime" by improving efficiency and price transparency in energy markets.³¹ Financial participants, or non-LSEs contribute value to the existing Auction Revenue Right ("ARR")/FTR construct by applying competitive forces that "reflect the realities of the [transmission] system," benefiting the PJM membership more broadly.³² Specifically, PJM's existing ARR/FTR construct has facilitated the increased participation of LSEs, firm point to point as well as financial participants in PJM's markets. This participation has promoted the efficient valuation of the transmission system and providing long term hedging opportunities for participants.³³

In short, the noted intervenor arguments characterizing use of a 97% CI as creating an improper subsidy are incorrect. A 97% CI will require lower Collateral than a 99% CI,

²⁹ See IMM Comments; *PJM Interconnection, L.L.C.*, Motion to Lodge and Protest of the Organization of PJM States, Inc., Docket No. ER22-2029-000 (June 24, 2022).

³⁰ See *PJM Interconnection, L.L.C.*, 117 FERC ¶ 61,220, at P 2 (2006); see also *PJM Interconnection, L.L.C.*, 163 FERC ¶ 61,165, at P 3 (2018) (providing background on FTR market construct).

³¹ *Cal. Indep. Sys. Operator Corp.*, 120 FERC ¶ 61,023, at P 246 (2007).

³² See *Sw. Power Pool, Inc.*, 141 FERC ¶ 61,048, at P 263 (2012).

³³ See, e.g., *PJM Interconnection, L.L.C.*, 105 FERC ¶ 63,004, at P 206 (2003) ("FTRs and ARRs can be and have been used as effective hedging tools by LSE's").

but that is only one part of the consideration of whether use of a 97% CI is just and reasonable. Moreover, PJM's analyses presented in the June 3 Filing and in this submittal show that the parties that serve load face an above-average percentage increase in their Collateral and Collateral costs as a result of using a 99% CI, with little incremental benefit. Upon fair consideration of multiple relevant factors, the Commission has ample evidence to find that an HSIM with a 97% CI is just and reasonable.

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.

While the proposition posed in the question seems intuitively correct, PJM does not have data that allows it to correlate the change in CI with a change in FTR market participation. FTR auction participation has fluctuated in the PJM Region for a variety of reasons, apart from the level of the credit requirement. PJM does not have historic data that would provide the equivalent of a controlled experiment testing the hypothesis that a credit rule imposing a relatively higher collateral requirement results in less FTR market participation than would have occurred *in the absence of* that credit rule. To be clear, that proposition may be true, and the Commission has in the past expressed concerns that excessive collateral requirements can be a barrier to market participation,³⁴ but PJM does not have quantitative data that allows it to answer this specific question.

If the Commission were to order PJM to use a 99% CI, PJM would require a transition period of at least 90 days. A transition period is necessary to ensure that PJM

³⁴ See, e.g., 18 C.F.R. part 35. *Credit Reforms in Organized Wholesale Electric Markets*, Order No. 741, 133 FERC ¶ 61,060 at P 123 (2010) (balancing concerns of barriers to entry with minimum criteria for FTR Market Participants); see also *PJM Interconnection, L.L.C.*, 122 FERC ¶ 61,279, at P 81 (2008) (finding that collateral requirements do not create a barrier to entry to FTR market).

provides adequate notice to Members; implements the necessary software changes necessary to support a 99% CI and completes testing of those changes prior to their implementation.

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.” 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 to a 99% confidence interval. 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”**
 - 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.**

There are significant structural and regulatory differences between the PJM FTR market and U.S. Commodity Futures Trading Commission (“CFTC”)-regulated exchanges (including those previously identified by Elliott Bay Energy Trading, LLC (“Elliott Bay”) in this proceeding)³⁵ which reasonably enter into the choice of a CI level.

FTRs Are Tied to the Physical Delivery of Power

First, PJM’s FTR markets, the FTR products and the risks associated therewith are intrinsically tied to and defined in relation to the physical delivery of power along a geographically-identifiable transmission path, a striking structural characteristic that is

³⁵ *PJM Interconnection, L.L.C.*, Motion to Intervene and Supporting Comments of Elliott Bay Energy Trading, LLC, Docket No. ER22-2029-000 (June 24, 2022).

simply not present in CFTC-regulated markets and trading products. Such a structural market difference was the basis upon which the CFTC deferred to the Commission in not defining FTRs or other regional transmission organization (“RTO”) products as “swaps,” or subjecting the RTO markets to comprehensive CFTC jurisdiction.³⁶ FTRs are defined by the physical constraints of the transmission system topology in a particular RTO region, unlike futures contracts traded on an exchange which are unfettered by such physical market linkages or market constructs. As the Commission has explained, FERC-approved tariffs, and the risk management frameworks and credit policies contained in such tariffs, “reflect a balance between limiting the risk of defaults, and unduly increasing the costs incurred by market participants and, ultimately consumers.”³⁷

Separation of Risks Not Present in PJM Markets

Second, CFTC-regulated markets are intermediated (i.e., the risk is contained with the clearinghouse), with the clearinghouse and its clearing members absorbing levels of counterparty credit risk from trading activity. This separation of risk does not exist in the PJM FTR market. Such intermediation enables risk managers for CFTC-regulated markets to treat all market participants as anonymous, equal default risks and establish market risk and credit policies accordingly. In contrast, this risk in PJM’s FTR market is *not* contained within a central figure like a clearing house. Instead, PJM as a risk manager calibrates the

³⁶ *Final Order in Response to a Petition from Certain Independent System Operators*, 78 Fed. Reg. 19,880 at 19,912-19,913 (Apr. 2, 2013) (defining the scope of FTRs covered by the exemptive order); *Final Order in Response to an Application From Southwest Power Pool, Inc. to Exempt Specified Transactions Authorized by a Tariff Approved by the Federal Energy Regulatory Commission From Certain Provisions of the Commodity Exchange Act Pursuant to the Authority Provided in Section 4(c)(6) of the Act*, 81 Fed. Reg. 73,062, at 73,062-73,087 (Oct. 24, 2016).

³⁷ *Financial Derivatives on Energy Markets: Hearing Before the Comm. on Energy and Nat. Res.*, 111th Cong. 752 at 8 (2010) (statement of Jon Wellinghoff, Chairman, Fed. Energy Regul. Comm’n); *see also Sw. Power Pool, Inc.*, 179 FERC ¶ 61,083 at P 46 (2022) (“[T]here is always a balance between ensuring that default risk is adequately managed and the burden of complying with credit requirements.”).

effect of its risk management and Credit Policies (including the FTR Credit Requirements), and continues to evaluate the effect of its policies on different sectors of Market Participants. As the Commission’s Chairman testified to the Senate panel examining FTR, “FERC also recognizes that different approaches to credit may be warranted for different types of power market participants . . . [t]here is no reason to assume that policies crafted by the CFTC in a different regulatory context apply equally here.”³⁸ The CFTC-regulated DCOs do not recognize differences among market participants, or consider in their risk management and credit policies reasons why one market participant’s use of a financial trading product to hedge physical market risk might be different from the effect of such policies on another market participant that is trading purely for profit.

Differing Regulatory Missions of CFTC and FERC

Third, the differing regulatory missions of FERC and CFTC-regulated commodity derivatives markets, and PJM’s place in the FERC-regulated markets, create structural market differences. CFTC’s regulations focus on exchanges creating financial trading products that provide a level playing field for all market participants, clearly defining individual financial trading products, and clearinghouses (derivative clearing organizations, “DCOs”) manage the market risks of such products and markets using tools available and calibrated to protect the DCO’s members and resources. By contrast, the Commission’s regulatory mission under the FPA is to ensure that electricity rates, and the risk-adjusted market rates and other terms and conditions for products traded on PJM’s FTR markets, are just and reasonable and that such markets are financially sound in order to protect PJM and its members from market risks, including unnecessary credit risk.

³⁸ *Id.* at 8.

These differing regulatory missions are structural differences that result in differing risk management frameworks being adopted by CFTC-regulated market risk managers, and RTOs, as FERC-regulated risk managers. Each risk manager strives to accomplish its gatekeeper role within its respective relevant regulatory framework and for its own market structure. While the CFTC's mission is to level the playing field among all market participants, PJM's FTR markets are structured to permit Members who serve load to hedge the risk of delivering a physical product.

Trade Clearing Period.

Fourth, as explained by Elliott Bay, the frequency of pricing data, and market period of risk both differ substantially between CFTC-regulated DCOs and PJM's FTR market.³⁹

In particular, while trades conducted on CFTC exchanges settle daily, PJM FTRs settle at a minimum on one month and a maximum period of thirty-six months. The longer clearing period of FTRs support the use of a 97% confidence interval because it strikes the appropriate balance among PJM FTR Participants.⁴⁰ The HSIM component of PJM's FTR Credit Requirement allocates risk to the FTR portfolio path using actual data and along with PJM's additional credit tools enables PJM to appropriately manage risk in its markets while considering the cost of Collateral to its Members.

³⁹ Elliott Bay also cites the differing Margin Period of Risk ("MPOR"), but it is not clear to PJM that this difference, in and of itself, greatly affects the choice of CI, since the PJM FTR market's longer MPOR also results in collection of more Collateral.

⁴⁰ Similarly, the MPOR for FTRs is two periods (roughly two months) significantly longer than the MPOR for CFTC exchanges. This structural difference however, has no bearing on the choice of the CI. The impact of the longer MPOR results in a larger amount of Collateral being collected. For example, if the MPOR for FTRs were four instead of two, the impact would be more Collateral being collected. This structural difference has no bearing on the CI. The MPOR has a direct impact on the amount of Collateral to be collected. This is in contrast to the CI, which remains relatively constant regardless of the MPOR.

These multiple significant structural differences that distinguish PJM's FTR markets from CFTC-regulated markets require PJM, as risk manager, to perform the complex balancing and careful calibration of the different components of its FTR Credit Requirements as applied to its FTR markets. Considering the structural differences between PJM's FTR markets and CFTC-regulated commodity derivatives markets, PJM has provided ample evidence that the terms and conditions of PJM's requested Tariff amendment, including use of its HSIM at a 97% CI (as compared to a 99% or any other CI), are just and reasonable.

- 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.” 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.”**
 - 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.**

The essential factor is quoted in the last sentence of the preamble to this question: “[PJM’s] 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.” As expected in theory, and as shown by the back-test results previously provided and provided in this submittal, the failure rate tends to be around 3% when the CI is 97%, and

around 1% when the CI is 99%.⁴¹ Both of those approaches yield a large reduction in the failure rate relative to the 8-11% failure rates that the analyses found⁴² when applying the previously effective FTR Credit Requirement.

The overall reduction in Collateral is not as meaningful as the failure rate, as noted above, in indicating how well Members are protected from risk. And no party has suggested that PJM should reverse the elimination of the undiversified adder or the proposal to allow positive Mark-to-Auction adjustments to reduce the FTR Credit Requirement, so PJM has not included those factors in its back-testing for this submittal.⁴³

As to the third “component” noted in this question, i.e., moving from a 97% CI to a 99% CI, the back-testing shows that the incremental increase in Collateral is not proportionate to the incremental reduction in the dollar amount of the failure rate. Moreover, given that most shortfalls do not result in defaults, the difference in the absolute dollar

⁴¹ June 3 Filing at 22; Drauschak Aff. at 11.

⁴² June 3 Filing at 23; Drauschak Aff. at 16.

⁴³ The reduction in overall Collateral from the previously effective FTR Credit Requirement to the HSIM version of the FTR Credit Requirement does not correlate to any reduction in protections to PJM Members from Collateral shortfalls. To the contrary, adoption of the HSIM approach *increases* the protection for Members from Collateral shortfalls due to portfolio risks. Members are better protected from defaults by the HSIM approach because it matches an FTR Market Participant’s credit requirement with the risk of that participant’s FTR paths. Paths with greater price volatility result in a higher credit requirement. PJM’s prior analysis of the Collateral reductions associated with elimination of the undiversified adder and the proposal to allow positive mark-to-auction adjustments was offered only to correct any suggestion from the February 2022 Order that the reduction in overall Collateral from the previously effective FTR Credit Requirement to the Revised FTR Credit Requirement was primarily attributable to the choice of a 97% CI in the Revised FTR Credit Requirement. That analysis was not intended to suggest that the overall Collateral level is closely correlated with protection of members from FTR portfolio risks. Indeed, the undiversified adder provides an excellent illustration of a component that can increase collateral but not reduce risk to Members. The analysis in the June 3 Filing showed that a large portion of the decrease in overall Collateral was a result of the removal of the undiversified adder. But the independent consultant report highlighted that the undiversified adder is not a proxy for risk and is not using a statistical approach to correlate path risk with the margin calculation. See Robert Anderson & Neal Wolkoff, *Report of the Independent Consultants on the GreenHat Default*, PJM Interconnection, L.L.C., Appendix at 1, (Mar. 26, 2019), <https://www.pjm.com/-/media/library/reports-notices/special-reports/2019/report-of-the-independent-consultants-on-the-greenhat-default.pdf>. And the back-testing results bore this out: the risk of Collateral shortfalls decreased dramatically even though the Collateral level was reduced (to a large degree) from elimination of the undiversified adder.

amounts of defaults plausibly resulting from 99% CI and those plausibly resulting from a 97% CI is not substantial, as shown in the response to Question No. 5.b.

- 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.” PJM’s June Filing of the FTR Credit Revisions provides back-test failure rate summaries 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.**

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.**

It is not possible to provide reliable monthly back-test data for the past ten years. One major impediment to that effort is that the farther back in time one goes, the less history there is to include in the HSIM. In this context, “history” begins with 2008 and means FTR auctions, of which there are twelve monthly, Balance of Planning Period auctions each year, four annual auctions each year, and three long-term auctions each year prior to the 2020/2023 auction. Thus, back-testing monthly auctions ten years ago means auctions that occurred in 2012 or 2013, employing “history” in the HSIM of only four to five years of auctions, i.e., forty-eight to sixty monthly auctions, less than twenty annual auctions and less than fifteen long-term auctions. Those sample sizes are insufficient to provide a sound basis for assessing the historic volatility of particular FTR paths and developing Collateral requirements that

meaningfully cover possible portfolio losses. Even back-testing 2015 auctions extends the historic period only to seven years, which still poses concerns of an insufficient sample size.⁴⁴

While PJM therefore does not advise, and has not undertaken, back-testing for the earlier years in the requested ten-year period, PJM has, and is presenting in this response, back-test analyses results beginning in 2016. Specifically, as described in more detail below, PJM provides with this response:

- The results of back-test analyses prepared by Dr. Alex Eydeland during the extended stakeholder period that preceded submission of PJM’s section 205 application in Docket ER22-703, addressing monthly auctions from February 2016 through April 2020;
- The results of Dr. Eydeland’s analysis back-testing the Collateral requirement that the Revised FTR Credit Requirement would have required for the GreenHat Energy, LLC (“GreenHat”) FTR portfolio on which GreenHat defaulted in 2018; and
- The results of PJM’s back-test analyses of the months of December 2021, January 2022, June 2022, and July 2022, supplementing the back-test analyses PJM provided in the June 3 Filing for February 2022 and March 2022.

Each of the monthly analyses includes the CI (which is how PJM interprets the question’s reference to “the model’s risk estimate”), the percentage of portfolios that experienced a back-test failure, and the observed initial margin deficit, which PJM presents

⁴⁴ These sample sizes are so small that customary data analysis techniques, such as a standard deviation method with a cushion factor adjustment, could not be applied in a way that would make the results sufficiently reliable.

as the average shortfall between the margin required by the HSIM and the portfolio loss, for all portfolios that had a shortfall in the subject month. The portfolios in each subject month included all positions—monthly, long-term and annual positions. The incremental back-testing of these monthly back-test analyses performed by PJM for this submittal, including compilation of data, data validation, development, run, review and complete, required approximately forty-five days of data engineering staff-hours. Although PJM is not able to provide ten years of monthly back-test analysis results in this filing, the analyses which PJM is providing here support sound conclusions about the expected performance of the HSIM method under both a 97% CI and a 99% CI. As discussed in the Conclusions section below, back-test analyses conducted by PJM and those conducted by Dr. Eydeland produce comparable results as to both failure rates and the estimated magnitude of shortfalls.

In the following sections, PJM describes in more detail Dr. Eydeland's 2016-2020 back-testing, PJM's back-testing of six months during the period December 2021 to July 2022, conclusions and cost-benefit implications of that back-testing, and the assessment of how the model might have performed under stress conditions (including how it would have applied to the GreenHat portfolio).

Dr. Eydeland's February 2016 – April 2020 Back-Test Analyses

Dr. Eydeland back-tested the HSIM to analyze if the initial margin collected for a given FTR Market Participant's portfolio was sufficient to cover potential losses over the Liquidation Period (defined as two auction cycles), should the FTR Market Participant default following an FTR auction. Dr. Eydeland estimated the Collateral that would have been collected for monthly FTR Auctions occurring in February 2016 through April 2020 had a 97% CI or a 99% CI been in place for each of those auctions. This testing was limited to monthly positions since the long-term auction data has limited sample points.

Under a 97% CI, the analysis determined that the failure rate for the fifty-one months in the study period averaged 1.8% over the tested periods and resulted in an average shortfall for all observed shortfalls over all months in the study period (where the shortfall represents the actual settled losses over the FTR Credit Requirement) of \$2.6 million. There were 140 failures over this time period.

Under a 99% CI, the analysis determined that the failure rate for the fifty-one months in the study period averaged 1.0% over the tested periods and resulted in an average shortfall for all observed shortfalls over all months in the study period of \$1.4 million. There were seventy-seven failures over this time period.

PJM's December 2021, January 2022, February 2022, March 2022, June 2022, and July 2022 Back-Test Analyses

PJM has estimated the Collateral that would have been collected for the December 2021, January 2022, February 2022, March 2022, June 2022, and July 2022 FTR Auctions, had a 97% CI or a 99% CI been in place for each of those auctions. The resulting Collateral was compared against the gains and losses the portfolios obtained through the auctions actually experienced.

The results of PJM's analyses are shown in the tables below.

97% CI	Credit Requirement <i>Dollars in millions</i>	Failure Rate	Failures	Shortfall <i>Dollars in millions</i>
December 2021	\$1,744.2	2.6%	8 failures over 303 portfolios	\$7.5
January 2022	\$1,211.8	1.3%	4 failures over 305 portfolios	\$0.9
February 2022	\$1,256.6	3.6%	11 failures over 308 portfolios	\$2.3
March 2022	\$968.5	3.0%	9 failures over 301 portfolios	\$0.6
June 2022	\$1,703.6	2.6%	8 failures over	\$1.4

			303 portfolios	
July 2022	\$1,171.4	3.8%	12 failures over 312 portfolios	\$5.8

Under a 97% CI, PJM's analysis determined that the failure rate averaged 3% over the tested periods and resulted in an average shortfall of \$3.1 million.

99% CI	Credit Requirement <i>Dollars in millions</i>	Failure Rate	Failures	Shortfall <i>Dollars in millions</i>
December 2021	\$2,432.7	2.0%	6 failures over 303 portfolios	\$5.0
January 2022	\$1,676.5	1.0%	3 failures over 305 portfolios	\$0.2
February 2022	\$1,602.0	2.3%	7 failures over 308 portfolios	\$0.6
March 2022	\$1,328.6	-	No failures over 301 portfolios	-
June 2022	\$2,185.1	2.0%	6 failures over 303 portfolios	\$0.8
July 2022	\$1,500.6	1.0%	3 failures over 312 portfolios	\$0.7

Under a 99% CI, PJM's analysis determined that the failure rate averaged 1% over the tested periods and resulted in an average shortfall of \$1.2 million.

Cost-Benefit Implications of PJM's 2021-2022 Back-Test Analyses

The back-testing analysis results presented above for six of the eight months from December 2021 to July 2022 show that moving from a 97% CI to a 99% CI provides \$1.9 million of additional shortfall protection (on average). By contrast, in the June 3 Filing, PJM calculated that it would cost FTR Market Participants an additional \$22.4 million using a low debt cost estimate, or \$46.8 million using a high debt cost estimate, if the Revised FTR Credit Requirement employed a 99% CI instead of a 97% CI.⁴⁵ Based on this data, it is reasonable

⁴⁵ June 3 Filing at 21.

to conclude that the cost of maintaining Collateral at the 99% CI exceeds the benefit of using the higher CI. Said differently, there is a *de minimis* difference in calculated shortfalls between the 97% CI and 99% CI; however, the Collateral requirement is significantly increased by moving from a 97% CI to a 99% CI.

It is worth noting that cost of Collateral is sensitive to interest rates. The analysis supporting the cost of Collateral in the June 3 Filing, and utilized here, was based on published London Interbank Offer Rates (“LIBOR”) as of March 25, 2022, plus a spread to reflect FTR Market Participants’ credit ratings. The cost based on current rates would be substantially higher due to rising interest rates. LIBOR has increased approximately 260 basis points (i.e., from 0.45% to 3.05 %) over the period from March 25, 2022, to September 21, 2022. This suggests that the basis point move in LIBOR would increase the cost of Collateral by approximately 25%, even though there would have been no change in the shortfall reduction (i.e., “the benefit”).

Stressed Period

The question above quotes the February 2022 Order as finding that PJM failed to “demonstrate whether the HSIM would operate as represented across extreme events.” In light of the remaining discussion in the February 2022 Order, PJM understands the Commission to be referring to the increment between a 97% CI and a 99% CI. The question then asks PJM to “include stressed periods and identify the periods where stressed market conditions were observed.” To the extent this question is defining “extreme tail events” or “stressed periods” as potential portfolio losses that are captured by a 99% CI but not captured by a 97% CI, PJM’s back-testing described above provides the requested response.

To the extent the question is asking about stressed, extreme, or tail events that are *not captured* by a 99% CI, then the question is highlighting an issue that goes beyond the

use of an HSIM with either a 97% or 99% CI. Indeed, in considering that sort of extreme or tail events, it is important to note that the difference in Collateral shortfall between a 97% CI and a 99% CI can be dwarfed by the potential Collateral shortfall impact of an event that is above 99% CI, indeed, even above 100% CI, because it is something not yet observed in the fourteen-year historical record considered by the HSIM. Tail event or residual risks exist in any model, with any CI. These risks will need to be addressed and mitigated using means outside the HSIM (regardless of the selected CI) by PJM and PJM Members to protect the integrity of the FTR market. Potential risks of this type could include, but are not limited to, increased gas prices resulting in multiple Market Participants filing for bankruptcy, liquidation periods taking longer than expected, future events that have not happened in the past and more precise reviews of generation and transmission outages.

Because, by design, HSIM cannot assess Collateral for extreme events that have not occurred in the defined historic period, PJM can and will rely on the other tools provided under the Tariff, such as the “unreasonable credit risk” provision of the Tariff, term and tenor limits, use of production cost models and risk premiums based on underlying credit profiles to help mitigate this source of risk exposure.

PJM also emphasizes that back-testing the HSIM is not a “one and done” process. PJM plans to continually evaluate the model’s performance versus the model’s intention. PJM therefore will continue to back-test the model monthly to ensure shortfall rates are in line with expectation. The results of additional back-testing will provide insights that may be applied as future refinements, and PJM anticipates having a dynamic process with the PJM Members where results of back-testing are shared.

One other possible candidate for extreme, stressed, or tail conditions would be an

event like the GreenHat default, which has been the only source of a default allocation of an FTR portfolio since 2016. Importantly, the GreenHat default resulted from a concerted campaign of fraud, as found by the Commission.⁴⁶ There are limits to designing rules to prevent adverse effects from those that are determined to break the rules.

Specifically, PJM engaged Dr. Eydeland during the stakeholder process that preceded the December 2021 Filing to perform back-testing of the GreenHat portfolio. Dr. Eydeland estimated the Collateral that would have been collected had the GreenHat portfolio been subject to HSIM at a 97% CI or a 99% CI at the time the portfolio was established. The analysis determined that Collateral required at portfolio establishment would have been \$21.1 million under a 97% CI and \$28.7 million under a 99% CI. By comparison, PJM held approximately \$0.5 million of Collateral for the GreenHat portfolio under the FTR Credit Requirements in place in 2016.

Dr. Eydeland compared the resulting Collateral estimated for the GreenHat portfolio from inception to the time of default (at a 97% CI and a 99% CI) against the gains and losses the portfolio obtained through the auction actually experienced. From February 2016 (inception) to May 2018 (default). He found that the required Collateral for the GreenHat portfolio in the HSIM would have grown to \$173.6 million under a 97% CI and \$232.7 million under a 99% CI.

The results of Dr. Eydeland's analysis are shown graphically below.

The total value of the GreenHat default was \$179.6 million. Back-testing performed over the GreenHat portfolio therefore provides an estimated 97% coverage of the default,

⁴⁶ *GreenHat Energy, LLC*, 177 FERC ¶ 61, 073 (2021).

or \$6.0 million shortfall, if HSIM at a 97% CI had been utilized at the time GreenHat positions were procured through June 2018. By contrast, an HSIM with a 99% CI would have substantially over-recovered the amount of the eventual default, resulting in \$44.1 million in excess Collateral. In practice, an entity like GreenHat probably would have exited the market much sooner rather than pay the collateral that accurately reflected the risks it was imposing on the market—which also would have greatly reduced if not eliminated any eventual default.

While this analysis considers only a single FTR Market Participant, it conveys important lessons on the choice of a CI that will be applicable to all Participants. First, the GreenHat portfolio by itself resulted in a very large default that was borne by the Members, and if HSIM with a 97% CI had been in place, almost all of that default would have been prevented. Second, because defaults are infrequent, any given Default Allocation Assessment is most likely to result from a single participant's default. Third, setting the CI *too high* can produce excess costs because the required Collateral can exceed even an extreme default. Indeed, because using a 99% CI in the HSIM for the GreenHat portfolio substantially over-recovered costs, it follows that the required Collateral would have been too high for 99% of FTR Market Participants.

- 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% CIs (please provide details including dates, risk estimates of model, and default size)?**

For the December 2021, January 2022, February 2022, March 2022, June 2022, and July 2022 back-test periods, the estimated total shortfall, along with the impact of the single largest and two largest shortfalls of FTR counterparties is shown in the tables below.

97% CI	Total Shortfall <i>Dollars in millions</i>	Single Shortfall <i>Dollars in millions</i>	Largest Two Shortfalls <i>Dollars in millions</i>
December 2021	\$7.5	\$4.6	\$5.7
January 2022	\$0.9	\$0.7	\$0.9
February 2022	\$2.3	\$1.3	\$1.8
March 2022	\$0.6	\$0.4	\$0.5
June 2022	\$1.4	\$0.7	\$1.1
July 2022	\$5.8	\$2.3	\$3.8

99% CI	Total Shortfall <i>Dollars in millions</i>	Single Shortfall <i>Dollars in millions</i>	Largest Two Shortfalls <i>Dollars in millions</i>
December 2021	\$5.0	\$3.2	\$4.0
January 2022	\$0.2	\$0.2	\$0.2
February 2022	\$0.6	\$0.3	\$0.4
March 2022	-	-	-
June 2022	\$0.8	\$0.7	\$0.8
July 2022	\$0.7	\$0.7	\$0.7

The shortfall amount does not mean that Members must pay the cost of the shortfall. The shortfall estimated is the difference between FTR Participants’ portfolio losses and their Collateral resulting specifically from the FTR Credit Requirement. The cost to Members depends on how much of that shortfall results in a FTR Participant payment default. Default allocations of a FTR portfolio happen very infrequently and the GreenHat event has been the only default allocation of a FTR portfolio since 2016.⁴⁷

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

As further described in Section III herein, PJM is providing the requested KPMG Validation Report summarized in the Drauschak Affidavit (“KPMG Report”) pursuant to

⁴⁷As noted in the Feb 2022 Order, a default occurred in PJM’s FTR market in January 2022, but that default did not result in a default allocation to Members.

18 CFR §388.112.⁴⁸ Pursuant to Commission rules, PJM is requesting privileged treatment for all of the information contained in the KPMG Report. Further, PJM is requesting that the KPMG Report be treated as privileged material and exempt from mandatory disclosure requirements of the Freedom of Information Act.

7. PJM states that “[t]he increased collateral required by a 99% CI falls disproportionately on FTR Participants that serve load.”

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.” Is this definition identical to what PJM describes as “FTR Participants that serve load?”**

The above definition of “LSE” is identical to the definition in the RAA.⁴⁹ Question No. 7, Table 1 below takes the cost/benefit analysis included in the June 3 Filing and re-categorizes the data between signatories of the RAA and non-signatories of the RAA for Collateral amount and corresponding costs of capital at 97% CI and 99% CI.

⁴⁸ 18 C.F.R. § 388.112 (Requests for Privileged Treatment for Documents Submitted to the Commission).

⁴⁹ PJM Interconnection, L.L.C. Rate Schedule FERC No. 44, Reliability Assurance Agreement Among Load Serving Entities in the PJM Region Article 1, Definition of Load Serving Entity or LSE: “Load Serving Entity” or “LSE” shall mean any entity (or the duly designated agent of such an entity), including a load aggregator or power marketer, (i) serving end-users within the PJM Region, and (ii) that has been 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 Region. Load Serving Entity shall include any end-use customer that qualifies under state rules or a utility retail tariff to manage directly its own supply of electric power and energy and use of transmission and ancillary services.

Question No. 7, Table 1

	Collateral 97% CI <i>Dollars in million</i>	Collateral 99% CI <i>Dollars millions</i>	Percentage Increase in Collateral – 97% to 99%	Estimated Cost of Capital 97% to 99% Low Rate <i>Dollars in millions</i>	Estimated Cost of Capital 99% to High Rate <i>Dollars in millions</i>	Percentage Increase in Estimated Cost of Capital – Low Rate to High Rate
RAA Signatory	\$583.7	\$917.0	57%	\$11.9	\$26.6	124%
Non- RAA Signatory	\$636.9	\$888.9	39%	\$10.5	\$20.2	92%
Total	\$1,220.6	\$1,805.9	48%	\$22.4	\$46.8	109%

Question No. 7, Table 1 demonstrates that the increase in the amount of Collateral required under HSIM moving from a 97% CI to a 99% CI increases 57% for RAA signatories as compared to 39% for non-RAA signatories. The increase in the cost of capital associated with a change from 97% CI to a 99% CI is 124% for RAA signatories and 92% for non-RAA signatories. This analysis supports PJM’s contention that the increase in Collateral and associated costs are higher for Members that are classified as LSEs under the RAA. However, there are PJM Members who are signatories to the RAA who may not equate serving load as their primary LOB. Consequently, PJM also analyzed the data using two other classifications.

First, PJM can split the Members that participate in the FTR market into two groups—those that self-identify as Financial Traders, and those that do not. That division results in one group that very likely does not serve load (Financial Traders), and everyone else. Second, PJM’s account records show which Members have an assigned Peak Load for purposes of Network Integration Transmission Service (“NITS”). As these Members

are securing transmission to serve loads, it is reasonable to assume they serve loads (which could be either retail or wholesale). Thus, another reasonable approach to assessing which Members that participate in the FTR market serve loads is to divide those participants into two groups—those with an assigned NITS Peak Load and those without an assigned NITS Peak Load.

PJM shows in Question No. 7, Table 2 and Table 3, the results of adopting these alternative approaches to assessing the cost/benefit impact on Members that serve load.

Question No. 7, Table 2 shows the increase in the Collateral requirement for a) Members that are Financial Traders; and b) Members in all other LOB. As can be seen, Collateral for all Members increases, when replacing a 97% CI with a 99% CI, from approximately \$1.2 billion to \$1.8 billion, which is a 48% overall increase in Collateral as a result of the switch to a 99% CI. The Financial Trader category sees a below-average percentage increase in Collateral, i.e., 38%. By contrast, all Members that are not Financial Traders see an above-average percentage increase in Collateral, i.e., 58%. By this rough approximation, all Members see a large percentage increase in their required Collateral from the move to a 99% CI, but self-identified Financial Traders see a significantly lower percentage increase in their required Collateral than everyone else.

Question No. 7, Table 2

	Collateral 97% CI <i>Dollars millions</i>	Collateral 99% CI <i>Dollars millions</i>	Percentage Increase in Collateral – 97% to 99%	Estimated Cost of Capital 97% to 99% Low Rate <i>Dollars in millions</i>	Estimated Cost of Capital 97% to 99% High Rate <i>Dollars in millions</i>	Percentage Increase in Estimated Cost of Capital – Low Rate to High Rate
Financial Trader	\$619.0	\$856.0	38%	\$9.4	\$19.0	102%
All Other LOB	\$601.6	\$949.9	58%	\$13.0	\$27.8	114%
Total	\$1,220.6	\$1,805.9	48%	\$22.4	\$46.8	109%

Question No. 7, Table 3 shows the increase in the Collateral requirement for a) Members that have an assigned NITS Peak Load; and b) Members that do not have a NITS Peak Load. The total increase in Collateral by going from a 97% CI to a 99% CI is the same as in the prior table, as is the average percentage increase across all Members of 48%. Here, those that *do not* have a NITS Peak Load see a below-average percentage increase in their required Collateral, i.e., 42%. By contrast, those that *do* have a NITS Peak Load see an above-average percentage increase in their required Collateral, i.e., 60%. Again, while all Members face a large percentage increase in Collateral as a result of using a 99% CI, FTR participants that are most likely serving load see a much higher percentage increase in their required Collateral.

Question No. 7, Table 3

	Collateral 97% CI <i>Dollars millions</i>	Collateral 99% CI <i>Dollars millions</i>	Percentage Increase in Collateral – 97% to 99%	Estimated Cost of Capital 97% to 99% Low Rate <i>Dollars in millions</i>	Estimated Cost of Capital 99% to 99% High Rate <i>Dollars in millions</i>	Percentage Increase in Estimated Cost of Capital – Low Rate to High Rate
NITS PL	\$419.2	\$671.5	60%	\$9.0	\$20.2	124%
No NITS PL	\$801.4	\$1,134.4	42%	\$13.4	\$26.6	98%
Total	\$1,220.6	\$1,805.9	48%	\$22.4	\$46.8	109%

All three of the analyses above (along with PJM’s analysis of this issue in the June 3 Filing) demonstrate that regardless of the methodology used to assess the impact to LSEs, there is a greater cost borne by that classification when moving to a 99% CI. This differentiation of the Collateral cost impact is independent of changes in the avoidance of possible default associated with the change from a 97% CI to a 99% CI.

- b. Referring to the sector designations in Figure 2 (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?”

PJM responded to this question in the answer to Question No. 7.a. The RAA definition of LSE tracks that in the PJM Manual quoted by the question.

- 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?”

PJM responded to this question in the answer to Question No. 7.a.

- 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:” (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?

In response to subpart (i), disproportionate means an above-average percentage increase in the Collateral required as a result of moving from a 97% CI to a 99% CI. In the June 3 Filing, the sectors and sub-groups that PJM assessed were likely to serve load faced a percentage increase of 55% in their Collateral requirement as a result of the switch from a 97% CI to a 99% CI, which was notably higher than the average percentage increase across all FTR participants of 48% and higher still than the percentage increase in required

Collateral of 38% and 47% for those sectors and sub-groups that are less likely to serve load.⁵⁰ The other three approaches, described above, see a similar, but slightly higher, percentage increase in the Collateral requirement for the group that is most likely to serve load, i.e., a 57% increase under the first approach, a 58% increase under the second approach, and a 60% increase under the second approach. The average Collateral increase across all FTR participants is the same, i.e., 48%.

In response to subpart (ii), the disproportionate impact on Members that serve load is consistent with the consequence, as PJM described in its response to Question No. 2. That is, that FTR Participants with less diversified FTR portfolios will be seen by the HSIM as presenting relatively greater risk of loss, and thus are likely to have a higher Collateral requirement. In general, FTR Participants that are obtaining FTRs to hedge congestion on paths between physical resources and physical loads at fixed locations are likely to have less diversified portfolios, compared, for example, to financial traders, who may be more likely to construct FTR portfolios that hedge different FTR positions against one another at a variety of flexible locations. This basic difference likely has an impact on Collateral levels at the 97% CI. But the increase from a 97% CI to a 99% CI adds a crucial factor because the portfolio loss impact of increasingly improbable events is non-linear. And the impact on a less diversified or more volatile portfolio will be markedly greater, because those portfolios will be even more sensitive to the loss impacts of highly improbable (i.e., up to a 99% CI) events.

⁵⁰ June 3 Filing at 25-26.

8. **PJM’s cost-benefit analysis compares the costs and benefits of moving from a 97% CI to a 99% CI, 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 CI of 99 percent instead of 97 percent.” The Market Monitor argues that PJM did not conduct a parallel analysis for the incremental benefits of using the 99% instead of the 97% CI. 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 CI. The difference between maximum potential shortfall using the 99% instead of the 97% CI would be the incremental benefit.**
- 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.**

Please see PJM’s response to Question No. 5.a. PJM shows there the results of multiple back-testing analyses which estimate the failure rates and Collateral shortfalls that would have occurred if the HSIM with either a 97% CI or a 99% CI had been in place during the identified months, and FTR positions had settled based on historic data. The back-tests include separate back-testing analyses of six recent months, a fifty-one-month period from February 2016 to April 2020, and the GreenHat portfolio from first incurrence to default.

These analyses therefore provide a basis for comparing costs and benefits over a wide range of events under both a 97% CI and a 99% CI. The value of back-testing is that it applies a proposed rule set to a historic period, determines what those as-applied rules would have required—i.e. a level of collateral—and then compares that collateral against the portfolio losses the Market Participant in fact incurred over that time period. During

the back-tested time periods, there would have been a variety of system conditions and a variety of weather conditions. PJM's analyses also include the only FTR default that resulted in a Default Allocation Assessment to Members since 2016.

PJM does not understand how it would conduct a parallel analysis across a wide range of "possible" events in a fashion that would produce reliable results that could support sound policy decisions. The approach seems to require multiple assumptions about hypothetical scenarios, such that the assumptions made could be highly deterministic of the result reached. It also seems likely that using a hypothetical or Monte Carlo-style analysis to define a hypothetical maximum possible shortfall, and then applying a 99% CI to that, would involve a high risk of requiring collateral far in excess of what is needed, with adverse implications for the cost of participation in PJM's markets.⁵¹ Any possible use of a Monte Carlo approach would require considerable time and analysis.

Last, PJM notes that it does not have a ready source of reliable information regarding FTR Collateral cost and FTR default impacts on retail customers, or on the class of entities defined by the characteristic that they are not FTR Market Participants.

- 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 over the same period as back-testing was performed, i.e. the past 10 years.**

PJM provided this information in the response to Question No. 5.a.

⁵¹ PJM reviewed the pros and cons of the use of a Monte Carlo Analysis in its December 2021 Filing and found that an HSIM approach was preferable to a Monte Carlo approach for the PJM FTR market. Affidavit of Dr. Alex Eydeland on Behalf of PJM Interconnection, L.L.C. (Attachment G) at 4.

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. OPSI challenges the methodology of PJM’s cost-benefit analysis, and 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.**
- 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.**

As mentioned in the response to Question No. 8.a, PJM does not have reliable information on the impacts of FTR markets on retail customers. PJM can generally state that FTR’s provide market participants the ability to attain a better price certainty when delivering energy across the grid. The benefits stemming from a more liquid and robust FTR market resulting from decreased capital costs would inure to all 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.**
 - 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.**

PJM used a 5% and 10% default assumption (along with a “breakeven” 81% default assumption) to help define the benefit to PJM Members of an increased Collateral requirement in the cost/benefit analysis. The only readily identifiable economic benefit to Members (and their customers) from using a 99% CI is the potential for avoidance or reduction of a Default Allocation Assessment. No party to this proceeding has explained how Members (or their customers) obtain any other economic benefit from the higher Collateral requirement that would be associated with use of a 99% CI. In particular, the IMM does not explain how a Collateral shortfall, standing alone, imposes *any* costs on Members or any other party.

In fact, a Collateral shortfall does not impose any costs on any party—other than the FTR Market Participant with the shortfall, who must provide additional Collateral to avoid default. Because there is no cost imposed on other parties from a Collateral shortfall, there is no potential benefit to other parties from avoiding or reducing any cost. The IMM’s position necessitates ignoring the evident fact that in the vast majority of cases, a market participant that experiences a collateral shortfall makes up the shortfall and avoids default.

The record of this case already supports this self-evident fact: PJM's back-testing analyses comparing the Revised FTR Credit Requirement to the previously effective rules showed failure rates, i.e., occasions when a participant's market losses exceeded its required Collateral, on the order of 8-11% under the previously effective rules. By comparison, defaults—while each one is a serious concern—have occurred at nothing like that rate of frequency.

While it is not easy, given the infrequency of default, to quantify precisely how infrequent future defaults will be relative to future collateral shortfalls, it is reasonable to assume for purposes of the cost/benefit analyses, that such relative frequency is quite low, given the (thankfully) very low relative incidence of defaults. That is why PJM used the 5% and 10% figures. But as an additional indication, PJM also calculated the percentage of collateral shortfalls becoming defaults that would be needed for the cost of collateral to equal the benefit of avoided defaults. In the June 3 Filing, based on debt cost data from March 2022, PJM found that break-even percentage to be 81%.⁵² In other words, 81% of collateral shortfalls would have to result in defaults before the avoided cost of Default Allocation Assessments would equal the costs of carrying additional collateral. There is no evidence in this case that defaults have occurred or will occur at anything like that extreme frequency.

Nothing about the practices of DCOs would change any of the above facts about the costs and benefits *in PJM's FTR market*, of using a 99% CI instead of a 97% CI. The first and most obvious distinction is that PJM is using this assumption concerning defaults *in a cost/benefit analysis and not in the HSIM calculation of Collateral requirements*. PJM

⁵² Drauschak Aff. at 17-18.

cannot speak to DCO's internal processes for estimating the likelihood of defaults, but it is safe to say that use of an HSIM to calculate Collateral requirements is not in and of itself a cost/benefit analysis. Again, the cost/benefit analysis is not a component of PJM's HSIM; it is instead a means to assess an appropriate level for *an input* into that model, i.e., the CI. Neither the IMM nor any other party has provided any evidence that any DCO embeds or employs a cost/benefit analysis in the daily operation of their HSIM to determine margin requirements.

- 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." OPSI emphasizes that "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.**
 - 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.**

Allocation of default assessments is governed by section 15.2.2 of the Operating Agreement, which is not at issue in this proceeding.⁵³ In simplified terms, that required allocation is based 10% on the number of Members on the date of the default declaration, and 90% on each Member's gross billing activity (i.e., the absolute value of charges and credits on the invoice) for the month of default and the two previous months. The share

⁵³ See Operating Agreement, section 15.2.2.

that is based on Member headcount is capped at \$10,000 per Member per year (or per certain single defaults that span multiple years), with any amounts over \$10,000 per Member recovered based on the gross billing activity factor.

The allocation among Members of any default—whether related to the FTR Credit Requirement, a Collateral shortfall under HSIM, or from any other cause or factor—therefore depends largely on Members’ gross billing activity around the time of the default. The Operating Agreement prescribes no distinct allocation to LSEs *per se*. Moreover, LSEs are not routinely grouped in a distinctly identifiable way in PJM’s Member billings because there is no LSE sector in the Members Committee, Members that are LSEs can freely elect to be in any one of a number of different sectors,⁵⁴ and even Members that are signatories to the RAA might not serve load as their primary (or major) LOB.⁵⁵ Accordingly, PJM would need to conduct substantial analyses, identifying all LSEs across the Member sectors and excluding all power marketers from evaluation, in order to replicate the impact of an allocation of a default shortfall among LSEs as PJM understands the Commission’s use of that term. PJM describes in response to Question No. 7.a alternative ways to approximate LSE impacts from hypothetical default allocations. But it is worth noting that actual allocations to any Member or group of Members will also be greatly influenced by their gross billing activity in the three months leading up to and including the month the default is declared—which may or may not be primarily attributable to serving load.

As an administrator only of wholesale markets, PJM does not have visibility into whether, or how, Default Allocation Assessments are passed through to retail customers.

⁵⁴ Operating Agreement, section 11.6

⁵⁵ See PJM’s response to Question No. 7 above.

But it seems reasonable to expect that any LSE that is able to pass through the costs of an infrequent Default Allocation Assessment is also highly likely to be able to pass through its capital costs of maintaining FTR-related Collateral as part of its cost of capital and cost of debt that is a regular ongoing cost of service.

Beyond the obvious fact that PJM is not directly involved in retail service, other complications make this assessment of default pass-through challenging for PJM. The auctioning of load in deregulated states, for example, prevents PJM from ascertaining whether and to what extent the risk of an FTR default allocation is passed through to end users or alternatively, whether successful load bidders assume the risk of FTR losses.

There is potentially greater visibility into the pass-through of defaults in regulated states based on the availability of public data. Even there, however, the available information appears to vary by state, and might even vary among LSEs within a single state. For example, in Ohio the available information suggests some degree of uncertainty about whether *all* consumers being served in Ohio bear the costs of a default. In the case of one Ohio Electric Distribution Utility-LSE, it appears default charges may be borne by consumers.⁵⁶ Only recently did it become clear that another Ohio Electric Distribution Utility-LSEs customers would bear the costs of a default.⁵⁷ But it is not clear from publicly available records whether the customers of any other Ohio Electric Distribution Utilities-LSEs would similarly bear such default costs. Moreover, it is also not immediately clear the extent to which the consumers in any of Ohio's many cooperatives or municipal utilities bear the costs of a default.

⁵⁶ See, e.g., *In the Matter of the Application of the Dayton Power & Light Co. for Approval of Its Transmission Cost Recovery Rider*, No. 09-256-EL-UNC, 2009 WL 1517058, at *3, P 14 (F.E.D.A.P.J.P. May 27, 2009).

⁵⁷ See *In the Matter of the Application of Ohio Power Co. to Update Its Basic Transmission Cost Rider*, No. 19-133-EL-RDR, 2019 WL 1437054, at *2 (F.E.D.A.P.J.P. Mar. 27, 2019).

III. REQUEST FOR CONFIDENTIAL TREATMENT

PJM seeks confidential treatment of report referenced in Question No. 6 of this response (i.e., the KPMG Report). The KPMG Report, included as Attachment A to this response, contains market-sensitive, resource-specific data—namely, description of proprietary code developed by a third-party vendor, identification and description of consultant work processes and validation techniques, and results of individual Members back-testing, including Member identification and projected historical FTR portfolio failure rates that should not be disclosed to the public, and to marketing personnel in particular.⁵⁸ Usage of this market-sensitive data must be for litigation purposes only, not for commercial purposes. Thus, PJM is requesting confidential treatment of the KPMG Report, with a restriction against marketing personnel accessing this data. PJM has provided as Attachment B to this submittal a proposed protective agreement that parties to this proceeding may execute and agree to abide by in order to obtain confidential materials in this proceeding.

⁵⁸ See *ISO New England Inc.*, 148 FERC ¶ 61,137, at PP 25–26 (2014) (granting confidential treatment to market-sensitive data subject to a protective order that provides more limited sharing of information with competitive duty personnel); *Cal. Indep. Sys. Operator Corp.*, 115 FERC ¶ 61,172, at P 138 (2006) (“We concur that market-sensitive data submissions . . . should be afforded confidential treatment.”).

IV. CONCLUSION

For the reasons set forth above and in PJM's other pleadings in this proceeding, the Revised FTR Credit Requirement is just and reasonable.

Respectfully submitted,

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October 3, 2022

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document on each person designated on the service list compiled by the Secretary in this proceeding.

Dated at Washington, D.C., this 3rd day of October 2022.

/s/ Elizabeth P. Trinkle
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Attorney for
PJM Interconnection, L.L.C.

Attachment A

KMPG Report

[REDACTED]

Attachment B

Protective Agreement

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

PJM Interconnection, L.L.C.)	Docket Nos. ER22-2029-000
)	EL22-32-000
)	

(consolidated)

PROTECTIVE AGREEMENT

This Protective Agreement (“Agreement”) is entered into this ___ day of ____, by and between PJM Interconnection, L.L.C. (“PJM”) and _____ (“Intervenor”), and shall govern the use of all Protected Materials produced by PJM to Intervenor or vice versa, in connection with the consolidated proceedings before the Federal Energy Regulatory Commission (“Commission”) in Docket Nos. ER22-2029-000, *et al.* PJM and Intervenor are sometimes referred to herein individually as a “Party” or joint as the “Parties.”

1. The Commission’s regulations¹ and its policy governing the labelling of controlled unclassified information (CUI),² establish and distinguish the respective designations of Privileged Material and CEII.
2. PJM filed Privileged Materials in commission Docket Nos. ER22-2029-000, *et al.* (the “proceeding”) and Intervenor is a Participant in such proceeding, as the term Participant is defined in 18 C.F.R. § 382.102(b), or has filed a motion to intervene or a notice of intervention in such proceeding. PJM and Intervenor enter into this Agreement in accordance with their respective rights and obligations set forth in 18 C.F.R. § 388.112(b)(2). Notwithstanding any order terminating such proceeding, this Agreement shall remain in effect until specifically modified or terminated by the Commission or court of competent jurisdiction.
3. This Agreement applies to the following two categories of Privileged Materials: (A) a Party *may* designate as Privileged Material any material which customarily is treated by that Participant as commercially sensitive or proprietary or material subject to a legal privilege, which is not otherwise available to the public, and which, if disclosed, would subject that Participant or its customers to risk of competitive disadvantage or other business injury; and (B)

¹ Compare 18 C.F.R. § 388.112, with 18 C.F.R. § 388.113.

² *Notice of Document Labelling Guidance for Documents Submitted to or Filed with the Commission or Commission Staff*, 82 Fed. Reg. 18,632 (Apr. 20, 2017) (issued by Commission Apr. 14, 2017).

a Party *must* designate as CEII, any material that meets the definition of that term as provided by 18 C.F.R. §§ 388.113(a), (c).

4. For the purposes of this Agreement, the listed terms are defined as follows:

A. Participant(s): As defined at 18 C.F.R. § 385.102(b).

B. Privileged Material:³

- i. Material provided by a Participant in association with the proceeding that is designated as Privileged Material by such Participant;⁴
- ii. Any information contained in or obtained from such designated materials;
- iii. Any other materials that are made subject to this Protective Agreement by the Commission, by any court or other body having appropriate authority, or by agreement of the Participants;
- iv. Material that is privileged under federal, state, or foreign law, such as work-product privilege, attorney-client privilege, or governmental privilege, and that is designated as Privileged Material by such Participant.
- v. Notes of Privileged Material (memoranda, handwritten notes, or any other form of information (including electronic form) which copies or discloses Privileged Material); or
- vi. Copies of Privileged Material.
- vii. Privileged Material does not include:
 - a. Any information or document that has been filed with and accepted into the public files of the Commission, or contained in the public files of any other federal or state agency, or any federal or state

³ The Commission's regulations state that "[f]or the purposes of the Commission's filing requirements, non-CEII subject to an outstanding claim of exemption from disclosure under FOIA will be referred to as privileged material." 18 C.F.R. § 388.112(a). The regulations further state that "[f]or material filed in proceedings set for trial-type hearing or settlement judge proceedings, a participant's access to material for which privileged treatment is claimed is governed by the presiding official's protective order." 18 C.F.R. § 388.112(b)(2)(v).

⁴ See *infra* P 12 for the procedures governing the labeling of this designation.

court, unless the information or document has been determined to be privileged by such agency or court;

- b. Information that is public knowledge, or which becomes public knowledge, other than through disclosure in violation of this Protective Agreement; or
 - C. Critical Energy/Electric Infrastructure Information (CEII): As defined at 18 C.F.R. §§ 388.113(a), (c).
 - D. Non-Disclosure Certificate: The certificate attached to this Protective Agreement, by which Participants granted access to Privileged Material and/or CEII must certify their understanding that such access to such material is provided pursuant to the terms and restrictions of this Protective Agreement, and that such Participants have read the Protective Agreement and agree to be bound by it. All executed Non-Disclosure Certificates must be served on all Participants on the official service list maintained by the Secretary of the Commission for this proceeding.
 - E. Reviewing Representative: A person who has signed a Non-Disclosure Certificate (and, as to CEII obtained from PJM, has executed, and provided to PJM, a PJM CEII Non-Disclosure Agreement in the form provided on the PJM website) and who is:
 - i. An attorney who has been retained by a Party for purposes of this proceeding;
 - ii. Attorneys, paralegals, and other employees associated for purposes of this proceeding with an attorney described in Paragraph 4(E)(i);
 - iii. An expert or an employee of an expert retained by a Party for the purpose of advising, preparing for, submitting evidence or testifying in the proceeding;
 - iv. A person designated as a Reviewing Representative by order of the Commission; or
 - v. Employees or other representatives of a Party with significant responsibility for matters involving the proceeding.
5. Privileged Material and/or CEII shall be made available under the terms of this Protective Agreement only to Participants and only to their Reviewing Representatives as provided in Paragraphs 6-11 of this Protective Agreement. The contents of Privileged Material, CEII or any

other form of information that copies or discloses such materials shall not be disclosed to anyone other than in accordance with this Protective Agreement and shall be used only in connection with this specific proceeding.

6. All Privileged Material and/or CEII must be maintained in a secure place. Access to those materials must be limited to Reviewing Representatives specifically authorized pursuant to Paragraphs 7-11 of this Protective Agreement.

7. Privileged Material and/or CEII must be handled by each Party and by each Reviewing Representative in accordance with the Non-Disclosure Certificate executed pursuant to Paragraph 10 of this Protective Agreement. Privileged Material and/or CEII shall not be used except as necessary for the conduct of this proceeding, nor shall they (or the substance of their contents) be disclosed in any manner to any person except a Reviewing Representative who is engaged in this proceeding and who needs to know the information in order to carry out that person's responsibilities in this proceeding. Reviewing Representatives may make copies of Privileged Material and/or CEII, but such copies automatically become Privileged Material and/or CEII. Reviewing Representatives may make notes of Privileged Material, which shall be treated as Notes of Privileged Material if they reflect the contents of Privileged Material.

8. If a Reviewing Representative's scope of employment includes any of the activities listed under this Paragraph 8, such Reviewing Representative may not use information contained in any Privileged Material and/or CEII obtained in this proceeding for a commercial purpose (e.g. to give a Participant or competitor of any Participant a commercial advantage):

- A. Energy marketing;
- B. Direct supervision of any employee or employees whose duties include energy marketing; or
- C. The provision of consulting services to any person whose duties include energy marketing.

9. If a Party wishes to designate a person not described in Paragraph 4.E above as a Reviewing Representative, the Participant must seek agreement from the Participant providing the Privileged Material and/or CEII. If an agreement is reached, the designee shall be a Reviewing Representative pursuant to Paragraph 4.D of this Protective Agreement with respect to those materials. If no agreement is reached, the matter must be submitted to the Commission for resolution.

10. A Reviewing Representative shall not be permitted to inspect, participate in discussions regarding, or otherwise be permitted access to Privileged Material and/or CEII pursuant to this Protective Agreement until three business days after that Reviewing Representative first has executed and served a Non-Disclosure Certificate. However, if an attorney qualified as a

Reviewing Representative has executed a Non-Disclosure Certificate, any participating paralegal, secretarial and clerical personnel under the attorney's instruction, supervision or control need not do so. Attorneys designated Reviewing Representatives are responsible for ensuring that persons under their supervision or control comply with this Protective Agreement, and must take all reasonable precautions to ensure that Privileged Material and/or CEII are not disclosed to unauthorized persons. All executed Non-Disclosure Certificates must be served on all Participants on the official service list maintained by the Secretary of the Commission for the proceeding. Notwithstanding the foregoing proviso, no Reviewing Representative shall be permitted access to CEII obtained from PJM in this proceeding unless the Reviewing Representative has a registered PJM account (registration available at <https://accountmanager.pjm.com/accountmanager/pages/public/new-user.jsf>), submits the required CEII request form, and executes the CEII Non-Disclosure Agreement in the form posted on the PJM website (available at <https://www.pjm.com/library/request-access>). A copy of each Non-Disclosure Certificate shall be provided to counsel for the Participant asserting confidentiality prior to disclosure of any Privileged Material and/or CEII to that Reviewing Representative.

11. Any Reviewing Representative may disclose Privileged Material and/or CEII to any other Reviewing Representative as long as both Reviewing Representatives have executed the Non-Disclosure Certificate. In the event any Reviewing Representative to whom Privileged Material and/or CEII are disclosed ceases to participate in this proceeding, or becomes employed or retained for a position that renders him or her ineligible to be a Reviewing Representative under Paragraph 4.E of this Protective Agreement, access to such materials by that person shall be terminated. Even if no longer engaged in this proceeding, every person who has executed a Non-Disclosure Certificate shall continue to be bound by the provisions of this Protective Agreement and the Non-Disclosure Certificate for as long as the Protective Agreement is in effect.

12. All Privileged Material and/or CEII in this proceeding filed with the Commission or submitted to any Commission personnel, must comply with the Commission's *Notice of Document Labelling Guidance for Documents Submitted to or Filed with the Commission or Commission Staff*.⁵ Consistent with those requirements:

- A. Documents that contain Privileged Material must include a top center header on each page of the document with the following text: CUI//PRIV. Any corresponding electronic files must also include this text in the file name. The Participant producing the Privileged Material shall physically mark it on each page as "PRIVILEGED MATERIAL PROVIDED PURSUANT TO PROTECTIVE AGREEMENT IN ER22-2029-000, *et al.*" or with words of

⁵ 82 Fed. Reg. 18,632 (Apr. 20, 2017) (issued by Commission Apr. 14, 2017).

similar import as long as the term “Privileged Material” is included in that designation to indicate that it is Privileged Material.

- B. Documents that contain CEII must include a top center header on each page of the document with the following text: CUI//CEII. Any corresponding electronic files must also include this text in the file name. The Participant producing CEII shall additionally mark on each page containing such information the words “CONTAINS CRITICAL ENERGY INFRASTRUCTURE INFORMATION – DO NOT RELEASE.”
 - C. Documents that contain both Privileged Material and CEII must include a top center header on each page of the document with the following text: CUI//CEII/PRIV. Any corresponding electronic files must also include this text in the file name. The Participant producing both Privileged Material and CEII shall additionally mark each page containing such information in accordance with the requirements of Paragraph 12(A)-(B).
 - D. The specific content on each page of the document that constitutes Privileged Material and/or CEII must also be clearly identified. For example, lines or individual words or numbers that include both Privileged Material and CEII shall be prefaced and end with “BEGIN CUI//CEII/PRIV” and “END CUI//CEII/PRIV”.
13. If any Participant desires to include, utilize, or refer to Privileged Material or information derived from Privileged Material in testimony or other exhibits in such a manner that might require disclosure of such materials to persons other than Reviewing Representatives, that Participant shall notify both counsel for the disclosing Participant and the Commission, and identify all such Privileged Material.
14. Nothing in this Protective Agreement shall be construed as precluding any Participant from objecting to the production or use of Privileged Material and/or CEII on any appropriate ground.
15. Nothing in this Protective Agreement shall preclude any Participant from requesting the Commission, or any other body having appropriate authority, to find this Protective Agreement should not apply to all or any materials previously designated Privileged Material pursuant to this Protective Agreement. The Commission, or any other body having appropriate authority may alter or amend this Protective Agreement as circumstances warrant at any time during the course of this proceeding.
16. Nothing in this Agreement shall preclude any Party from requesting the Commission or any other body having appropriate authority to find that this Agreement should not apply to all materials previously designated as Privileged Materials pursuant to this Agreement. The

Commission may alter or amend this Agreement as circumstances warrant at any time during the course of the proceeding.

17. Subject to Paragraph 18, the Commission shall resolve any disputes arising under this Protective Agreement pertaining to Privileged Material according to the following procedures. Prior to presenting any such dispute to the Commission, the Participants to the dispute shall employ good faith best efforts to resolve it.

- A. Any Participant that contests the designation of material as Privileged Material shall notify the Participant that provided the Privileged Material by specifying in writing the material for which the designation is contested.
- B. In any challenge to the designation of material as Privileged Material, the burden of proof shall be on the Participant seeking protection. If Commission finds that the material at issue is not entitled to the designation, the procedures of Paragraph 18 shall apply.
- C. The procedures described above shall not apply to material designated by a Participant as CEII. Material so designated shall remain subject to the provisions of this Protective Agreement, unless a Participant requests and obtains a determination from the Commission's CEII Coordinator that such material need not retain that designation.

18. The designator will have five (5) days in which to respond to any pleading requesting disclosure of Privileged Material. Should the Commission determine that the information should be made public, the Commission will provide notice to the designator no less than five (5) days prior to the date on which the material will become public. This Protective Agreement shall automatically cease to apply to such material on the sixth (6th) calendar day after the notification is made unless the designator files a motion with the Commission with supporting affidavits, demonstrating why the material should continue to be privileged. Should such a motion be filed, the material will remain confidential until such time as the interlocutory appeal or certified question has been addressed by the Motions Commissioner or Commission, as provided in the Commission's regulations, 18 C.F.R. §§ 385.714, .715. No Participant waives its rights to seek additional administrative or judicial remedies after the Commission's denial of any appeal or determination in response to any certified question. The provisions of 18 C.F.R. §§ 388.112 and 388.113 shall apply to any requests under the Freedom of Information Act (5 U.S.C. § 552) for Privileged Material and/or CEII in the files of the Commission.

19. Privileged Material and/or CEII shall remain available to Participants until the later of 1) the date an order terminating this proceeding no longer is subject to judicial review, or 2) the date any other Commission proceeding relating to the Privileged Material and/or CEII is concluded and no longer subject to judicial review. After this time, the Participant that produced

the Privileged Material and/or CEII may request (in writing) that all other Participants return or destroy the Privileged Material and/or CEII. This request must be satisfied within fifteen (15) days of the date the request is made. However, copies of filings, official transcripts and exhibits in this proceeding containing Privileged Material, or Notes of Privileged Material, may be retained if they are maintained in accordance with Paragraph 5 of this Protective Agreement. If requested, each Participant also must submit to the Participant making the request an affidavit stating that to the best of its knowledge it has satisfied the request to return or destroy the Privileged Material and/or CEII. To the extent Privileged Material and/or CEII are not returned or destroyed, they shall remain subject to this Protective Agreement.

20. Regardless of any order terminating this proceeding, this Protective Agreement shall remain in effect until specifically modified or terminated by the Commission. All CEII designations shall be subject to the “[d]uration of the CEII designation” provisions of 18 C.F.R. § 388.113(e).

21. Any violation of this Protective Agreement and of any Non-Disclosure Certificate executed hereunder shall constitute a violation of an order of the Commission.

IN WITNESS WHEREOF, the Parties each have caused this Protective Agreement to be signed by their respective duly authorized representatives as of the date first set forth above.

By: _____

Printed Name: _____

Title: _____

Representing PJM

By: _____

Printed Name: _____

Title: _____

Representing Intervenor

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

PJM Interconnection, L.L.C.)	
)	Docket Nos. ER22-2029-000
)	EL22-32-000

(consolidated)

NON-DISCLOSURE CERTIFICATE

I hereby certify my understanding that access to Privileged Material and/or Critical Energy/Electric Infrastructure Information (CEII) is provided to me pursuant to the terms and restrictions of the Protective Agreement in this proceeding, that I have been given a copy of and have read the Protective Agreement, and that I agree to be bound by it. I understand that the contents of Privileged Material and/or CEII, any notes or other memoranda, or any other form of information that copies or discloses such materials, shall not be disclosed to anyone other than in accordance with the Protective Agreement.

By: _____

Printed Name: _____

Title: _____

Representing: _____

Date: _____