UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

PJM Interconnection, L.L.C.	)	Docket Nos. EL25-49-000
PJM Interconnection, L.L.C.	)	EL25-49-001
Allegheny Electric Cooperative, Inc.	)	
American Transmission Systems, Incorporated	)	
Atlantic City Electric Company	)	
Baltimore Gas and Electric Company	)	
Delmarva Power & Light Company	)	
Duke Energy Ohio, Inc.	)	
Duke Energy Kentucky, Inc.	)	
East Kentucky Power Cooperative, Inc.	)	
Essential Power Rock Springs, LLC	)	
Hudson Transmission Partners, LLC	)	
Jersey Central Power & Light Company	)	
Mid-Atlantic Interstate Transmission, LLC	)	
Neptune Regional Transmission System, LLC	)	
Old Dominion Electric Cooperative	)	
PECO Energy Company	)	
PPL Electric Utilities Corporation	)	
Potomac Electric Power Company	)	
Public Service Electric and Gas Company	)	
Rockland Electric Company	)	
Trans-Allegheny Interstate Line Company	)	
Transource West Virginia, LLC	)	
UGI Utilities, Inc.	)	
Monongahela Power Company	)	
The Potomac Edison Company	)	
Commonwealth Edison Company	)	
Commonwealth Edison Company of Indiana, Inc.	)	
The Dayton Power and Light Company	)	
AEP Appalachian Transmission Company, Inc.	)	
AEP Indiana Michigan Transmission Company, Inc. AEP Kentucky Transmission Company, Inc.	)	
AEP Ohio Transmission Company, Inc.	)	
AEP West Virginia Transmission Company, Inc.	)	
Appalachian Power Company	)	
Indiana Michigan Power Company	)	
Kentucky Power Company	)	
Kingsport Power Company	)	
Ohio Power Company	)	
Wheeling Power Company	)	
Duquesne Light Company	)	

Virginia Electric and Power Company	)	
Linden VFT, LLC	)	
City of Cleveland, Department of Public	)	
Utilities, Division of Cleveland Public Power	)	
City of Hamilton, OH	)	
Southern Maryland Electric Cooperative, Inc.	)	
Ohio Valley Electric Corporation	)	
AMP Transmission, LLC	)	
Silver Run Electric, LLC	)	
NextEra Energy Transmission MidAtlantic	)	
Indiana, Inc.	)	
Wabash Valley Power Association, Inc.	)	
Keystone Appalachian Transmission Company	)	
	)	
Large Loads Co-Located at Generating Facilities	)	
	)	AD24-11-000
Constellation Energy Generation, LLC	)	
	)	
v.	)	EL25-20-000
	)	(Consolidated)
PJM Interconnection, L.L.C.	)	

INITIAL BRIEF OF PJM INTERCONNECTION, L.L.C.

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INITIAL BRIEF OF PJM INTERCONNECTION, L.L.C.

Pursuant to paragraph 219 and ordering paragraphs (D) and (E) of the Order on Show Cause Proceeding, Directing Compliance Filings, Establishing Paper Hearing, and Granting in Part and Denying in Part Complaint issued by the Federal Energy Regulatory Commission ("FERC" or "Commission") on December 18, 2025, in the above-captioned proceeding,[1] PJM submits this initial brief. The Commission found that additional record evidence was needed to set the appropriate replacement rates, terms, and conditions for several new transmission services for Eligible Customers[2] serving Co-Located Load: Interim Network Integration Transmission Service ("Interim NITS"), Firm Contract Demand Transmission Service, and Non-Firm Contract Demand Transmission Service. Accordingly, the Show Cause Order established paper hearing procedures to develop a record regarding these issues.[3] This initial brief responds to the Commission's Briefing Questions and sets forth non-rate terms and conditions for these new transmission services.

I. INTRODUCTION AND BACKGROUND

PJM's responses to the Briefing Questions and discussion of Interim NITS in Section III below focus on the non-rate terms and conditions of the new transmission services for which the Show Cause Order seeks information. Consistent with the allocation of rights between PJM and PJM Transmission Owners under the Consolidated

[1] *PJM Interconnection, L.L.C.*, 193 FERC ¶ 61,217 (2025) ("Show Cause Order"); *see also PJM Interconnection, L.L.C.*, Notice of Extension of Time, Docket Nos. EL25-49-000, et al., at 3 (Jan. 23, 2026) (granting a 7-day extension of the deadline in ordering paragraph (D) of the Show Cause Order for PJM to submit its initial brief).

[2] Capitalized terms not otherwise defined herein have the meanings set forth in PJM's Open Access Transmission Tariff ("Tariff").

[3] Show Cause Order at P 219.

Transmission Owners Agreement ("CTOA"),[4] PJM expects the PJM Transmission Owners to file briefing in the paper hearing record generally addressing the rates for each of these new transmission services.[5]

PJM has also attached the following materials in addition to PJM's responses to the Briefing Questions and discussion of Interim NITS, which PJM will refer to and rely while responding to the Briefing Questions and discussing Interim NITS.

First, Attachment A to this initial brief provides illustrative Tariff language for a new Tariff, Part XI (among other illustrative language),[6] which sets forth the non-rate terms and conditions for the new transmission services available to Eligible Customers taking service on behalf of Co-Located Loads. The language is "illustrative" in the sense that PJM is including the language in Attachment A as part of the paper hearing record and is not formally filing it until the Commission rules on the record. As reflected in PJM's illustrative Tariff language, PJM places priority on the reliability of the transmission grid, which requires "maintaining an uninterrupted flow of high-voltage electricity, monitoring

[4] CTOA Rate Schedule FERC No. 42; *see also Atl. City Elec. Co*., 190 FERC ¶ 61,109, at P 3 (2025) (providing history and authority for the CTOA under *Pa.-N.J.-Md. Interconnection*, 105 FERC ¶ 61,294 (2003) ("*Atlantic City Settlement Order*"), *order on compliance*, 108 FERC ¶ 61,033 (2004) by explaining that "[i]n the *Atlantic City Settlement Order*, the Commission explained that the settlement agreement essentially divides filing rights between 'rate-related filings and terms and conditions-related filings – with the PJM [Transmission Owners] filing the former and PJM the latter'"); *Atl. City Elec.*, 190 FERC ¶ 61,109, at P 4 ("[I]ndividual transmission owners do not have a right to file under FPA section 205 to modify 'terms and conditions of the PJM Tariff . . . .'" (footnote omitted)); *Atl. City Elec. Co. v. FERC*, 295 F.3d 1 (D.C. Cir. 2002) (explaining that the initial Settlement Agreement between PJM and PJM Transmission Owners "established procedures for changes to rate design and other tariff terms for transmission services. It permitted the transmission owners to file changes in transmission service rate design and non-rate terms and conditions to the tariff under section 205.").

[5] However, PJM has rights associated with certain rates and charges, e.g., PJM's administrative service charges, which are discussed in response to several Briefing Questions below.

[6] Illustrative Language for New Tariff, Part XI; Attachments F-3A and F-4; and Other Illustrative Tariff Revisions (Attachment A) ("illustrative Tariff").

congestion, and . . . preventing and, if necessary, addressing outages and emergencies within the PJM footprint."[7]

On compliance with a Commission decision determining the appropriate non-rate terms and conditions, PJM will submit a new Tariff, Part XI (in the manner shown in Attachment A), and other Tariff revisions necessary to integrate the new transmission services into PJM's markets and operations, as applicable. That said, as detailed in this initial brief, the illustrative language in Attachment A sets forth how PJM believes these new transmission services should be requested and studied, and what their terms and conditions of service should be.

The illustrative Tariff language setting forth the non-rate terms and conditions for each of these new transmission services (Interim NITS and the two Contract Demand Transmission Services) are based in large part on PJM's existing (regional) Network Integration Transmission Service ("NITS") language from Tariff, Part III.[8] By building from the existing Tariff, Part III for developing these new transmission services, PJM is offering terms and conditions that are already familiar to customers and stakeholders, facilitating their implementation.

Second, Attachments B through D consist of affidavits in support of PJM's filing and as referenced in PJM's responses to the Commission's paper hearing questions below. In Attachment B, PJM provides the Affidavit of Dr. Sami Abdulsalam on Behalf of PJM Interconnection, L.L.C. ("Abdulsalam Aff."). Dr. Abdulsalam is Director of Transmission

[7] Wharton Aff. ¶ 12.

[8] References to PJM's existing NITS refers to Regional NITS, which is for service with deliveries within the PJM Region, unless otherwise indicated. PJM's Cross-Border NITS generally is not relevant to these new transmission services, as it is for delivery outside of PJM.

Planning for PJM and testifies on the primacy of NITS for service within the PJM Region, the complexity associated with Non-Firm Contract Demand Transmission Service from an operations and planning perspective, and limitations on Non-Firm Contract Demand Transmission Service.

In Attachment C, PJM provides the Affidavit of Matthew Wharton, on Behalf of PJM Interconnection, L.L.C. ("Wharton Aff."). Mr. Wharton testifies as to how PJM operationally carries out its key responsibilities as the "air traffic controller" of the PJM Region's high-voltage electric Transmission System to ensure reliability, manage power flow, and handle emergency operations as the region's North American Electric Reliability Corporation ("NERC")-registered Reliability Coordinator, Balancing Authority, and Transmission Operator, as well as the operational complexities associated with RASs.

In Attachment D, PJM provides the Affidavit of Timothy Horger, on Behalf of PJM Interconnection, L.L.C. ("Horger Aff."). Mr. Horger provides support for an effective date of June 1, 2029, for Tariff revisions implementing the three new transmission services.

II. RESPONSES TO THE PAPER HEARING QUESTIONS

Question 1:

> *What are the appropriate rates, terms, and conditions for the new Firm Contract Demand transmission service, including whether it would be just and reasonable to apply the current zonal firm PTPS charges to this new service and whether it would be just and reasonable and consistent with cost causation to include charges for any of PJM's administrative services?*[9]

Response to Question 1:

Below, PJM describes the specific non-rate terms and conditions for the new Firm Contract Demand Transmission Service, but it is important to first understand the relationship between the new Firm Contract Demand Transmission Service and the new Non-Firm Contract Demand Transmission Service. Thus, PJM will first provide an overview of the two transmission services and how, together, they will provide an alternative to NITS for those Co-Located Loads willing and able to limit energy withdrawals from the Transmission System. Then, PJM will detail, in response to Question 1, the non-rate terms and conditions for Firm Contract Demand Transmission Service, and then detail, in response to Question 2, the non-rate terms and conditions for Non-Firm Contract Demand Transmission Service.

A. Overview of Contract Demand Transmission Services in Illustrative Tariff, Part XI

The Show Cause Order requires PJM to develop and implement two new contract demand transmission services, Firm Contract Demand Transmission Service and Non-Firm Contract Demand Transmission Service. These new services are to "serve as *permanent* alternatives to existing transmission services, unlike the new interim, non-firm transmission service, ... and the new transmission services would not require the

[9] For simplicity, internal citations from the Show Cause Order have been omitted.

Co-Located Load to become Network Load."[10] Contract Demand Transmission Services are intended to provide options beyond full NITS to Eligible Customers taking service on behalf of Co-Located Loads that are "willing and able to control their withdrawals from the transmission system."[11]

As directed by the Show Cause Order, PJM has conceptualized Contract Demand Transmission Services based on two key principles: (1) the services are designed to serve loads that are "willing and able to control their withdrawals from the transmission system;"[12] and (2) the services are designed to allow PJM to maintain system reliability.[13] The two Contract Demand Transmission Services are designed to work together to provide the opportunity for transmission service to serve the entire gross demand of the Co-Located Load.

In short, for reliability reasons, the portion of the Co-Located Load for which the Co-Located Generating Facility will dedicate its output (in whole or in part) may be covered by Non-Firm Contract Demand Transmission Service, but any portion of the gross demand of the Co-Located Load not served by the Co-Located Generating Facility *must* be covered by Firm Contract Demand Transmission Service. This approach is necessary to maintain reliability, while allowing these loads to obtain transmission service based on their

[10] Show Cause Order at P 206.

[11] *Id*. at PP 204, 206.

[12] Show Cause Order at P 204.

[13] *See, e.g.*, *id.* at PP 201 ("[T]his new interim, non-firm transmission service will facilitate the timely provision of transmission service to Eligible Customers taking transmission service on behalf of Co-Located Loads, while preserving reliability for other transmission customers."), 212 ("We also note that, as discussed in the briefing questions below, PJM will determine the technical and engineering requirements of special protection schemes to help address reliability risks associated with unreserved use of the transmission system.") & 227 (discussing requirement that would "provide additional clarity and transparency regarding the steps that PJM and Interconnection Customers are taking to maintain transmission system reliability before an existing generating facility can serve Co-Located Load").

willingness and ability to limit energy withdrawals. To ensure reliability PJM's studies of the transmission service requests for the Co-Located Load, and the Co-Located Load's impact on the Transmission System, must capture the effects of any unscheduled energy withdrawals by the Co-Located Load, even if inadvertent or limited in duration (e.g., unit trip, failure of control technologies or protective schemes) and validate that such events would not jeopardize system reliability.[14] In other words, there can be no "unstudied" and/or "unknown" portion of the Co-Located Load that is not covered by either Firm Contract Demand Transmission Service or dedicated generation from the Co-Located Generating Facility (as backed up by Non-Firm Contract Demand Transmission Service). Without such a requirement, PJM will not have visibility into situations that may jeopardize grid reliability, including load taking service beyond levels for which PJM has properly studied and planned. This would expose the Transmission System to risk of equipment damage, unintended relay operations, and cascading outages.

To illustrate, assume a Co-Located Load with a gross demand of 900 megawatts ("MWs"), and a Co-Located Generating Facility of 500 MWs. The Co-Located Generating

[14] Consistent with Commission directives in Order Nos. 845 and 845-A and language already embedded in PJM's Tariff, PJM's proposal here uses the term "necessary control technologies and protection systems," which may include Remedial Action Schemes ("RASs"). *Reform of Generator Interconnection Procedures and Agreements*, Order No. 845, 163 FERC ¶ 61,043, at P 396 (2018) (requiring "any interconnection customer that seeks interconnection service below its generating facility capacity install appropriate monitoring and control technologies at its generating facility"), *order on reh'g & clarification*, Order No. 845-A, 166 FERC ¶ 61,137, at P 114 ("[I]f the interconnection customer requests interconnection service below generating capacity, it commits to operate consistent with such a request under section 3.1 of the *pro forma* LGIP, which states that '[t]he necessary control technologies and protection systems . . . for exceeding the level of Interconnection Service established in the executed, or requested to be filed unexecuted, LGIA shall be established in Appendix C of that executed, or requested to be filed unexecuted, LGIA.'" (alteration in original) (footnote omitted)), *order on reh'g & clarification*, Order No. 845-B, 168 FERC ¶ 61,092 (2019); *see also* Tariff, Part IV, Subpart A, section 36.1.1A ("The necessary control technologies and protection systems shall be established in Tariff, Attachment O, Schedule K (Requirements for Interconnection Service Below Full Electrical Generating Capability) of the executed, or requested to be filed unexecuted Interconnection Service Agreement.").

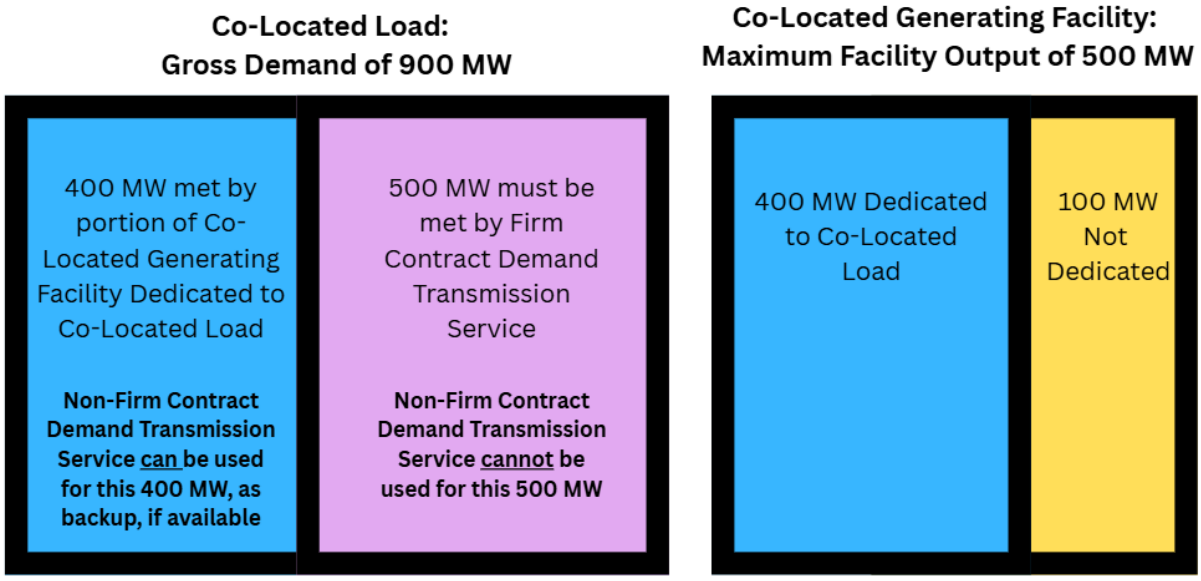
Facility commits to dedicating 400 MWs of its output to the Co-Located Load.[15] Here, the Eligible Customer designated by the Co-Located Generating Facility[16] must contract for Firm Contract Demand Transmission Service of at least 500 MWs to cover the difference between the dedicated output of the Co-Located Generating Facility (400 MWs) and the gross demand of the Co-Located Load (900 MWs).[17] Given the quality of Firm Contract Demand Transmission Service, this means that, generally speaking, the gross demand of the Co-Located Load (here, 900 MWs) should be met under most conditions by the portion of the Co-Located Generating Facility dedicated to the Co-Located Load (here, 400 MWs) *plus* the Firm Contract Demand Transmission Service the Eligible Customer takes from the Transmission System (here, 500 MWs). This is illustrated by Figure 1 below.

[15] The Co-Located Generating Facility would be free to offer the 100 MWs of Installed Capacity into PJM's capacity market or be an energy-only resource. However, the portion of Co-Located Generating Facility dedicated to the Co-Located Load would be ineligible to participate in PJM's capacity market. *See* PJM Transmittal Letter, section II.C (Necessary Studies and Necessary Studies Agreement).

[16] Depending on the status of the Co-Located Generating Facility, the designation of the Eligible Customer will be in its Application or Service Agreements, such as its Generator Interconnection Agreement ("GIA").

[17] The Eligible Customer is free to contract for greater amounts of Firm Contract Demand Transmission Service than necessary to cover the portion of the Co-Located Load's demand not met by the Co-Located Generating Facility. For example, in the illustration above, the Eligible Customer may choose to contract for 500 MWs of Firm Contract Demand Transmission service and still dedicate 400 MWs of its Co-Located Generating Facility to its Co-Located Load.

Figure 1: Illustration of Relationship between Contract Demand Transmission Services and portion of Co-Located Generating Facility Dedicated to Co-Located Load



A Co-Located Generating Facility will not always be available (e.g., due to planned or unforced outage). To the extent that the gross demand of a Co-Located Load is not covered by the Eligible Customer's Firm Contract Demand Transmission Service, the Eligible Customer must cover the remaining gross demand by applying for Non-Firm Contract Demand Transmission Service. In that case, the Non-Firm Contract Demand Transmission Service, if PJM determines it is available for the requested period, will act as a backup to allow the Co-Located Load to meet its full demand, while the portion of the Co-Located Generating Facility dedicated to the Co-Located Load is on outage and unable to provide energy.

Dr. Abdulsalam explains that Non-Firm Contract Demand Transmission Service offers non-firm withdrawals "on a pre-scheduled/requested basis and are not guaranteed."[18] This is consistent with the Show Cause Order's finding that the Non-Firm Contract

[18] Abdulsalam Aff. ¶ 12.

Demand Transmission Service is intended for "Eligible Customers seeking to use the transmission system on behalf of a Co-Located Load in this more limited manner" by seeking a "transmission reservation for a Co-Located Load in advance for the duration of an expected outage of the associated generator."[19]

More specifically, PJM will offer and manage pre-scheduled Non-Firm Contract Demand Transmission Service "'operationally' and ensure that permanent monitoring and aggressive, fast-acting protections are in place if conditions arise that may compromise reliable system operations."[20] This approach, as Dr. Abdulsalam explains, "allows for more reliable system operation, reduces the number of permanent protection systems on the system," such as a RAS, on the PJM Transmission System, and thus "reduc[es] the likelihood of unintended protection system misoperation that could lead to cascading events."[21]

In addition, as explained further below, and by Dr. Abdulsalam, from an operations and planning perspective, the complexities associated with the provision of Non-Firm Contract Demand Transmission Service call for relying on such service as a standby product only "under limited circumstances."[22] For example, an Eligible Customer that typically supplies load "directly from the co-located generator without using the transmission system" may rely on Non-Firm Contract Demand Transmission Service when the "co-located generator is unavailable or operating at a reduced capacity,"[23] to enable the

[19] Show Cause Order at P 214.

[20] Abdulsalam Aff. ¶ 12.

[21] Abdulsalam Aff. ¶ 12.

[22] Abdulsalam Aff. ¶ 14.

[23] Abdulsalam Aff. ¶ 14 (footnote omitted).

Eligible Customer to substitute energy from the PJM Transmission System for the energy provided by the Co-Located Generating Facility.

Flexibility is built into PJM's approach, which allows Eligible Customers to mix and match between Firm and Non-Firm Contract Demand Transmission Service when taking service on behalf of Co-Located Load, so long as the combination of the two services covers the entire gross demand of the Co-Located Load. PJM's approach also ensures that there is the opportunity to take transmission service even in the event a Co-Located Generating Facility is unable to provide energy consistent with its dedicated quantity.

This approach is compliant with the Show Cause Order's statement that "Eligible Customers taking transmission service on behalf of Co-Located Loads would . . . be able to take a combination of Firm Contract Demand transmission service and Non-Firm Contract Demand transmission service."[24] Additionally, the Commission explained that "the Eligible Customer may combine Firm Contract Demand transmission service with Non-Firm Contract Demand transmission service to withdraw, on an as-available basis, more energy than its firm entitlement."[25] Accordingly, PJM is allowing an Eligible Customer taking transmission service on behalf of a Co-Located Load to choose either Firm or Non-Firm Contract Demand Transmission Service, or some combination of the two so long as the Eligible Customer takes service that fully covers the Co-Located Load's total energy needs.

[24] Show Cause Order at P 206.

[25] Show Cause Order at P 208 n.437; illustrative Tariff, Part XI, Subpart B, section 708.

Also, as discussed in PJM's Transmittal Letter,[26] PJM is filing Tariff revisions which, as required by the Show Cause Order,[27] provide that an Eligible Customer taking transmission service on behalf of a Co-Located Load that is taking Firm and/or Non-Firm Contract Demand Transmission Service may not also take NITS or Interim NITS on behalf of the same Co-Located Load. Thus, while an Eligible Customer may choose some combination of Firm and Non-Firm Contract Demand Transmission Service, NITS and Interim NITS cannot be mixed with either one of the Contract Demand Transmission Services.[28]

Consistent with the directives and findings of the Show Cause Order, PJM developed non-rate terms and conditions for offering Contract Demand Transmission Service on firm and non-firm bases. Attachment A to this initial brief includes an illustrative Tariff, Part XI, Subpart B, and sections 708 through 716 detail non-rate terms and conditions for the two new Contract Demand Transmission Services. PJM also developed an Attachment F-4 to be the new *pro forma* Service Agreement for both Firm Contract Demand Transmission Service and Non-Firm Contract Demand Transmission Service. That is, an Eligible Customer taking Firm and Non-Firm Contract Demand Transmission Service on behalf of a Co-Located Load will require only a single Service Agreement setting for the applicable terms for each service. Such an approach is reasonable, as the two services are generally going to be taken simultaneously to ensure

[26] PJM Transmittal Letter at 26-29 (discussing revisions to Part III).

[27] Show Cause Order at PP 189, 193.

[28] *See* Show Cause Order at P 206 (Eligible Customer "would also be able to take a combination of Firm Contract Demand transmission service and Non-Firm Contract Demand transmission service.").

the entire gross demand of the Co-Located Load can be covered by the Transmission System.[29]

Although the "shell" of Attachment F-4 is being filed concurrently as part of PJM's compliance filing,[30] the full illustrative text of Attachment F-4 is in Attachment A to PJM's initial brief.

B. Firm Contract Demand Transmission Service in Illustrative Tariff, Part XI

Attachment A describes Firm Contract Demand Transmission Service as the transfer of capacity and energy for an Eligible Customer on behalf of a designated Co-Located Load, up to a defined, predetermined MW level of transmission service as requested by the Eligible Customer and confirmed by PJM, using capacity and energy procured by PJM.[31]

PJM's response to Question 1 below, covers (i) Tariff, Part XI provisions that apply to both Firm and Non-Firm Contract Demand Transmission Service; and (ii) Tariff, Part XI provisions that only apply to Firm Contract Demand Transmission Service. Provisions that only apply to Non-Firm Contract Demand Transmission Service will be discussed further in response to Question 2 below.

C. Provision of Contract Demand Transmission Services

In Attachment A, section 708, PJM provides illustrative language detailing the scope of Contract Demand Transmission Service on both a Firm and Non-Firm basis.

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[29] Of course, to the extent an Eligible Customer takes only one of the two new contract demand transmission services, the portions of the agreement unrelated to the subscribed service will be inapplicable.

[30] *See* PJM Transmittal Letter, Attachment A (Tariff Revisions (Clean)) and Attachment B (Tariff Revisions (Redline)).

[31] Illustrative Tariff, Part XI, Subpart B, section 708.

Firm Contract Demand Transmission Service will be provided to Eligible Customers taking service on behalf of Co-Located Loads pursuant to the applicable terms and conditions in the Tariff and the Service Agreement for Contract Demand Transmission Service, provided in proposed Attachment F-4.[32] The Commission instructed PJM to design its Firm Contract Demand Transmission Service to allow customers to take capacity and energy from the Transmission System up to a defined, predetermined MW level.[33] The Commission stated, however, that while "Firm Contract Demand transmission service will have the same reservation and curtailment priority as existing firm transmission services, at the level of contract demand . . . unlike NITS customers, the Eligible Customer taking Firm Contract Demand transmission service on behalf of the Co-Located Load is not permitted to withdraw energy from the PJM transmission system beyond the contract demand level."[34] For both Contract Demand Transmission Services, Eligible Customers must be willing and able to limit withdrawals of energy from the Transmission System as required by PJM.[35]

A demonstrated and proven ability to limit withdrawals from the system is crucial to the reliability of the PJM system and to prevent Contract Demand Transmission Services from having an adverse impact on the electric system's reliability and, per the Show Cause Order, a fundamental characteristic of Contract Demand Transmission Service.[36]

[32] Illustrative Tariff, Part XI, Subpart B, section 708.

[33] Show Cause Order at P 208; illustrative Tariff, Part XI, Subpart B, section 708.

[34] Show Cause Order at P 208 (footnote omitted).

[35] Illustrative Tariff, Part XI, Subpart B, section 708.

[36] Show Cause Order at P 204 (The Commission stated that Eligible Customers seeking Contract Demand Transmission Services must be "willing and able to control their withdrawals from the transmission system.").

Relatedly, Co-Located Loads must be separately metered from the Co-Located Generating Facility.[37] For Firm Contract Demand Transmission Service to properly function, it is essential that any associated Non-Firm Contract Demand Transmission Service taken on behalf of the same Co-Located Load has in place necessary control technologies and/or protective systems, which may include RASs, that are approved by PJM and that can effectively limit withdrawals from the Transmission System that serve Co-Located Loads.[38] While the details surrounding such protective technologies and systems are detailed further below in response to Question 5, the need for such associated with the provision of Non-Firm Contract Demand Transmission Service is also discussed in response to Question 2.

Illustrative Tariff, Part XI, Subpart B, section 708 also provides that Eligible Customers must request both Firm and Non-Firm Contract Demand Transmission Service through their Transmission Provider by filing an Application, detailed further below.

D. Nature of Contract Demand Transmission Services

As required by the Show Cause Order, Firm Contract Demand Transmission Service will also have priority over Non-Firm Contract Demand Transmission Service and will have equal priority, at the level of the contract demand, with other firm transmission services, including NITS.[39]

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[37] Show Cause Order at P 206; *see* illustrative Tariff, Part XI, Subpart B, section 710.4 ("[T]hese technical requirements include, but are not limited to: (i) installation of necessary hardware and software to limit energy withdrawals, including metering equipment . . . .").

[38] Illustrative Tariff, Part XI, Subpart B, section 708; *see* Show Cause Order at P 205 ("[I]n these instances where the Co-Location Arrangement includes special protection schemes that limit its energy withdrawals, we find that it is a just and reasonable replacement rate to allow an Eligible Customer taking transmission service on behalf of such load to take and be charged for new types of transmission service that are alternatives, and not equivalent, to NITS.").

[39] Illustrative Tariff, Part XI, Subpart B, section 709.1; Show Cause Order at P 208.

Attachment A, section 709.2 details the scope of service for both Firm and Non-Firm Contract Demand Transmission Service. An Eligible Customer requesting Firm Contract Demand Transmission Service will receive firm transmission service on behalf of a Co-Located Load up to its contract demand amount, as detailed in the applicable Service Agreement. An Eligible Customer taking service on behalf of a Co-Located Load must request Non-Firm Contract Demand Transmission Service equivalent to the MW level of the Co-Located Generating Facility dedicated to serving the Co-Located Load, and an Eligible Customer with an effective Service Agreement will be eligible to obtain Non-Firm Contract Demand Transmission Service on a given Operating Day only to the extent the portion of the Co-Located Generating Facility dedicated to serving the Co-Located Load is on outage.

Conversely, as discussed above in the overview section, an Eligible Customer taking service on behalf of a Co-Located Load must request Firm Contract Demand Transmission Service for no less than the MW level of the gross demand of the Co-Located Load that will not be served by the dedicated Co-Located Generating Facility. As required by the Show Cause Order,[40] for any given Co-Located Load, once an Eligible Customer has taken, or is applying for NITS or Interim NITS on behalf of such Co-Located Load, an Eligible Customer will not be eligible to apply for or take Firm Contract Demand Transmission Service or Non-Firm Contract Demand Transmission Service for that same Co-Located Load.[41] Finally, any material change in the MW level of the gross-demand of

[40] Show Cause Order at P 200.

[41] Illustrative Tariff, Part XI, Subpart B, section 709.3.

the Co-Located Load, or in the output of the Co-Located Generating Facility would require a new Application.[42]

E. Application for Contract Demand Transmission Services

Illustrative section 710 in Attachment A details how an Eligible Customer seeking transmission service on behalf of a Co-Located Load will initiate service requests for Firm and Non-Firm Contract Demand Transmission Service. Any request for Firm and/or Non-Firm Contract Demand Transmission Service must comply with the Commission's requirements for new transmission service requests in 18 C.F.R. § 2.20, plus several data points specific to Contract Demand Transmission Service, including several items listed in section 710.2:

- "a description of the supply characteristics of the Co-Located Generating Facility . . . , including the generation profile, its Maximum Facility Output, the megawatt level dedicated to serving the Co-Located Load, and other technical specifications;"
- "[a] description of the demand characteristics of the Co-Located Load . . . , including the demand profile and other technical specifications;" and
- "[t]he transmission capacity requested for the Delivery Point on the Transmission Provider's Transmission System behind which the Co-Located Load and Co-Located Generating Facility are located."

Upon receiving an Application, and the information required in section 710, PJM would evaluate whether the requested level of Firm Contract Demand Transmission Service and/or Non-Firm Contract Demand Transmission Service can be reliably provided. To do so, PJM would "coordinate with the affected Transmission Owner(s) to complete studies, including load integration studies, [to obtain] data relevant to the determination of

[42] Illustrative Tariff, Part XI, Subpart B, section 709.2(e) ("After an Eligible Customer has submitted an Application for Contract Demand Transmission Service for a given Co-Located Load, any material change in the megawatt level of the gross-demand of the Co-Located Load or in the megawatt level of the Co-Located Generating Facility dedicated to the Co-Located Load would require a new Application.").

whether (and to what level)" Firm or Non-Firm Contract Demand Transmission Service "can be reliably provided" and "identify any necessary enhancements to the Transmission System to accommodate the requested level of service."[43] PJM's Tariff language also recognizes that "[d]uring this study period, Transmission Provider may also perform other studies."[44]

Based on the studies, PJM, in consultation with the affected PJM Transmission Owner(s), will determine the level of Firm Contract Demand Transmission Service or Non-Firm Contract Demand Transmission Service that can be reliably provided and inform the Eligible Customer.[45]

F. Conditions Precedent and Technical Requirements for Contract Demand Transmission Services

Prior to obtaining service, the Eligible Customer must meet several enumerated conditions precedent, many of which are ministerial in nature but have significant importance in ensuring that the Eligible Customer can receive its service while preserving the reliability of the Transmission System.

Specifically, among several enumerated conditions precedent, the language would require the Eligible Customer to comply with the provisions of the "PJM Credit Policy" set forth in Tariff, Attachment Q; "certify[y] that it is willing and able to limit energy withdrawals from the Transmission System when requested by [PJM];" "complete[] other

[43] Illustrative Tariff, Part XI, Subpart B, section 710.3 ("Descriptions of the Transmission Provider's and/or the applicable Transmission Owner(s)' specific methodology for assessing whether Firm Contract Demand Transmission Service or Non-Firm Contract Demand Transmission Service, or both can be reliably provided, will be set forth in Tariff, Part XI, Section 712, the PJM Manuals, and set forth in Transmission Owner standards, as applicable.").

[44] Illustrative Tariff, Part XI, Subpart B, section 710.3.

[45] Illustrative Tariff, Part XI, Subpart B, section 710.3.

certification requirements provided in the PJM Manuals," including to be an Electric Distributor, as applicable; and "otherwise execute, if necessary, and comply with the PJM Governing Agreements."[46] In addition and crucially, the Eligible Customer must have been designated to take transmission service on behalf of a Co-Located Load in the relevant Application, Service Agreement, or GIA for the Co-Located Generating Facility, and provide PJM with "an authorization or certification from its Relevant Electric Retail Regulatory Authority which affirms that the Eligible Customer is authorized to provide energy to the Co-Located Load."[47]

Illustrative Tariff, Part XI, Subpart B, sections 710.4 and 710.5 provide that certain facilities and necessary technical arrangements, such as an RAS, must be completed prior to commencement of requested service.[48] Indeed, the Eligible Customer must "construct[], maintain[], and operat[e] the facilities (i) on its side of the Delivery Point necessary to reliably deliver and receive energy and capacity; and (ii) only in the case of Non-Firm Contract Demand Transmission Service, to implement the necessary control technologies and protection systems required pursuant to Tariff, Part XI, Subpart B, section 713 and specified in the Service Agreement for Contract Demand Transmission Service, as Transmission Provider may require."[49] Such facilities are necessary for the Eligible Customer to receive transmission service at its Delivery Point and to limit unauthorized

[46] Illustrative Tariff, Part XI, Subpart B, section 710.1.

[47] Illustrative Tariff, Part XI, Subpart B, section 710.1.

[48] Illustrative Tariff, Part XI, Subpart B, section 710.4.

[49] Illustrative Tariff, Part XI, Subpart B, section 710.5.

withdrawals, consistent with the key principles underlying Contract Demand Transmission Service.[50]

Section 710.6 details the required steps for execution and filing of Service Agreements for the requested transmission service type.[51] These procedures are modeled on those the Commission recently accepted for GIAs.[52]

G. Termination of Service Agreement for Contract Demand Transmission Services

Consistent with the Show Cause Order's holding that Contract Demand Transmission Services are to be a "permanent alternative" to NITS, PJM's approach in section 710.7 allows for a Service Agreement for Contract Demand Transmission Service to be "presumed to continue without expiration." PJM does set forth five circumstances under which it may be terminated.[53] Three of the circumstances are mundane in nature: (i) where an incumbent Eligible Customer is replaced by a successor Eligible Customer;[54] (ii) on 42-months' notice prior to the commencement of a Delivery Year; and (iii) by mutual agreement.[55] The 42-month notice period is appropriate because the contracted-for service level under a Firm Contract Demand Transmission Service will be accounted for in

[50] *See* Abdulsalam Aff. ¶¶ 9-12.

[51] Illustrative Tariff, Part XI, Subpart B, section 710.6.

[52] Tariff, Part VIII, Subpart D, section 411 (Final Negotiation Phase); *PJM Interconnection, L.L.C.*, 192 FERC ¶ 61,077, at PP 66-70 (2024).

[53] Illustrative Tariff, Part XI, Subpart B, section 710.7.

[54] Illustrative Tariff, Part XI, Subpart B, section 710.7.

[55] Illustrative Tariff, Part XI, Subpart B, section 710.7.

PJM's capacity market,[56] as required by the Show Cause Order.[57] Thus, given the 3-year forward nature of PJM's capacity market—and the pre-auction development and posting or relevant auction parameters, PJM must have sufficient notice to not include such contract demand in its Load Forecast for the relevant Delivery Year.[58] The 42-months' notice period is consistent with the termination provision in PJM's *pro forma* pseudo-tie agreement and is designed to address the capacity market participation concerns.[59]

However, there are circumstances under which PJM could terminate the Service Agreement for cause. One, where the Eligible Customer "is in breach of its obligations under the Service Agreement or the Tariff, Part XI," which could include, for example, "any material changes to the gross demand of the Co-Located Load or the design, configuration, or output of the Co-Located Generating Facility occur without being studied by [PJM] to determine whether such changes would affect [PJM's] ability to reliably provide the level of service specified in the Eligible Customer's Contract Demand Transmission Service Agreement."[60] Two, the Eligible Customer is disqualified from receiving Contract Demand Transmission Service upon an Eligible Customer's failure to follow an operating instruction to curtail or shed load, or after the misoperation, on more

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[56] Illustrative Tariff, Part XI, Subpart B, section 708(b) ("Firm Contract Demand Transmission Service is for the transfer of capacity and energy to an Eligible Customer on behalf of a designated Co-Located Load, up to a defined, predetermined megawatt level of transmission service as requested by the Eligible Customer and confirmed by the Transmission Provider, using capacity and energy procured by the Transmission Provider.").

[57] *See* Show Cause Order at P 210 ("PJM will procure generation capacity on behalf of the Co-Located Load served by Firm Contract Demand transmission service based on their contract demand[.]").

[58] *See* Horger Aff. ¶¶ 11-14.

[59] *See PJM Interconnection, L.L.C.*, 162 FERC ¶ 61,086, at P 89 (2018) ("Regarding PJM's proposal for 42-months' notice of a request to terminate where there is no system reliability concern, we agree that 42-months' notice is an appropriate timeframe because it provides pseudo-tied resources with sufficient notice and allows PJM sufficient time to address changes in capacity market participation."), *reh'g denied*, 167 FERC ¶ 61,069, at P 21 (2019).

[60] Illustrative Tariff, Part XI, Subpart B, section 710.7(d).

than one occasion, of any of the necessary control technologies or protection systems required under an Eligible Customer's Non-Firm Contract Demand Transmission Service Agreement. These latter circumstances are explained in response to Questions 5 and 6 below.

H. Designation of Co-Located Load and Co-Located Generating Facility

The Show Cause Order requires the Co-Located Generating Facility to "designat[e] an Eligible Customer . . . take transmission service on behalf of a Co-Located Load."[61] Consistent with this requirement, Attachment A, section 711 requires that an Eligible Customer designate the individual Co-Located Load on behalf of which the Eligible Customer is taking Contract Demand Transmission Service, whether it is Firm, Non-Firm, or both.[62] The Eligible Customer must also designate the individual Co-Located Generating Facility that will serve the individual Co-Located Load that is designated by the Eligible Customer and provide the MW level of energy from the Co-Located Generating Facility dedicated to serving the Co-Located Load.[63] Upon designation, no change in the Delivery Point for Contract Demand Transmission Service will be permitted.[64]

In order to maintain PJM's operational visibility of the system and support efforts to manage reliability, Eligible Customers shall have an ongoing obligation to provide the Transmission Provider with timely written or electronic notice of material changes in the

[61] Show Cause Order at P 226.

[62] Illustrative Tariff, Part XI, Subpart B, section 711.1(a).

[63] Illustrative Tariff, Part XI, Subpart B, section 711.1(b).

[64] Illustrative Tariff, Part XI, Subpart B, section 711.2.

demand characteristics of the Co-Located Load and the supply characteristics of the Co-Located Generating Facility.[65]

Necessary control technologies and protection systems for Non-Firm Contract Demand Transmission Service will be designed based on the specific circumstances and technical arrangements of each Co-Located Load arrangement, as outlined in each Service Agreement for Contract Demand Transmission Service. Thus, any material changes to such control technologies and protection systems could have deleterious effects on the efficacy of the control technologies and protection systems and PJM's ability to reliably operate the system. Thus, failure to timely inform PJM of such material changes "may constitute a breach of the Eligible Customer's Service Agreement and subject to termination under Tariff, Part XI, Subpart B, section 710.7."[66]

I. Restrictions on Use of Service and Anti-Toggling Provision

To prevent retail sales, Eligible Customers will be prohibited from using Firm Contract Demand Transmission Service for the sale of either capacity or energy to loads other than those Co-Located Loads designated in its Service Agreement or the direct or indirect provision of transmission services by the Eligible Customer to third parties.[67]

The Commission recognized that an anti-toggling mechanism is necessary to avoid a situation in which an Eligible Customer taking transmission service on behalf of a Co-Located Load attempts to switch between Firm and Non-Firm Contract Demand Transmission Service for the same portion of total contracted demand based on expected

[65] Illustrative Tariff, Part XI, Subpart B, section 711.3.

[66] Illustrative Tariff, Part XI, Subpart B, section 711.3.

[67] Illustrative Tariff, Part XI, Subpart B, section 709.3.

capacity market conditions.[68] PJM has included a proposed anti-toggling provision at Attachment A, section 709.4, which is described further below in response to Question 7.[69]

J. Initial Study Procedures for Contract Demand Transmission Service

After receiving a completed Application for Firm Contract Demand Transmission Service by an Eligible Customer, PJM will notify the affected Transmission Owner(s) of the completed Application.[70] The affected Transmission Owner(s) and PJM may need to coordinate to study potential impacts of providing Firm Contract Demand Transmission Service on the Transmission Owner's system.[71] PJM will then determine, in accordance with PJM Manuals, any necessary studies to provide the requested transmission service.[72] If necessary studies are required, PJM will inform the Eligible Customer and will consider any results of the Transmission Owner studies.[73] If PJM determines that necessary studies are needed to evaluate the requested transmission service request, PJM will provide an Application and Studies Agreement to the Eligible Customer in which the Eligible Customer will agree to reimburse PJM for the required study costs. The Eligible Customer must execute an Application and Studies Agreement within 15 days of receiving notice from PJM and pay the study fee. An Eligible Customer that does not execute an Application and Studies Agreement will be deemed withdrawn with the fee returned with

[68] Show Cause Order at P 213 ("[T]he terms and conditions for taking the new Firm Contract Demand transmission service… must include an anti-toggling mechanism.").

[69] Illustrative Tariff, Part XI, Subpart B, section 709.4.

[70] Illustrative Tariff, Part XI, Subpart B, section 712.1.

[71] Illustrative Tariff, Part XI, Subpart B, section 712.1.

[72] Illustrative Tariff, Part XI, Subpart B, section 712.1.

[73] Illustrative Tariff, Part XI, Subpart B, section 712.1.

interest.[74] Finally, the Eligible Customer will be required to pay a study fee, as determined by PJM, to apply for Contract Demand Transmission Service.[75]

K. Load Shedding and Curtailment for Contract Demand Transmission Services

The Commission directed that, "[f]or the Eligible Customer taking transmission service on behalf of a co-Located Load to be eligible for these new transmission services, the co-Located Load must be able and willing to prevent or limit its energy withdrawals . . . ."[76]

PJM addresses the reasoning underlying its Curtailment and Load Shedding provisions in direct response to Question 11 below, but PJM takes the opportunity to describe those provisions here as requested by Question 1. Consistent with the key principle that an Eligible Customer taking Contract Demand Transmission Service is willing and able to limit energy withdrawals from the Transmission System, section 713 details the Curtailment and Load Shedding rules for the two Contract Demand Transmission Services.

Specifically, an Eligible Customer must implement any Load Shedding or Curtailment directive ordered by PJM, and must respond 24 hours a day, 7 days a week, 365 days a year, to any real-time instruction to reduce or curtail load within five minutes of the directive.[77] PJM will make Curtailments on a non-discriminatory basis.[78] Load Shed instructions will be directed toward Eligible Customers in a manner that is consistent with

[74] Illustrative Tariff, Part XI, Subpart B, section 712.3.

[75] Illustrative Tariff, Part XI, Subpart B, section 712.4.

[76] Show Cause Order at P 206.

[77] Illustrative Tariff, Part XI, Subpart B, section 713.1.

[78] Illustrative Tariff, Part XI, Subpart B, section 713.1.

previously established procedures under the Service Agreement for Contract Demand Transmission Service.[79]

For purposes of Curtailment, Firm Contract Demand Transmission Service is to be treated as the equivalent of NITS. Applying the same level of Curtailment priority as between Firm Contract Demand Transmission Service and NITS is reasonable, given that for both services, PJM will plan the Transmission System and procure capacity to meet their resource adequacy needs. Further, this is compliant with the Show Cause Order's holding that "Firm Contract Demand transmission service will have the same reservation and curtailment priority as existing firm transmission services, at the level of the contract demand."[80]

PJM reserves the right to curtail Contract Demand Transmission Service to maintain system reliability.[81] Processes and procedures applicable to control technologies and protection systems (e.g., RAS), along with disqualification from Contract Demand Transmission Service and penalties for unreserved use of the system, are detailed further below in response to Question 5.[82]

L. Rates and Charges for Firm Contract Demand Transmission Service

Consistent with the allocation of rights between PJM and PJM Transmission Owners,[83] PJM expects the PJM Transmission Owners to file briefing in the paper hearing record describing the proposed transmission rates for each of these new transmission

[79] Illustrative Tariff, Part XI, Subpart B, section 713.2.

[80] Show Cause Order at P 208.

[81] Illustrative Tariff, Part XI, Subpart B, section 713.5.

[82] *See* illustrative Tariff, Part XI, Subpart B, sections 713.6, 713.7 & 713.8.

[83] *See supra* note 4.

services for Co-Located Load. However, Eligible Customers will be assessed other rates in addition to transmission service rates, and PJM has authority to institute such non-transmission-related rates. Thus, section 714 provides that PJM would assess:

- administrative services charges under Tariff, Schedule 1A; Tariff, Schedule 9; and Tariff, Schedule 10 based on the total quantity of megawatt hours ("MWhs") of energy delivered using Firm Contract Demand Transmission Service, except in the case of any capacity-related charges under these schedules, which shall be based on the Eligible Customer's Unforced Capacity Obligation;[84]

- Ancillary Services charges, except for Regulation, based on the total quantity in MWhs of energy delivered to the Co-Located Load using Firm Contract Demand Transmission Service in accordance with Tariff, Part I, section 3;[85]

- Black Start Service charges based on the gross demand of the Co-Located Load in accordance with Tariff, Schedule 6A;[86]

- Regulation charges based on a gross demand of the Co-Located Load;[87] and

- any redispatch costs as set forth in Tariff, Attachment K.[88]

These are standard charges associated with the use of the Transmission System over and above the transmission service rates. Also, consistent with the directives in the Show Cause Order, PJM would assess Black Start and Regulation charges based on the gross demand of the Co-Located Load,[89] while the other charges would be based on actual usage of the Transmission System, consistent with how other transmission services are charged.

[84] Illustrative Tariff, Part XI, Subpart B, section 714.5.

[85] Illustrative Tariff, Part XI, Subpart B, section 714.5.

[86] Illustrative Tariff, Part XI, Subpart B, sections 714.5, 715.4.

[87] Illustrative Tariff, Part XI, Subpart B, section 715.4.

[88] Illustrative Tariff, Part XI, Subpart B, sections 714.3, 715.2.

[89] Show Cause Order at P 209.

Further, as with all transactions in PJM, PJMSettlement will be the Counterparty to the Firm Contract Demand Transmission Service and Non-Firm Contract Demand Transmission Service transactions under this Tariff.

M. Applicability of Operating Agreement

Consistent with PJM's requirements for NITS and the Commission's *pro forma* Open Access Transmission Tariff,[90] PJM requires that the Eligible Customer taking Contract Demand Transmission Service to plan, construct, operate, and maintain its facilities in conformance with the Operating Agreement.[91] Additionally, the terms and conditions under which the Eligible Customer will operate its facilities will be detailed in the Operating Agreement.[92]

N. **Pro Forma** ***Contract Demand Transmission Service Agreement***

PJM has provided in Attachment A an illustrative Tariff, Attachment F-4, a *pro forma* Service Agreement for Contract Demand Transmission Service, i.e., it will govern for both Firm and Non-Firm Contract Demand Transmission Services.[93] The new Service Agreement requires the parties to identify the Eligible Customer and provide business contact information. The parties will select whether facilities' upgrades are necessary by the Eligible Customer to take Firm Contract Demand Transmission Service on behalf of the Co-Located Load.[94] The Service Agreement will also detail conditions for termination,

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[90] *Pro Forma Open Access Transmission*, Federal Energy Regulatory Commission, § 35.1 (April 2020), https://www.ferc.gov/sites/default/files/2020-04/pro-forma-open-access.pdf.

[91] The Commission's *pro forma* Open Access Transmission Tariff uses the term "Network Operating Agreement." In PJM, the "Operating Agreement of the PJM Interconnection, L.L.C., as amended from time to time, shall constitute the Network Operating Agreement." Tariff, Attachment G.

[92] Illustrative Tariff, Part XI, Subpart B, section 716.1.

[93] Illustrative Tariff, Attachment F-4.

[94] Illustrative Tariff, Attachment F-4, section 2.0.

such as misoperation of a necessary control technology or protection system under sections 710.7 and 713.7 or failure to timely inform PJM of material changes to the Co-Located Load or Co-Located Generating Facility.[95] The Eligible Customer is also required to submit a single-line diagram as a part of Attachment F-4 to show the Delivery Point between the Co-Located Load and Co-Located Generating Facility.

As noted, the *pro forma* Service Agreement is designed to provide applicable terms and conditions for Non-Firm Contract Demand Transmission Service. This will allow an Eligible Customer taking Firm Contract Demand Transmission Service and Non-Firm Contract Demand Transmission Service on behalf of a Co-Located Load to consolidate its services into one agreement. Further, using a single agreement to cover both services is consistent with the requirement that an Eligible Customer taking Contract Demand Transmission Service must use a combination of the two services to cover the entire gross demand of the Co-Located Load.[96]

[95] Illustrative Tariff, Attachment F-4, sections 3.0, 4.0.

[96] *See, e.g.*, Illustrative Tariff, Subpart B, section 709.2.

Question 2:

> *What are the appropriate rates, terms, and conditions for the new Non-Firm Contract Demand transmission service, including whether it would be just and reasonable to apply the current zonal non-firm PTPS charges to this new transmission service and whether it would be just and reasonable and consistent with cost causation to include charges for any of PJM's administrative services?*

Response to Question 2:

As discussed above, many of the non-rate terms and conditions applicable to the new Non-Firm Contract Demand Transmission Service are the same as those for the new Firm Contract Demand Transmission Service, and are as described in response to Question 1. Thus, PJM details those terms and conditions specific to Non-Firm Contract Demand Transmission Service that were not discussed above.

A. Provision of Non-Firm Contract Demand Transmission Service

The Show Cause Order recognizes that "not all Co-Located Loads will necessarily plan to withdraw energy from the transmission system on a regular basis" and "Eligible Customers taking service on behalf of such loads may . . . seek to withdraw energy from the transmission system from time to time when transmission capacity is available."[97] To implement this requirement, PJM has developed Non-Firm Contract Demand Transmission Service as a service offering the transmission of energy for an Eligible Customer on behalf of a designated Co-Located Load, on an as-available basis, up to a defined, predetermined MW level of transmission service as requested by the Eligible Customer and confirmed by the Transmission Provider, using energy procured by the Transmission Provider.[98] Like Firm Contract Demand Transmission Service, the ability to request Non-Firm Contract

[97] Show Cause Order at P 214.

[98] *See* Show Cause Order at PP 193, 214.

Demand Transmission Service on any given day, for any given period, is intended to be permanent—so long as the Service Agreement is effective.[99]

As discussed in Section E below, Eligible Customers taking Non-Firm Contract Demand Transmission Service on behalf of Co-Located Loads must have the necessary control technologies and protective systems (e.g., RAS) in place to appropriately limit their withdrawals of energy from the Transmission System, consistent with their contractual rights and PJM's operational instructions.

B. Nature of Non-Firm Contract Demand Transmission Service

Non-Firm Contract Demand Transmission Service allows an Eligible Customer taking service on behalf of a Co-Located Load to access the Transmission System on a non-firm, interruptible basis during normal operations, and receive that transmission service up to a level defined in accordance with the terms of its Service Agreement.[100] As discussed above in response to Question 1 and shown in Figure 1, such Eligible Customer must request Non-Firm Contract Demand Transmission Service equivalent to the MW level of the Co-Located Load's gross demand *not* covered by Firm Contract Demand Transmission Service as part of the Service Agreement, such that the Eligible Customer is seeking to obtain sufficient Contract Demand Transmission Service to allow access to the Transmission System at a level capable of serving the Co-Located Load's entire gross demand.

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[99] *See* Show Cause Order at P 215 ("Reservations for this service shall be available for terms ranging from one hour to one month, consistent with the terms available for Non-Firm PTPS in the PJM Tariff." (footnote omitted)).

[100] *See* Show Cause Order at P 215 ("Non-Firm Contract Demand transmission service must be available during normal operations and curtailed during emergency operations (i.e., it will be curtailed before existing firm transmission services and the new Firm Contract Demand Transmission Service.")).

PJM anticipates that in practice, requests for Non-Firm Contract Demand Transmission Service will be at the MW level the Co-Located Generating Facility has dedicated to serving the Co-Located Load.[101] The Eligible Customer may then, on any given day, reserve Non-Firm Contract Demand Transmission Service up to the amount specified in the Service Agreement (but only up to the MW level that the Co-Located Generating Facility is on outage). However, such requests for Non-Firm service shall only be granted when PJM has determined there is available transmission capacity.[102]

Per the requirements of the Show Cause Order, Eligible Customers seeking Non-Firm Contract Demand Transmission Service "will be charged for transmission and ancillary services on an as-reserved contract demand [i.e., usage only] basis" and will be charged "regulation and black start services based on a gross demand basis."[103] Finally, consistent with the Show Cause Order, an Eligible Customer can seek a transmission reservation for Co-Located Load in advance for the duration of an expected outage of the associated Co-Located Generating Facility.[104]

C. Initiating Non-Firm Contract Demand Transmission Service

As with requests for Firm Contract Demand Transmission Service, upon receiving a request for Non-Firm Contract Demand Transmission Service, PJM will coordinate with the affected Transmission Owner(s) to complete necessary studies to determine whether—and at what level—Non-Firm Contract Demand Transmission Service can be reliably

[101] Illustrative Tariff, Part XI, Subpart B, section 709.2.

[102] *See* Show Cause Order at P 215; Tariff, Part II, section 14.1. This is consistent with the Show Cause Order's statement that an "Eligible Customer taking transmission service on behalf of Co-Located Loads that will not withdraw energy from the transmission system must take Non-Firm Contract Demand transmission service at 0 MW." Show Cause Order at P 206.

[103] Show Cause Order at P 216.

[104] *See* Show Cause Order at P 214.

provided.[105] If PJM determines that only a portion or none of the Non-Firm Contract Demand Transmission Service requested by an Eligible Customer can be provided reliably, PJM will provide a written explanation of its reasons for denial of service.[106] In such case, the Eligible Customer may either apply for the amount of Firm Contract Demand Transmission Service necessary to cover the Co-Located Load's entire gross demand, or alternatively, apply to serve the entire Co-Located Load through NITS.[107]

D. Study Procedures for Non-Firm Contract Demand Transmission Service

As discussed, PJM will not study transmission service requests alone, but rather will coordinate and consult with any affected Transmission Owners to determine whether and how the requested transmission service may be provided. Thus, upon receipt of a request for Non-Firm Contract Demand Transmission Service, PJM will notify the affected Transmission Owner(s) of such request.[108] PJM and the affected Transmission Owner(s) will determine whether additional studies are required "to assess whether the Transmission System has sufficient available capacity to provide Non-Firm Contract Demand Transmission Service, and if so, which studies are appropriate."[109] To be clear, these studies relate only to the maximum amount of Non-Firm Contract Demand Transmission Service that would be allowed under a specific Service Agreement. PJM expects to perform different evaluations to actually use such service on the Transmission System on any given day.

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[105] Illustrative Tariff, Part XI, Subpart B, section 710.3.

[106] Illustrative Tariff, Part XI, Subpart B, section 710.3.

[107] Illustrative Tariff, Part XI, Subpart B, section 710.3.

[108] Illustrative Tariff, Part XI, Subpart B, section 712.2.

[109] Illustrative Tariff, Part XI, Subpart B, section 712.2.

E. Curtailment of Non-Firm Contract Demand Transmission Service

Non-Firm Contract Demand Transmission Service will be Curtailed before Firm Contract Demand Transmission Service and NITS as required by the Commission in the Show Cause Order.[110] As discussed in greater detail in response to Question 11, PJM may curtail Non-Firm Contract Demand Transmission Service prior to dispatching the Pre-Emergency Load Response Program as further set forth in the PJM Manuals,[111] or in response to a transfer capability shortage.[112]

F. Necessary Control Technologies and Protection Systems to Protect the Transmission System by Limiting Energy Withdrawals

As part of implementing the key principles that (1) the services are designed to serve loads that are "willing and able to control their withdrawals from the transmission system;"[113] and (2) the services are designed to allow PJM to maintain system reliability, PJM is requiring Eligible Customers taking Non-Firm Contract Demand Transmission Service to work with PJM and affected Transmission Owners to "establish necessary control technologies and protection systems, . . . which may include a [RAS], for each Service Agreement for Non-Firm Contract Demand Transmission Service."[114]

The control technologies and protection systems necessary to provide Non-Firm Contract Demand Transmission Service (and Interim NITS) is emblematic of the

[110] Show Cause Order at P 215; illustrative Tariff, Part XI, Subpart B, section 713.4.

[111] The Tariff provides that the Pre-Emergency Load Response Program is "the program by which Curtailment Service Providers may be compensated by PJM for Demand Resources that will reduce load when dispatched by PJM during pre-emergency conditions, and is described in Operating Agreement, Schedule 1, section 8 and the parallel provisions of Tariff, Attachment K-Appendix, section 8." Tariff, Definitions – O – P - Q.

[112] Illustrative Tariff, Part XI, Subpart B, section 713.4.

[113] Show Cause Order at P 204 (footnote omitted).

[114] Illustrative Tariff, Part XI, Subpart B, section 713.6.

complexity associated with Non-Firm Contract Demand Transmission Service from an operations and planning perspective.[115]

Each and every Service Agreement for Non-Firm Contract Demand Transmission must include the necessary control technologies and protection systems to ensure the reliability and stability of PJM's Transmission System. As Dr. Abdulsalam explains, Non-Firm Contract Demand Transmission Service (or Interim NITS) "will need to be evaluated on a per-request basis and will be tied to necessary control technologies or protection systems, which may include RAS . . . to ensure that the contracted-for withdrawal level is not exceeded and that the pre-scheduled, non-firm withdrawal level can only be reliably enabled under conditions that PJM has agreed to."[116] In his affidavit, Mr. Wharton, a Manager of Reliability Engineering within PJM and a NERC Certified System Operator, further elaborates on the operational complexities that may be associated with RAS.[117] As Mr. Wharton explains, an RAS "is designed to detect abnormal system conditions and "to automatically take appropriate corrective action to maintain system stability, acceptable system voltages, and acceptable facility loading."[118] Mr. Wharton testifies, however, that RAS "should not be installed as a substitute for good system design or operating practices."[119]

Together, Dr. Abdulsalam and Mr. Wharton explain why control technologies and protection systems (e.g., RAS) are necessary to protect the Transmission System from

[115] *See* Abdulsalam Aff. ¶¶ 9-12.

[116] Abdulsalam Aff. ¶ 9.

[117] Wharton Aff. ¶ 16.

[118] Wharton Aff. ¶ 15.

[119] Wharton Aff. ¶ 16.

significant unexpected events that may occur with Non-Firm Contract Demand Transmission Service (and Interim NITS). Without the necessary control technologies and protection systems tied to Non-Firm Contract Demand Transmission Service (and as discussed below, Interim NITS), an Eligible Customer may, for example, withdraw energy during peak periods above what it had previously contracted (or contrary to PJM dispatch instructions), for which PJM has not planned either adequate transmission or generation capacity, putting other customers at risk.[120] PJM has developed penalties that address, *inter alia*, instances where a control technology or protection system tied to an Eligible Customer's Non-Firm Contract Demand Transmission Service misoperates. PJM describes these penalties in response to the Commission's Briefing Questions 5 and 6 below.

G. Rates and Charges for Non-Firm Contract Demand Transmission Service

Consistent with the allocation of rights between PJM and PJM Transmission Owners,[121] PJM expects the PJM Transmission Owners to file briefing in the paper hearing record describing the proposed transmission rates for each of these new transmission services, including Non-Firm Contract Demand Transmission Service. However, with respect to the other rates that PJM has authority to institute, as for Firm Contract Demand Transmission Service, PJM will assess Eligible Customers taking Non-Firm Contract Demand Transmission Service based on their actual usage of the system:

- administrative services charges under Tariff, Schedule 1A; Tariff, Schedule 9; and Tariff, Schedule 10 based on the total quantity of MWhs of

[120] *See* Show Cause Order at P 211 ("PJM will only plan the transmission system and procure generation capacity for the contract demand—not for load growth, like it does for NITS customers—and PJM will have no obligation to serve the Eligible Customer beyond the contract demand.").

[121] *See supra* note 4.

energy delivered using Non-Firm Contract Demand Transmission Service, except any capacity-related charges under these schedules will not apply;[122]

- Ancillary Services charges, except for Regulation, based on the total quantity in MWhs of energy delivered to the Co-Located Load using Non-Firm Contract Demand Transmission Service in accordance with Part I, section 3; and

- any redispatch costs as set forth in Tariff, Attachment K.

In addition, Non-Firm Contract Demand Transmission Service customers will be responsible for Regulation and Black Start Service charges based on the gross demand of the Co-Located Load, to the extent the customer is not paying such charges associated with its Firm Contract Demand Transmission Service.[123] Notably, given that there is one Service Agreement for both Contract Demand Transmission Services, any Eligible Customer taking Contract Demand Transmission Service will not be double billed for the Regulation and Black Start Service for the Co-Located Load served under a given Service Agreement.

H. Pro Forma *Contract Demand Transmission Service Agreement*

As discussed, PJM has provided in Attachment A an illustrative Tariff, Attachment F-4, a *pro forma* Service Agreement for *both* Firm Contract Demand Transmission Service and Non-Firm Contract Demand Transmission Service.[124] Thus, a single Service Agreement will detail an Eligible Customer's subscription for both types of service, and allow one agreement to govern the Eligible Customer's transmission service on behalf of the Co-Located Load.

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[122] Illustrative Tariff, Part XI, Subpart B, section 714.5.

[123] *See* Illustrative Tariff, Part XI, Subpart B, section 715.4 ("To the extent the Eligible Customer does not have an effective Service Agreement for Firm Contract Demand Transmission Service, Eligible Customer shall pay Black Start Service charges based on the gross demand of the Co-Located Load in accordance with Tariff, Schedule 6A. To the extent the Eligible Customer does not have an effective Service Agreement for Firm Contract Demand Transmission Service, Eligible Customer shall pay Regulation charges based on a gross demand of the Co-Located Load.").

[124] Illustrative Tariff, Attachment F-4.

Question 3:

As noted above, a Co-Location Arrangement is synchronized to the transmission system. Should the rate paid by an Eligible Customer on behalf of a Co-Located Load taking only the new Non-Firm Contract Demand transmission service that elects to not reserve any amount of that service for a period of time (e.g., one month) reflect not only charges for regulation and black start services, but also an additional charge given that regulation and black start services could not be provided without the transmission system? If so, how should that additional charge be determined?

Response to Question 3:

Consistent with the allocation of rights between PJM and PJM Transmission Owners,[125] PJM expects the PJM Transmission Owners to file briefing in the paper hearing record answering this question. Upon review of that briefing, PJM may provide additional commentary or perspectives in its reply brief.

[125] *See supra* note 4.

Question 4:

> *As noted above, a Co-Location Arrangement is synchronized to the transmission system. Should the rate paid by an Eligible Customer on behalf of a Co-Located Load taking only a de minimis amount of the new Firm or Non-Firm Contract Demand transmission services reflect not only (i) charges for regulation and black start service and (ii) the transmission service charges for that de minimis amount of service, but also an additional charge reflecting that the Co-Location Arrangement is physically connected and synchronized to the PJM transmission system? If so, how should that additional charge be determined?*

Response to Question 4:

Consistent with the boundaries between PJM and PJM Transmission Owners,[126] PJM expects the PJM Transmission Owners to file briefing in the paper hearing record answering this question. Upon review of that briefing, PJM may provide additional commentary or perspectives in its reply brief.

[126] *See supra* note 4.

Question 5:

What is the appropriate penalty charge or other remedial action that PJM should take to address any unreserved use of the PJM transmission system for an Eligible Customer taking Firm Contract Demand transmission service on behalf of a Co-Located Load?

Response to Question 5:

PJM addresses, below, the appropriate penalty charges or other remedial actions (together "penalties") applicable to Eligible Customers taking transmission service on behalf of a Co-Located Load using: (i) Firm Contract Demand Transmission Service; (ii) Non-Firm Contract Demand Transmission Service; and (iii) Interim NITS prior to automatically transitioning to NITS on behalf of a Co-Located Load. PJM supports three different penalties applicable where such Eligible Customers: (i) fail to follow established Load Shedding and Curtailment procedures; (ii) rely on necessary control technologies or protection systems in accordance with the PJM Manuals, which may include a RAS, that fail (i.e., misoperate) more than once; and (iii) makes unreserved use of the PJM Transmission System.

The illustrative Tariff provisions governing the three penalties applicable to Eligible Customers are as follows:

Table 1. Penalties Applicable to Eligible Customers Taking Contract Demand Transmission Service or Interim NITS

	Disqualification (First Failure to Shed Load or Curtail)	Service Paused (First Control Tech or Protection System Misoperation)	Disqualification (Second Control Tech or Protection System Misoperation)	Financial Penalty (Unreserved Use)
Firm Contract Demand	Illustrative Tariff, Part XI, Subpart B, sections 713.7(a), 713.7(c)	N/A	N/A	To be determined
Non-Firm Contract Demand	Illustrative Tariff, Part XI, Subpart B, sections 713.7(a), 713.7(c)	Illustrative Tariff, Part XI, Subpart B, sections 713.7(b), 713.7(c)	Illustrative Tariff, Part XI, Subpart B, sections 713.7(b), 713.7(c)	To be determined
Interim NITS	Illustrative Tariff, Part XI, Subpart A, sections 705.6(a), 705.6(c)	Illustrative Tariff, Part XI, Subpart A, sections 705.6(b), 705.6(c)	Illustrative Tariff, Part XI, Subpart A, sections 705.6(b), 705.6(c)	To be determined

A. Disqualification or Pause in Service

1. Disqualification after first failure of Eligible Customer to shed load or curtail in accordance with established procedures

Under PJM's approach, Eligible Customers taking Firm Contract Demand Transmission Service, Non-Firm Contract Demand Transmission Service, or Interim NITS on behalf of a Co-Located Load may be subject to remedial action in the event that the Eligible Customer "fails to respond to established Load Shedding and Curtailment procedures."[127]

The proposed remedial action is a strict liability rule that automatically applies after being triggered by one instance of an Eligible Customer failing to follow Curtailment or Load Shed procedures. The rule is triggered after one failure and applied automatically on

[127] Illustrative Tariff, Part XI, Subpart A, section 705.6(a); *id.*, Part XI, Subpart B, section 713.7(a).

a strict liability basis because of the significant reliability risk posed by Eligible Customers who disregard Load Shed or Curtailment procedures.

Such an approach is just and reasonable and consistent with the two key principles: (1) these Eligible Customers are "willing and able to control their withdrawals from the transmission system;"[128] and (2) the services are designed to allow PJM to maintain system reliability. Allowing customers that are allowed on the system on the promise that they will control their energy withdrawals as necessary, and then not penalizing them for failing to honor that promise runs counter to the Show Cause Order and would implicitly bless such dangerous behavior.

Under illustrative Tariff, Part XI, Subpart B, section 713.7(a), an Eligible Customer taking Firm or Non-Firm Contract Demand Transmission Service on behalf of a Co-Located Load is disqualified from taking Firm or Non-Firm Contract Demand Transmission Service if the Eligible Customer fails to respond to Load Shedding and Curtailment under established procedures set forth in illustrative Tariff, Part XI, Subpart B, section 713. Importantly, however, an Eligible Customer disqualified from taking Firm or Non-Firm Contract Demand Transmission Service may continue taking transmission service on behalf of Co-Located Load by either taking NITS or by qualifying for Interim NITS.

Under illustrative Tariff, Part XI, Subpart A, section 705.6(a), an Eligible Customer taking Interim NITS on behalf of a Co-Located Load is disqualified from taking Interim NITS, Firm Contract Demand Transmission Service, and Non-Firm Contract Demand Transmission Service if the Eligible Customer fails to respond to established Load

[128] Show Cause Order at P 204 (footnote omitted).

Shedding and Curtailment procedures set forth in illustrative Tariff, Part XI, Subpart A, section 705. Importantly, however, such an Eligible Customer may take NITS, which would begin after all necessary upgrades are placed into service.

2. Misoperation of necessary control technology and protection system schemes

Eligible Customers taking Interim NITS or Non-Firm Contract Demand Transmission Service must, pursuant to illustrative Tariff, Part XI, Subpart A, section 705.5 and illustrative Tariff, Part XI, Subpart B, section 713.6, respectively, must implement all necessary control technology and protection system schemes, as outlined and agreed upon in their respective transmission Service Agreements. As discussed above in response to Question 2, these control technology and protection schemes, which may include RAS, must be developed by PJM, the affected Transmission Owner(s), and the Eligible Customer and approved by PJM and operate in accordance with PJM Manuals and applicable NERC reliability requirements.[129]

When a control technology or protection scheme misoperates, there can be serious consequences. Misoperation, as contemplated by PJM, relies on and incorporates the term as defined by NERC (e.g., PRC-004-6).[130]

According to PJM witness Mr. Wharton, "the consequences of an RAS misoperation are often more severe than those of fault protection schemes. While an RAS may be a temporary solution until the transmission system is reinforced, PJM Manuals indicate that PJM's systems and operating procedures were designed to be served by NITS,

[129] *See* illustrative Tariff, Part XI, Subpart A, section 705.6(b).

[130] *See, e.g.*, *PRC-004-6 – Protection System Misoperation Identification and Correction*, North American Electric Reliability Corporation (June 12, 2025), https://www.nerc.com/globalassets/standards/reliability-standards/prc/prc-004-6.pdf.

eliminating the need for RAS while ensuring generation can be dispatched to serve load."[131] "For any RAS, PJM, in its role as the Reliability Coordinator, reviews the scheme and provides feedback to the RAS-entity within four full calendar months or a schedule that is mutually agreed upon in keeping with R2 of NERC Reliability Standard PRC-012-02."[132] The illustrative Tariff provides PJM a similar authority as the ultimate decider for any necessary control technology or protective system for these services.[133]

a. Pause in service after first misoperation of a necessary control technology or protection system scheme

PJM's approach calls Eligible Customers taking Contract Demand Transmission Service (both Firm and Non-Firm) or Interim NITS on behalf of a Co-Located Load be subject to remedial action in the first instance where an Eligible Customer's necessary control technology or protection system scheme misoperates.[134] After one instance of misoperation, the Eligible Customer will be prohibited from taking transmission service or otherwise withdrawing energy from the Transmission System for a period up to 120 days from misoperation, which may be shortened or extended per mutual agreement, to allow for an analysis of the necessary control technology or protection system scheme's operational performance.[135] The up to 120-day pause pending evaluation of the

[131] Wharton Aff. ¶ 16.

[132] Wharton Aff. ¶ 18; *PRC-012-2 – Remedial Action Schemes*, North American Electric Reliability Corporation (June 12, 2025), https://www.nerc.com/globalassets/standards/reliability-standards/prc/prc-012-2.pdf.

[133] *See* Illustrative Tariff, Part XI, Subpart A, section 705.5 ("The necessary control technologies and protection systems must: be developed in accordance with the PJM Manuals and be approved by the Transmission Provider."); *id.*, Part XI, Subpart B, section 713.6 (same).

[134] Illustrative Tariff, Part XI, Subpart A, section 705.6(a)-(b); *id.*, Part XI, Subpart B, section 713.7(a)-(b).

[135] PJM is also evaluating whether modifications would be needed to the Co-Located Generating Facility's GIA to preclude it from directly serving the Co-Located Load during this investigatory period following the failure of a necessary control technology or protection system. Such preclusion of direct service is necessary because the underlying premise of permitting these Contract Demand Transmission Services is a functional

misoperation of the necessary control technology or protection system scheme is consistent with NERC requirements for an investigation into the operation of a RAS (e.g., PRC-004-6 and PRC-012-02).[136] Such a pause in service will allow PJM (and the affected Transmission Owner(s), as necessary) time to investigate, identify, and implement fixes to better protect the Transmission System, while respecting the Eligible Customer's desire to retain this type of service based on its promised willingness to limit energy withdrawals.

b. Disqualification after second necessary control technology or protection system scheme misoperation

After a second instance of a necessary control technology or protection system scheme misoperating, the Eligible Customer will be disqualified from taking Contract Demand Transmission Service (both Firm and Non-Firm) or Interim NITS on behalf of a Co-Located Load.

The proposed remedial action is a strict liability rule that automatically applies after being triggered by two instances of an Eligible Customer's necessary control technology or protection system scheme misoperation. The rule is triggered after two instances in which a necessary control technology or protection system scheme(s) misoperates. The rule is applied automatically on a strict liability basis because of the significant reliability risk posed by necessary control technology or protection system scheme misoperations.

This two-strike rule appropriately implements the two key principles, in that it properly balances the desire of these loads to obtain a transmission service lesser than NITS because they are willing and able to limit their energy withdrawals, against the need to

scheme in place that limits energy withdrawals from the Transmission System—and if the scheme has failed to operate or misoperates, it cannot be considered functional.

[136] Illustrative Tariff, Part XI, Subpart A, section 705.6(b); *id.*, Part XI, Subpart B, section 713.7(b).

protect system reliability and maintain reliable service to the 67+ million customers in the PJM Region. After the second time a necessary control technology or protection system misoperates, it is evident that the necessary control technology or protection system cannot adequately protect the system from the Co-Located Load's unreserved (and unscheduled) energy withdrawals.[137]

Accordingly, under illustrative Tariff, Part XI, Subpart B, section 713.7, an Eligible Customer taking Non-Firm Contract Demand Transmission Service on behalf of a Co-Located Load is disqualified from taking Firm or Non-Firm Contract Demand Transmission Service if the Eligible Customer experiences more than one misoperation of a necessary control technology or protection system scheme. Importantly, however, an Eligible Customer disqualified from taking Contract Demand Transmission Service (both Firm and Non-Firm) may continue taking transmission service on behalf of a Co-Located Load by either taking NITS or by qualifying for Interim NITS.

Under illustrative Tariff, Part XI, Subpart A, section 705.6, an Eligible Customer taking Interim NITS on behalf of a Co-Located Load is disqualified from taking Interim NITS, Firm Contract Demand Transmission Service, and Non-Firm Contract Demand Transmission Service if the Eligible Customer experiences more than one necessary control technology or protection system scheme misoperation. Importantly, however, such an Eligible Customer may take NITS, which would begin after all necessary upgrades are placed into service.

[137] With respect to RAS in particular, Mr. Wharton details the cascading adverse effects a RAS misoperation could have the Transmission System, particularly when RASs are clustered geographically and electrically. *See* Wharton Aff. ¶¶ 21-22.

c. Option to take NITS following disqualification

Eligible Customers that have been disqualified from taking Firm Contract Demand Transmission Service, Non-Firm Contract Demand Transmission Service, or Interim NITS on behalf of Co-Located Load nonetheless retain the option to take NITS on behalf of that Co-Located Load, as Network Load, or, if not already taking Interim NITS, to qualify to take Interim NITS prior to transitioning to NITS pursuant to illustrative Tariff, Part XI, Subpart A, section 705.6(c) and illustrative Tariff, Part XI, Subpart B, section 713.7(c). This rule recognizes that NITS, in and of itself, addresses Curtailment, Load Shed, and control technology or protection scheme misoperation risk. In PJM, as Dr. Abdulsalam notes, "NITS is used for internal (non-border) transmission service in the PJM Region."[138] As Mr. Wharton testifies on behalf of PJM, "a reliable centrally dispatched Balancing Authority relies on [NITS] to ensure that generation is not 'bottled' and is deliverable to load[.]"[139] Likewise, Dr. Abdulsalam testifies that, in PJM:

> The NITS type of transmission service enables a high level of reliability across the region under system normal and abnormal operating conditions. This type of service ensures the transmission network and the needed capacity to serve such load and allows PJM to plan for and secure the requisite level of service needed to accommodate changes in system conditions and the resource mix, as it shifts with time. NITS also ensures the system overall is "proactively" planned to a forecasted level of service and the needed resource capacity to maintain the reliability of service is secured ahead of time. Given the level of reliability offered by the NITS to its transmission service loads, such loads rarely face situations of curtailments or load shedding, as they are usually limited to extreme transmission outage conditions or resource emergency conditions. In addition, PJM serves a system load that is high in density compared to its geographic footprint. The high load density in the PJM Region means that a higher load level is served from a single point of service/delivery. As a result, a higher number of customers

[138] Abdulsalam Aff. ¶ 7.

[139] Wharton Aff. ¶ 10 (footnote omitted).

> could be exposed to interruption risk under malfunction, misoperation, or unplanned interaction between more than one necessary control technologies and protection systems, which may include [RAS].[140]

Since at least its establishment as an Independent System Operator in 1997, PJM's processes have been built around the long-held practice and expectation that load internal to PJM will receive NITS. This has significant implications for PJM's planning, markets, and operations functions, which are focused on serving Network Load.

Within the existing PJM framework, transmission customers must elect one of two transmission services—NITS or Point-to-Point Transmission Service ("PTP Transmission Service"). Load Serving Entities serving end-use load within PJM take NITS,[141] while PTP Transmission Service is used for the transmission of capacity and/or energy into, out of, or through the PJM Region. More specifically, PTP Transmission Service is the use of transmission facilities for the transmission of capacity and energy between a Point of Receipt and a Point of Delivery. While all NITS is firm, PTP Transmission Service may be either firm or non-firm. Unlike PTP Transmission Service, NITS is flexible, incorporated into PJM's system planning studies and processes as well as PJM's capacity market, and always firm. Unlike customers with PTP Transmission Service, a Network Customer taking NITS must also obtain or provide Ancillary Services.

At bottom, NITS is not only the default transmission service taken by load internal to PJM, it is also significantly more comprehensive and a higher quality of service than PTP Transmission Service. The choice to take NITS, in and of itself, decreases the

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[140] Abdulsalam Aff. ¶¶ 7-8.

[141] *Pa.-N.J.-Md. Interconnection*, 81 FERC ¶ 61,257, at 62,272 (1997), *order on reh'g*, 82 FERC ¶ 61,047, *order on clarification*, 82 FERC ¶ 61,068, *modified sub nom.*, *Potomac Elec. Power Co.*, 83 FERC ¶ 61,068 (1998), *order on reh'g & clarification*, 92 FERC ¶ 61,282 (2000), *vacated, in part, and remanded sub nom.*, *Atl. City Elec. Co. v. FERC*, 295 F.3d 1 (D.C. Cir. 2002).

likelihood of significant issues arising from failure to curtail, load shed, or misoperation of a necessary control technology or protection system. Network Customers may "call upon the transmission provider to supply not just some, but all of their load at any given moment, when for instance they experience blackouts or brownouts."[142] Furthermore, NITS "allows [a] Network Customer to integrate, economically dispatch and regulate its current and planned Network Resources to serve its Network Load in a manner comparable to that in which each Transmission Owner utilizes the Transmission System to serve its Native Load Customers. [NITS] also may be used by the Network Customer to deliver economy energy purchases to its Network Load from non-designated resources on an as-available basis without additional charge."[143]

The split in PJM, in which NITS serves load within PJM and PTP Transmission Service serves load beyond PJM's borders, is the natural outgrowth of PJM's formation. In the 1997 order on PJM's transition to an Independent System Operator, the Commission noted that it is important that:

> [T]he [PJM] tariff was designed to replicate the network integration service each utility had historically provided itself within the confines of its individual service area. By allowing transmission service customers to integrate resources across eight utility systems, the PJM Transmission Tariff will permit customers to obtain a transmission service that goes beyond the requirements of the Open Access Rule. . . . We believe that . . . a single transmission service charge for multi-system use, in conjunction with its congestion pricing proposal, will foster the creation of more competitive bulk power markets, help to ration constrained capacity among competing transactions on the basis of price, and simplify the

[142] *Transmission Access Pol'y Study Grp. v. FERC*, 225 F.3d 667, 725 (D.C. Cir. 2000).

[143] Tariff, Part III, Preamble; Transmission Service Department, *PJM Manual 2: Transmission Service Request*, PJM Interconnection, L.L.C., section 1.1.2 (Jan. 22, 2026), https://www.pjm.com/-/media/DotCom/documents/manuals/m02.pdf.

> reassignment of transmission capacity. This is consistent with our policy goals in the Open Access Rule.[144]

PJM's illustrative Tariff provision offers a balanced and conservative approach that enables Eligible Customers to take transmission service that is less than NITS on behalf of Co-Located Load, while also recognizing that permitting Eligible Customers to take non-NITS transmission services on behalf of Co-Located Load may pose additional reliability and operational risks to the PJM Region.

B. Financial Penalty for Unreserved Use of the PJM Transmission System

PJM supports a penalty for unreserved use *in addition to* the disqualification and pause-in-service rules discussed above. As PJM has previously noted, an operational penalty for unreserved use is "not intended to operate as a punishment for a tariff violation."[145] PJM expects that many, if not most, Eligible Customers taking service on behalf of a Co-Located Load could foreseeably elect to absorb financial penalties for unreserved use rather than follow Curtailment or Load Shed procedures or avoid misoperation of the protective technology or system. Thus, in PJM's view, financial penalties, alone, are not sufficient to incentivize Eligible Customers to comply with Load Shed, Curtailment, and control technology and protection system obligations. As such, PJM has additionally proposed the disqualification and pause-in-service remedial actions discussed above.

With regard to the financial penalty, PJM intends to work with the PJM Transmission Owners to explore such a financial penalty. As such, PJM has "reserved" illustrative Tariff, Part XI, Subpart A, section 705.7 and illustrative Tariff, Part XI, Subpart

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[144] *Pa.-N.J.-Md. Interconnection*, 81 FERC ¶ 61,257, at 62,241 (footnote omitted).

[145] *PJM Interconnection, L.L.C.*, 134 FERC ¶ 61,040, at P 8 (2011) (footnote omitted).

B, section 713.8 in anticipation of the development of financial penalty provisions. Unreserved use penalties should apply to Eligible Customers taking Firm Contract Demand Transmission Service, Non-Firm Contract Demand Transmission Service, or Interim NITS on behalf of Co-Located Load.

Question 6:

What is the appropriate penalty charge or other remedial action that PJM should take to address any unreserved use of the PJM transmission system for an Eligible Customer taking Non-Firm Contract Demand transmission service on behalf of a Co-Located Load?

Response to Question 6:

See Response to Question 5 above, which addresses penalty charges and remedial actions applicable to Non-Firm Contract Demand Transmission Service, Firm Contract Demand Transmission Service, and Interim NITS.

Question 7:

What are the appropriate mechanisms for an anti-toggling feature for the Firm Contract Demand transmission service, including the appropriate minimum service period and minimum notice period for discontinuing or modifying the level of service?

Response to Question 7:

The Show Cause Order found that the terms and conditions for taking new Firm Contract Demand Transmission Service should include a mechanism that prevents a transmission customer from switching from Firm to Non-Firm Contract Demand Transmission Service so as to avoid charges associated with PJM's capacity market.[146] To implement this directive, PJM includes a two-pronged approach. One, illustrative Tariff, Part XI, Subpart B, section 709.4 provides an anti-toggling mechanism to prevent transmission customers from switching between the Firm and Non-Firm Contract Demand Transmission Services, by providing that the portion of the Co-Located Load served by Firm Contract Demand Transmission Service is not eligible to be served by Non-Firm Contract Demand Transmission Service "for five years following the effective date of the Service Agreement for Contract Demand Transmission Service."

Conversely, there is no prohibition on any portion of the Co-Located Load served by Non-Firm Contract Demand Transmission Service from being served by Firm Contract Demand Transmission Service in future years. This is reasonable, as Firm Contract Demand Transmission Service is a higher quality of service and presents less risk to system

[146] Show Cause Order at P 213 ("[W]e find that it is just and reasonable that the terms and conditions for taking the new Firm Contract Demand transmission service must prevent transmission customers from switching between the Firm Contract Demand and Non-Firm Contract Demand transmission services, i.e., must include an anti-toggling mechanism. Otherwise, Eligible Customers taking transmission service on behalf of Co-Located Loads may attempt to switch between the two new transmission services based on expected capacity market conditions.").

reliability and fewer operational complexities for PJM's dispatchers to manage. That is, because PJM will plan the Transmission System to ensure the Firm Contract Demand Transmission Service MW quantity and PJM will consider such amount in resource adequacy planning,[147] the system will be *designed* to serve the Firm Contract Demand Transmission Service, minimizing much of the system reliability risks presented by Non-Firm Contract Demand Transmission Service.

However, the foregoing limitations will "not apply in the event of (i) a physical change to the Co-Located Generating Facility that would materially and permanently alter the [MW] level dedicated to the Co-Located Load; or (ii) a physical change to the Co-Located Load that would materially and permanently alter the [MW] level of its gross demand."[148] These exceptions are necessary to ensure that, should an Eligible Customer or Co-Located Load materially and permanently change either the generation capacity or the load on a gross demand basis, the Tariff provides flexibility to determine whether Firm or Non-Firm Contract Demand Transmission Service should be taken for the new incremental portion.

Two, the 42-month notice of termination also acts as an anti-toggling device in a manner similar to the five-year commitment period applicable to the Fixed Resource Requirement alternative in PJM's capacity market.[149] This notice period also is identical

[147] Illustrative Tariff, Part XI, Subpart B, section 708(b) ("Firm Contract Demand Transmission Service is for the transfer of capacity and energy to an Eligible Customer on behalf of a designated Co-Located Load, up to a defined, predetermined megawatt level of transmission service as requested by the Eligible Customer and confirmed by the Transmission Provider, using capacity and energy procured by the Transmission Provider[.]").

[148] Illustrative Tariff, Part XI, Subpart B, section 709.4.

[149] *See* Reliability Assurance Agreement Among Load Serving Entities in the PJM Region, Schedule 8.1.C, section C.2 ("RA Agreement") ("An FRR Entity may terminate its election of the FRR Alternative effective with the commencement of any Delivery Year following the minimum five Delivery Year commitment by providing written notice of such termination to the Office of the Interconnection no later than two months

to the one used for NITS agreements,[150] and recognizes that PJM is incorporating these loads in the capacity market, and has procured capacity on their behalf. Allowing Co-Located Loads to avoid capacity charges that have been incurred on their behalf by terminating their agreement prematurely would unreasonably shift those costs to other loads in the PJM Region and contrary to Commission precedent.[151]

prior to the Base Residual Auction for such Delivery Year. An FRR Entity that has terminated its election of the FRR Alternative shall not be eligible to re-elect the FRR Alternative for a period of five consecutive Delivery Years following the effective date of such termination.").

[150] *See* Tariff, Part I, section 2.5(2) ("An incumbent Network Customer seeks to terminate its service and no successor Network Customer exists, in which case the incumbent must provide PJM with forty-two (42) months' notice prior to the commencement of a Delivery Year, subject to receiving all necessary regulatory approvals for such termination, if any[.]").

[151] *See Duquesne Light Co.*, 122 FERC ¶ 61,039, at P 86 (2008) ("[W]e conclude that Duquesne's obligations to pay Locational Reliability Charges, under the RA Agreement, became set at such time as Duquesne's loads were included by PJM in its auction parameters.").

Question 8:

> *What interconnection requirements and operational practices are necessary for special protection schemes to maintain system reliability (e.g. the need for full redundancy of such schemes) in the event that a Co-Located Load itself or its associated generator trips offline?*

Response to Question 8:

PJM understands the "special protection schemes" referenced in Question 8 to mean the "necessary control technology and protection systems" that Eligible Customers taking Interim NITS and Non-Firm Contract Demand Transmission Service on behalf of Co-Located Load will need to outline in their respective Service Agreements.

Similar to the current requirement to include any agreed upon "necessary control technologies and protection systems" in an executed, or requested to be filed, unexecuted GIA, Service Agreements for Interim NITS and Non-Firm Contract Demand Transmission Service will each outline the specific necessary control technology and protection schemes, including for example a RAS, required to ensure the reliability and stability of PJM's Transmission System.

NERC has established various reliability standard requirements for the various forms of control technologies that may be relied upon for grid stability, which Eligible Customers are expected to adhere to. For example, RAS, which PJM and NERC have also historically referred to as Special Protection Systems,[152] is among the "control technology and protection systems" that PJM may deem necessary for an Eligible Customer to have. PJM includes an illustrative definition of RAS in Attachment A, which is explained in Section IV further below.

[152] In 2014, NERC replaced references to Special Protection Systems with the term RAS. *"Remedial Action Scheme" Definition Development*, North American Electric Reliability Corporation (June 2014), https://www.nerc.com/globalassets/standards/projects/2010-05.2/faq_ras_definition_0604_final.pdf.

The interconnection requirements and operational practices necessary for necessary control technologies and protection systems to maintain system reliability in the event that a Co-Located Load or associated generator trips offline will be set forth in the PJM Manuals and, as applicable, NERC reliability standards.

The NERC reliability standards form baseline interconnection requirements and operational practices, while PJM, through its Manuals, provides additional details and, at times, more stringent standards for RAS. The requirements set forth in NERC reliability standards and PJM Manuals are extensive. An illustrative, non-exhaustive list of interconnection requirements and operational practices that ensure that RAS maintain system reliability includes, but is not limited to:

- Requirements and measures set forth in NERC PRC-012 associated with placing a new or functionally modified RAS in service to ensure that RAS do not introduce unintentional or unacceptable reliability risks to the Bulk Electric System, including the requirement that operational performance analyses are properly conducted and verify that RAS operation was triggered correctly. PJM Manual 3, section 1.7 expands on how PJM will review RAS to ensure that sufficient analysis, notice, documentation, and training on these RAS are established ahead of implementation and that NERC PRC-012-2 requirements are met.[153]
    - RAS are evaluated to ensure, for example, full redundancy of critical components, multiple independent tripping paths, and that RAS settings and operation avoids adverse interactions with other RAS and protection and control systems.
- PJM Manual 3, section 1.8 sets forth RAS operating criteria and the actions that PJM, the Transmission Owner, and the Generation Owner will take when PJM's Energy Management System indicates that a simulated N-1 contingency will result in an overload on the facility that can be mitigated by an RAS.[154] Due to the redundancy built into each RAS, PJM considers

[153] Transmission Operations, *PJM Manual 03: Transmission Operations*, PJM Interconnection, L.L.C., § 1.7 (Rev. 69, Nov. 20, 2025), https://www.pjm.com/-/media/DotCom/documents/manuals/m03.pdf ("PJM Manual 3").

[154] PJM Manual 3, section 1.8..

the loss of a facility and the subsequent failure of the associated RAS to be a double contingency.[155]

- PJM Manual 7, section 17.2 sets forth installation requirements that govern RAS, particularly in light of the complexity of the scheme and the consequences of RAS misoperation.

- NERC PRC-017 requires RAS maintenance and testing to ensure that RAS are properly designed, meet performance requirements, and are coordinated with other protection systems, as well as to ensure that maintenance and testing programs are developed and that misoperations are analyzed and corrected.

Importantly, while interconnection requirements and operational practices are in place to decrease the risk of relying on necessary control technologies and protection systems, the decision to employ necessary control technologies and protection systems is not taken lightly and requires weighing the complexity of the scheme and the risk and consequences of misoperation against the potential benefits. Necessary control technologies and protection systems, which may include RASs, should not be installed as a substitute for good system design or operating practices. Their implementation is generally limited to temporary conditions involving the outage of critical equipment.[156]

[155] PJM Manual 3, section 1.8.

[156] System Planning Division Transmission Planning Department, *PJM Manual 07: PJM Protection Standards*, PJM Interconnection, L.L.C., § 17.2 (Rev. 05, Sep. 25, 2025), https://www.pjm.com/-/media/DotCom/documents/manuals/m07.pdf ("PJM Manual 7").

Question 9:

What communications, alarm, SCADA452 or other requirements are necessary for PJM to monitor Co-Located Load transmission system demand status; ensure that relay settings are consistent with special protection scheme design; and inform system operator action, in order to limit withdrawals from Eligible Customers on behalf of Co-Located Load that exceed the amount of Firm or Non-Firm Contract Demand transmission services?

Response to Question 9:

PJM understands this question to be focused on the requirements currently in place and that PJM will need to put into place in order to:

- Monitor Co-Located Load Transmission System demand status;
- Ensure relay settings are consistent with special protection scheme designs, as shown in illustrative Tariff, Part XI, Subpart A, section 705.6 and illustrative Tariff, Part XI, Subpart B, section 713.7; and
- Otherwise inform system operator action in order to limit withdrawals from Eligible Customers on behalf of Co-Located Load that exceed Contract Demand Transmission Services or Interim NITS.

First, to monitor the status of the demand placed on PJM's Transmission System by Co-Located Load in order to ensure adequate reliability and stability of the Transmission System, PJM will need to develop telemetry requirements and require Co-Located Load to meet such requirements in order to monitor Co-Located Load's use of the Transmission System. PJM will need to develop data exchange and metering requirements for Co-Located Load that may be similar to those currently applicable to generation, as set forth in PJM Manual 14D, section 4.[157] The kind of requirements PJM will need to develop include, for example, specific data paths, networking requirements, and measurement types and measurement points for any given topology or generation type. Because the different

[157] Operations Planning Division, *PJM Manual 14D: Generator Operational Requirements*, PJM Interconnection, L.L.C., § 4 (Rev. 70, Dec. 17, 2025), https://www.pjm.com/-/media/DotCom/documents/manuals/m14d.pdf.

types of services being made available to Eligible Customers taking service on behalf of Co-Located Load are prioritized differently, PJM would need to develop the capability to more granularly differentiate, at a minimum, between NITS and Interim NITS, and between Firm Contract Demand Transmission Service and Non-Firm Contract Demand Transmission Service. Eligible Customers, acting on behalf of Co-Located Load, would need to take these different forms of transmission service on different feeders, or cables leaving substations, to ultimately serve the Co-Located Load.

Second, to adequately ensure that relay settings are consistent with the design of the necessary control technologies and protection systems (e.g., RAS), as agreed to by PJM and set forth in each Service Agreement for Interim NITS and Non-Firm Contract Demand Transmission Service put into place in order for an Eligible Customer to serve Co-Located Load, PJM will need to develop requirements and identify any relevant NERC rules.[158]

In addition, Transmission Owners will need to be heavily involved in ensuring that necessary control technology and/or protective system is properly designed and, where appropriates, operates as intended.

Given that the complexity introduced by the necessary control technology and protection systems (e.g., RAS) introduces significant risks,[159] including possible failure to communicate material information about such protective technology or system, the illustrative Tariff includes technical requirements that must be in place prior to the commencement of service, including that the Eligible Customer "is staffed with PJM

[158] NERC requirements already set forth requirements that ensure relay settings are consistent with the design of the RAS. An RAS must comply with PJM Manual 3, sections 1.7 and 1.8; PJM Manual 7, section 17; and all applicable NERC requirements; and the new illustrative Tariff, sections 705.5 and 713.6.

[159] *See* Wharton Aff. ¶¶ 16, 22 & 23.

Certified Operators pursuant to PJM Manual 40" and has the "ability to receive voice and electronic signals from [PJM]."[160]

Third, as discussed above, PJM will need to rely on developing telemetry to remain informed of unreserved use by Eligible Customers taking Contract Demand Transmission Service or Interim NITS. PJM is still determining the scope of the tools and requirements that will need to be developed in order to limit withdrawals that exceed reserved use.

In addition to developing new requirements, as Senior Director of Forward Market Operations for PJM Mr. Horger testifies, PJM will need to make changes to core Markets and Operations systems in order to incorporate the information provided by Eligible Customers and Co-Located Load, as needed, to ensure reliability and stability of the PJM Transmission System.[161] Changes to these systems will necessarily be dependent on vendor availability, the speed with which the system changes can be designed, and the interaction of these requested changes with other competing priorities, including system changes to implement other Commission-directed initiatives.[162]

[160] *See* Illustrative Tariff, Part XI, Subpart A, section 702.4; *id.*, Part XI, Subpart B, section 710.4.

[161] Horger Aff. ¶ 16.

[162] Horger Aff. ¶ 16.

Question 10:

What other eligibility requirements, e.g., interconnection requirements or operational practices, are necessary for an Eligible Customer to take Firm Contract Demand or Non-Firm Contract Demand transmission service on behalf of Co-Located Load?

Response to Question 10:

Please see PJM's above answers to Questions 1 and 2, as well as Section III below discussing Interim NITS, which, among other non-rate terms and conditions, discusses interconnection requirements or operational practices that PJM envisions would be necessary to implement these new transmission services.

Question 11:

What are the appropriate procedures to govern the circumstances under which PJM curtails an Eligible Customer taking the interim, non-firm transmission service, Firm Contract Demand transmission service, or Non-Firm Contract Demand transmission service on behalf of a Co-Located Load during emergency procedures? In particular, can PJM shed all or a portion of a Co-Located Load on whose behalf an Eligible Customer takes Non-Firm Contract Demand transmission service while continuing to serve all or a portion of a Co-Located Load on whose behalf an Eligible Customer takes Firm Contract Demand transmission service?

Response to Question 11:

Question 11 focuses on Curtailment of Eligible Customers taking transmission service on behalf of a Co-Located Load "during emergency procedures," or to avoid the need to implement escalating emergency procedures, which PJM understands to mean "Emergency Operations," as set forth in Tariff, Attachment K-Appendix, section 8 and PJM Manual 13.

PJM has included, in the illustrative Tariff provisions and Service Agreements, provisions that address Curtailment procedures during Emergency Operations.

A. New Curtailment Procedures Applicable to Eligible Customers Taking Service on Behalf of a Co-Located Load During Emergency Operations

Under the illustrative Tariff provisions, Interim NITS and Non-Firm Contract Demand Transmission Service will be curtailed before Firm Contract Demand Transmission Service and NITS. The Transmission Provider may also curtail Interim NITS or Non-Firm Contract Demand Transmission Service prior to dispatching the Pre-Emergency Load Response Program as further set forth in the PJM Manuals, or in response to a transfer capability shortage as a result of system reliability conditions. This effectively means that Interim NITS and Non-Firm Contract Demand Transmission Service will be

curtailed before Demand Response resources are called upon to reduce load.[163] For purposes of Curtailment, Firm Contract Demand Transmission Service will be treated as the equivalent of NITS.[164]

To the extent that a system contingency exists on the Transmission Provider's Transmission System and the Transmission Provider determines that it is necessary for the Transmission Owners and an Eligible Customer taking Interim NITS, Firm Contract Demand Transmission Service, or Non-Firm Contract Demand Transmission Service to shed load, the Eligible Customer and the affected Transmission Owner(s) must shed load in accordance with previously established procedures under the relevant Service Agreement for Interim NITS (Attachment F-3A) or for Contract Demand Transmission Service (Attachment F-4).

Consistent with PJM's provision of NITS,[165] PJM is reserving the right, consistent with Good Utility Practice and on a not unduly discriminatory basis, to curtail Interim NITS, Firm Contract Demand Transmission Service, and/or Non-Firm Contract Demand Transmission Service without liability on PJM's part "for the purpose of making necessary adjustments to, changes in, or repairs on its lines, substations and facilities," and in cases where the continuance of Interim NITS, Firm Contract Demand Transmission Service, and/or Non-Firm Contract Demand Transmission Service would endanger persons or property.[166] PJM will give the Eligible Customer as much advance notice as is practicable in the event of such Curtailment.

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[163] Illustrative Tariff, Part XI, Subpart A, section 705.2; *id.*, Part XI, Subpart B, section 713.4.

[164] Illustrative Tariff, Part XI, Subpart A, section 713.3.

[165] Tariff, section 33.7.

[166] Illustrative Tariff, Part XI, Subpart A, section 705.4, *id.*, Part XI, Subpart B, section 713.5.

B. Curtailment of an Eligible Customer Taking Both Firm and Non-Firm Contract Demand Transmission Service on Behalf of a Co-Located Load During Emergency Operations

Question 11 asks, "in particular, whether PJM can shed all or a portion of a Co-Located Load on whose behalf an Eligible Customer takes Non-Firm Contract Demand transmission service while continuing to serve all or a portion of a Co-Located Load on whose behalf an Eligible Customer takes Firm Contract Demand transmission service." PJM understands the Commission to be asking whether PJM has the operational capability to appropriately prioritize Load Shed based on level of transmission service when an Eligible Customer serves a Co-Located Load under both a Firm Contract Demand Transmission Service Agreement and a Non-Firm Contract Demand Transmission Service Agreement.

For example, if a 15-MW Co-Located Load is served by an Eligible Customer with a Firm Contract Demand Transmission Service Agreement for 5 MWs and a Non-Firm Contract Demand Transmission Service for 10 MWs, can PJM operationally differentiate between and appropriately prioritize the 5 MWs of Firm Contract Demand Transmission Service and the 10 MWs of Non-Firm Contract Demand Transmission Service? Currently, PJM's core Markets and Operations Systems including modifying the Intermediate and Real-Time Security Constrained Economic Dispatch (IT SCED and RT SCED), Day-Ahead Market software, and PJM dispatch tools, do not automate Curtailment of Non-Firm Contract Demand Transmission Service (or Interim NITS) before Firm Contract Demand Transmission Service. Currently, the system does not differentiate between different types of transmission service being used to serve load within PJM, because all

load within PJM is currently served by NITS.[167] Thus, as an initial matter, as Mr. Horger notes, core systems, including software changes, would need to be implemented to enable this level of granularity when shedding an Eligible Customer's Co-Located Load being served by two different levels of transmission service.[168] Assuming that these core system design changes can be and are implemented, Eligible Customers taking transmission service on behalf of Co-Located Load, would need to take these different forms of transmission service on different feeders, or cables leaving substations, to ultimately serve the Co-Located Load.[169] PJM would need to develop these requirements, as outlined, above, in PJM's response to Question 9.

III. INTERIM NETWORK INTEGRATION TRANSMISSION SERVICE

The Commission in the Show Cause Order recognized that Co-Located Loads desire a way to more rapidly interconnect to the PJM Transmission System and begin operation.[170] The Commission ordered PJM to develop a new service transitional to obtaining NITS that would allow new Co-Located Load to withdraw electricity from the PJM Transmission System earlier than may be otherwise achievable if these loads were required to await completion of any necessary Network Upgrades for NITS.[171] Therefore, PJM has developed a new, transitional Interim NITS that will accelerate the time needed for an Eligible Customer to start taking service on behalf of a Co-Located Load than otherwise would be required to provide a Co-Located Load with NITS equivalent to that a

[167] *See* Abdulsalam Aff. ¶ 7.

[168] *See* Horger Aff. ¶ 16.

[169] *See* Abdulsalam Aff. ¶ 11.

[170] Show Cause Order at P 200.

[171] *Id.*

Network Load would receive. This service will be interim until such time that the necessary Network Upgrades, in order to serve the Co-Located Load as full Network Load, are placed in service and operational. PJM has attached illustrative Tariff language setting forth non-rate terms and conditions for this service in Attachment A, Part XI, Subpart A, sections 700-707.

However, the Briefing Questions above do not specifically focus on the non-rate terms and conditions for Interim NITS. Nonetheless, the record in this proceeding could benefit from PJM detailing non-rate terms and conditions applicable to this new transmission service type for Eligible Customers willing and able to limit energy withdrawals prior to their NITS being available (because the necessary transmission facilities are not completed). Accordingly, PJM includes this additional section to describe those rules.

A. Provision of Interim NITS and Nature and Scope of Service

Generally speaking, the non-rate terms and conditions for Interim NITS are the same as for NITS,[172] with modifications necessary to implement the interim and non-firm nature of the service. As envisioned by the Show Cause Order, Interim NITS is designed to merely be a transition service until the system can support the customer's NITS request. Thus, upon request to PJM and as determined through appropriate studies of the Transmission System by PJM and the affected Transmission Owner(s), Eligible Customers may take, on behalf of a Co-Located Load, Interim NITS—a non-firm, interruptible network transmission service until such time as the Network Upgrades necessary to provide

[172] *Compare* illustrative Tariff, Part XI, Subpart A, sections 700-07, *with* Tariff, Part III.

NITS are complete.[173] Once the necessary Network Upgrades are completed, Interim NITS customers will automatically convert to NITS customers.[174] An Eligible Customer receiving Interim NITS will receive non-firm interruptible transmission service for the delivery of energy to serve Co-Located Load.[175]

B. Initiating Service

Illustrative section 702 in Attachment A details how an Eligible Customer seeking Interim NITS on behalf of a Co-Located Load will initiate service requests. Given that Interim NITS is transitory before full NITS is available, an Eligible Customer must also be requesting NITS[176] and will need to pay an study fee "in addition to the study fee required under an Application for Network Integration Transmission Service under Tariff, Part III, section 32.2."[177] Upon receipt of the request and study fee, PJM, in consultation with the affected Transmission Owner(s) and based on the results of appropriate studies, will determine the amount of Interim NITS that can be reliably provided.[178]

As with NITS,[179] prior to obtaining Interim NITS, the Eligible Customer must meet certain conditions precedent and meet the appropriate technical requirements. Specifically, among several enumerated conditions precedent, the language would require the Eligible Customer to comply with the provisions of the "PJM Credit Policy" set forth in Tariff,

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[173] Illustrative Tariff, Part XI, Subpart A, sections 701.1, 701.4.

[174] Illustrative Tariff, Part XI, Subpart A, section 701.1.

[175] Illustrative Tariff, Part XI, Subpart A, section 701.2. Similar restrictions on third-party sales as detailed in response to Question 1 above will also apply to Interim NITS. *See* illustrative Tariff, Part XI, Subpart A, section 701.3; *supra* section II, Response to Question 1.

[176] Illustrative Tariff, Part XI, Subpart A, section 702.2 ("[A]n Eligible Customer shall not apply for Interim Network Integration Service without applying for Network Integration Transmission Service.").

[177] Illustrative Tariff, Part XI, Subpart A, section 702.2.

[178] Illustrative Tariff, Part XI, Subpart A, section 702.3.

[179] *See* Tariff, Part III, sections 29.1, 29.3.

Attachment Q; "certify[y] that it is willing and able to limit energy withdrawals from the Transmission System when requested by [PJM];" and "otherwise execute, if necessary, and comply with the PJM Governing Agreements."[180]

As for the necessary technical requirements, the Eligible Customer must (i) install "necessary hardware and software to limit energy withdrawals, including metering equipment;" (ii) provide PJM an operational contact and backup contact that is to be available 24 hours a day and 7 days a week, (iii) certify that it "is staffed with PJM Certified Operators pursuant to PJM Manual 40;" (iv) demonstrate "its ability to receive voice and electronic signals from [PJM];" (v) demonstrate that it "has operational control to respond to operating instructions from [PJM] to reduce or disconnect the Co-Located Load within 5 minutes or as specified in PJM Manuals;" and (vi) demonstrate that it "has operational control of the necessary control technologies and protection systems set forth in Section 705, as applicable."[181] The illustrative Tariff also provides that the Eligible Customer "shall be solely responsible" for constructing, maintaining, and operating all facilities on its side of the Delivery Point.[182]

C. Designation of Co-Located Load

Illustrative Attachment A, section 703 would require that an Eligible Customer taking Interim NITS designate the individual Co-Located Load on behalf of which the Eligible Customer is taking Contract Demand Transmission Service, whether Firm, Non-Firm, or both.[183] Given that the provision of Interim NITS is premised on how the

[180] Illustrative Tariff, Part XI, Subpart A, section 702.1.

[181] Illustrative Tariff, Part XI, Subpart A, section 702.4.

[182] Illustrative Tariff, Part XI, Subpart A, section 702.5.

[183] Illustrative Tariff, Part XI, Subpart A, section 703.1.

Transmission System can handle the special circumstances of the Co-Located Load arrangement prior to the completion of necessary facilities, the Co-Located Load arrangement cannot change during the term of the Interim NITS without discussion and possible further studies with PJM. Thus, section 703.2 provides that "[p]rior to the Service Commencement Date of Network Integration Transmission Service, if an Eligible Customer designates a new Co-Located Load, or increases the size of the designated Co-Located Load, the new Co-Located Load shall be studied pursuant to a new Application."

Further, in order to maintain operational visibility by PJM of the system and thus to ensure reliability, Eligible Customers shall have an ongoing obligation to provide the Transmission Provider with timely written or electronic notice of material changes in the demand characteristics of the Co-Located Load and the supply characteristics of the Co-Located Generating Facility.[184] Given that each control technology or protection scheme will be designed based on the specific circumstances and technical arrangements of each Co-Located Load arrangement, such a material change could have deleterious effects on the efficacy of the necessary control technologies and protection schemes associated with a Service Agreement for Interim NITS and PJM's ability to reliably operate the system. Thus, failure to timely inform the PJM of such material changes "may constitute a breach of the Eligible Customer's Service Agreement."[185]

D. Study Procedures for Interim NITS

To assess whether the Transmission System can accommodate a request for Interim NITS, PJM will determine whether additional studies beyond what is required to evaluate

[184] Illustrative Tariff, Part XI, Subpart A, section 703.3.

[185] Illustrative, Part XI, Subpart A, section 703.3.

the Eligible Customer's request for NITS is needed for Interim NITS.[186] If additional studies are deemed necessary, PJM will inform the Eligible Customer and will provide them with an Application and Studies Agreement in which the Eligible Customer will agree to reimburse PJM for the cost of the required studies.[187] The Eligible Customer must execute the Application and Studies Agreement within fifteen days and provide the study fee, otherwise the Application will be deemed withdrawn and the study fee will be returned with interest.[188]

E. Load Shedding and Curtailments

As envisioned by the Show Cause Order, Interim NITS is premised on the notion that the Co-Located Load is willing and able to limit its energy withdrawals from the Transmission System prior to NITS being available.[189] Accordingly, PJM developed Load Shedding and Curtailment provisions applicable to Interim NITS in illustrative Tariff, Part XI, Subpart A, section 705. In addition, Load Shed and Curtailment procedures applicable to Interim NITS are described above, in response to Question 11.

Under the provisions set forth in the illustrative Tariff, prior to the Service Commencement Date, an Eligible Customer seeking to take Interim NITS on behalf of a Co-Located Load would need to demonstrate its ability to comply with Load Shedding and Curtailment procedures as directed by PJM.[190] Whenever ordered by PJM, an Eligible Customer must implement any Load Shedding or Curtailment directive, including as

[186] Illustrative Tariff, Part XI, Subpart A, section 704.1.

[187] Illustrative Tariff, Part XI, Subpart A, section 704.1.

[188] Illustrative Tariff, Part XI, Subpart A, sections 704.1, 704.2.

[189] Show Cause Order at P 178.

[190] Illustrative Tariff, Part XI, Subpart A, section 705.1.

necessary responding to any real-time instruction to reduce or curtail load within five minutes of the directive. PJM reserves the right to curtail Interim NITS to maintain system reliability,[191] but any and all Curtailments will be on a non-discriminatory basis.[192] Load Shed instructions will be directed toward Eligible Customers in a manner that is consistent with previously established procedures under the Service Agreement for Interim NITS, and Interim NITS will be curtailed before Firm Contract Demand Transmission Service and NITS and PJM may curtail Interim NITS prior to initiating a pre-emergency event.[193] PJM may also instruct Eligible Customers taking Interim NITS to shed load in accordance with previously established procedures under the Service Agreement for Interim NITS (Attachment F-3A).[194]

As discussed, as part of implementing the key principles that (1) the services are designed to serve loads that are "willing and able to control their withdrawals from the transmission system;"[195] and (2) the services are designed to allow PJM to maintain system reliability, PJM is requiring Eligible Customers taking Interim NITS to work with PJM and affected Transmission Owners to "establish necessary control technologies and protection systems, which may include a Remedial Action Scheme, for each Service Agreement for Interim [NITS]."[196]

PJM's response to Question 5, above, discusses the processes and procedures for establishing these schemes for limiting the Co-Located Load's withdrawal of energy from

[191] Illustrative Tariff, Part XI, Subpart A, section 705.5.

[192] Illustrative Tariff, Part XI, Subpart A, section 705.1.

[193] Illustrative Tariff, Part XI, Subpart A, section 705.2.

[194] Illustrative Tariff, Part XI, Subpart A, section 705.3.

[195] Show Cause Order at P 204.

[196] Illustrative Tariff, Part XI, Subpart A, section 705.5.

the Transmission System and for protecting the Transmission System from the adverse operational effects of unscheduled energy withdrawals. As discussed, above, in PJM's response to Question 5, Eligible Customers may be temporarily paused and subsequently disqualified from taking Interim NITS following two misoperations of any necessary control technology or protection system. Likewise, as explained, above, in response to Question 5, an Eligible Customer that fails to respond to established Load Shedding and Curtailment procedures on one occasion will be disqualified from taking Interim NITS.[197] To the extent an Eligible Customer is disqualified from taking Interim NITS, the Eligible Customer—having demonstrated that it is *not* willing (because it did not follow instruction) or able (because the protection scheme failed twice) to limit energy withdrawals—must wait until the facilities necessary to provide NITS are completed before it can resume service to this Co-Located Load.[198]

F. Rates and Charges for Interim NITS

Consistent with the allocation of rights between PJM and PJM Transmission Owners,[199] PJM expects the PJM Transmission Owners to brief a transmission rate appropriate for Interim NITS.

However, Eligible Customers will be assessed other rates in addition to transmission service rates, and PJM has authority to institute such non-transmission-related rates. Thus, section 706 provides that PJM would assess:

- administrative services charges under Schedule 1A, Schedule 9, and Schedule 10 of the Tariff, consistent with the charges assessed to loads taking NITS;[200]

[197] *See supra* section II, response to Question 5.

[198] *See* illustrative Tariff, Part XI, Subpart A, section 705.6(c).

[199] Illustrative Tariff, Part XI, Subpart A, section 706.4; *see supra* note 4.

[200] Illustrative Tariff, Part XI, Subpart A, section 706.4.

- Ancillary Services charges, except for Regulation, based on the net demand of the Co-Located Load in accordance with Part I, section 3;[201]
- Black Start Service charges based on the gross demand of the Co-Located Load in accordance with Tariff, Schedule 6A;[202] and
- any redispatch costs as set forth in Tariff, Attachment K.[203]

These are standard charges associated with the use of the Transmission System over and above the transmission service rates.

Further, as with all settlements in PJM, PJMSettlement will be the Counterparty to the Firm Contract Demand Transmission Service and Non-Firm Contract Demand Transmission Service transactions under this Tariff.[204]

G. Operating Agreement

PJM requires that the Eligible Customer plan, construct, operate, and maintain its facilities in conformance with the Operating Agreement. Additionally, the terms and conditions under which the Eligible Customer will operate its facilities will be detailed in the Operating Agreement.[205] Consistent with PJM's requirements for NITS and the Commission's *pro forma* Open Access Transmission Tariff,[206] PJM requires that the Eligible Customer taking Interim NITS to plan, construct, operate, and maintain its facilities in conformance with the Operating Agreement.[207] Additionally, the terms and

[201] Illustrative Tariff, Part XI, Subpart A, section 706.4.

[202] Illustrative Tariff, Part XI, Subpart A, section 706.4.

[203] Illustrative Tariff, Part XI, Subpart A, section 706.2.

[204] Illustrative Tariff, Part XI, Subpart A, section 700; *id.*, Attachment F-3A, section 1.0.

[205] Illustrative Tariff, Part XI, Subpart A, section 707.1

[206] *Pro Forma* Open Access Transmission Tariff, section 35.1.

[207] *See* illustrative Tariff, Part XI, Subpart A, section 707.1. The Commission's *pro forma* Open Access Transmission Tariff uses the term "Network Operating Agreement." In PJM, the "Operating Agreement of the PJM Interconnection, L.L.C., as amended from time to time, shall constitute the Network Operating Agreement." Tariff, Attachment G.

conditions under which the Eligible Customer will operate its facilities will be detailed in the Operating Agreement.[208]

H. Pro Forma *Service Agreement Specific to Eligible Customers Serving Co-Located Load Via NITS or Interim NITS*

To facilitate the automatic transition from Interim NITS to NITS and to best administer the terms and conditions specific to serving Co-Located Loads, PJM has developed a single Service Agreement specific to Eligible Customers serving Co-Located Loads via Interim NITS or NITS. PJM's illustrative Service Agreement for NITS and Interim NITS is included in Attachment A to this initial brief and has been designated as Attachment F-3A.[209] In addition to the NITS terms carried over from the *pro forma* NITS Service Agreement (Attachment F-3), PJM has added terms specific to Co-Located Load arrangements, including, for example, a description of Co-Located Generating Facility and its Maximum Facility Output, and a description of Co-Located Load and its gross demand.[210]

The Service Agreement provides the optionality of applying to full NITS only, or both full NITS and Interim NITS.[211] The Eligible Customer is also required to submit a single-line diagram as a part of Attachment F-3A to show the Delivery Point between the Co-Located Load and Co-Located Generating Facility.

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[208] Illustrative Tariff, Part XI, Subpart A, section 707.1.

[209] Illustrative Tariff, Attachment F-3A. The existing *pro forma* NITS Service Agreement is located at Tariff, Attachment F-3.

[210] Illustrative Tariff, Attachment F-3A.

[211] Illustrative Tariff, Attachment F-3A, section 2.0.

IV. OTHER ILLUSTRATIVE TARIFF REVISIONS

Other than the new illustrative Tariff, Part XI discussed above, PJM also provides illustrative Tariff revisions to other parts of its Tariff, including Part I (Definitions), Part III (Network Integration Transmission Service), and the *pro forma* GIA. Because these revisions relate to the terms and conditions of transmission service for Co-Located Load, PJM has included them in the illustrative Tariff in Attachment A to this initial brief, rather than in the compliance filing being submitted concurrently with this initial brief.

First, PJM provides illustrative Tariff language to the definition of "Curtailment" in Part I, which refers to the specific Curtailment procedures provided in the new Tariff, Part XI applicable to Interim NITS or Non-Firm Contract Demand Transmission Service.[212] This definitional change distinguishes between ordinary Curtailment procedures and the ones that are specific to the new transmission services available to Co-Located Load arrangements.

Second, PJM includes a definition of "Remedial Action Scheme" in the illustrative language, which simply refers to the NERC Glossary of Terms.[213]

Third, PJM includes an additional set of Application Procedures for Eligible Customers taking service on behalf of Co-Located Load seeking NITS in Part III.[214] This information is necessary for PJM to perform the relevant studies and analyses needed to

[212] Illustrative Tariff, Part I (Definitions), Definitions – C – D.

[213] Illustrative Tariff, Part I (Definitions), Definitions – R. Other Regional Transmission Organizations and Independent System Operators have implemented RAS consistent with the NERC standards. *See, e.g.*, *Cal. Indep. Sys. Operator Corp.*, 180 FERC ¶ 61,143, at PP 16, 40 (2022); *Midcontinent Indep. Sys. Operator, Inc.*, 177 FERC ¶ 61,233, at P 4 n.8 (2021) ("MISO notes that the RAS was adopted pursuant to North American Electric Reliability Corporation standard PRC-012-1.").

[214] Illustrative Tariff, Part III (Network Integration Transmission Service), section 29.2(x).

provide NITS for Eligible Customers taking transmission service on behalf of Co-Located Load.

Finally, PJM includes additional operational procedures and data exchange requirements for a Co-Located Generating Facility associated with Co-Located Load,[215] in compliance with the Show Cause Order.[216] As described in the Transmittal Letter,[217] PJM is proposing in that filing a new Schedule O which will include required information for a Project Developer who intends to use its Generating Facility to serve Co-Located Load through the new Tariff, Part XI. In Attachment A, the text that is marked in grey has been proposed by PJM in the Transmittal Letter. However, the text that is marked in redline below the grey text includes additional illustrative Tariff language on operational procedures and data exchange requirements that PJM believes are necessary for a Project Developer who intends to use its Generating Facility to serve Co-Located Load.[218] This includes:

- Reference to, and incorporation of, operational or administrative requirements necessary for the Co-Located Generating Facility based on fuel type;
- Requirements relating to the revenue meter and necessary control technologies and protection systems; and
- Requirements relating to communication about failure or malfunction of any equipment relating to such technologies and systems.[219]

[215] Illustrative Tariff, Schedule O, *pro forma* GIA.

[216] Show Cause Order at P 188.

[217] PJM Transmittal Letter at 34-35.

[218] Illustrative Tariff, Schedule O, *pro forma* GIA.

[219] Illustrative Tariff, Schedule O, *pro forma* GIA.

As discussed further in the following Section of the initial brief, PJM reserves its rights to supplement Schedule O to include additional operational procedures or data exchange requirements.

V. RESERVATION OF RIGHTS TO SUPPLEMENT FILING

As discussed throughout this brief and shown in the illustrative Tariff provisions, the addition of three new transmission services, and revisions to the NITS to accommodate Eligible Customers serving Co-Located Load, requires complex revisions to PJM's transmission planning, interconnection, and operational procedures. Indeed, the illustrative provisions represent most, but not all, of the potential tariff language and revisions that would be necessary to implement these new services from a planning, interconnection, and operational perspective.

However, further work is required to fully integrate these new services into PJM, including into PJM's energy, ancillary services, and capacity markets. PJM continues to review its Governing Documents to determine the additional revisions necessary to properly account for these new services. For example, PJM anticipates that it will likely need to revise its existing Tariff provisions addressing Real-time and Day-ahead Energy Market settlements to account for the new transmission services—i.e., Firm and Non-Firm Contract Demand Transmission Service and Interim NITS, particularly given that such provisions often determine charges based on Network Load, and load served by Firm and Non-Firm Contract Demand Transmission Service cannot be Network Load.[220] As another example, PJM may need to revise existing Tariff provisions to address the applicability to Auction Revenue Rights and Financial Transmission Rights to Eligible Customers serving

[220] *See* Show Cause Order at P 205.

load with Contract Demand Transmission Service. PJM will continue to review its Governing Documents and reserves the right to supplement its filing with additional terms and conditions needed to effectuate these new transmission services to allow the paper hearing the benefit of such additional information.

VI. IMPLEMENTATION AND EFFECTIVE DATE

As explained by Mr. Horger, PJM believes an effective date of June 1, 2029, is necessary for the three new transmission services—Interim NITS, Non-Firm Contract Demand Transmission Service, and Firm Contract Demand Transmission Service.[221] Mr. Horger explains that June 1, 2029, is a reasonable and appropriate effective date for these new transmission services because of the time required to: (1) integrate these transmission services into PJM's capacity market, the Reliability Pricing Model ("RPM"), so that PJM can procure capacity for those that are capacity-backed (e.g., Firm Contract Demand Transmission Service); and (2) make the necessary modifications to the PJM core Markets and Operations systems. Regardless, it is unlikely that generation intended to serve Co-Located Load will be constructed and operational before June 1, 2029.

First, Mr. Horger explains that the three new transmission services that will be available to Eligible Customers seeking to take transmission service on behalf of a Co-Located Load will significantly affect the PJM Load Forecast and expected demand, which will, in turn, have significant implications for the RPM, a three-year forward market.[222] Given current tight conditions, it is of utmost importance that Eligible

[221] PJM notes that NITS is already a service that is available to Eligible Customers electing to take NITS on behalf of Co-Located Load.

[222] Horger Aff. ¶ 11 (Although the next few RPM Base Residual Auctions ("BRAs") will be operating on a compressed auction schedule, "PJM has been on track to return to a normal three-year forward auction for its capacity market by May 2027 (for the 2030/2031 Delivery Year).").

Customers' expected demand be reflected in the RPM to ensure that PJM procures needed capacity.

As a forward market, the RPM relies on PJM Load Forecasts to ensure that the RPM auctions procure sufficient capacity for future Delivery Years based on expected demand. Each Delivery Year begins on June 1. The RPM BRA for the 2027/2028 Delivery Year, for the Delivery Year beginning June 1, 2027, took place in December 2025. While the BRA for the 2028/2029 Delivery Year, for the Delivery Year beginning June 1, 2028, has not yet taken place, "as of today, the PJM Load Forecast for the 2028/2029 Delivery Year BRA is already determined, and eligible capacity has already been determined for the 2028/2029 Delivery Year BRA."[223] As a result, "it is no longer possible to update the PJM Load Forecast, update the RPM auction input parameters (planning parameters), and implement necessary changes before the 2028/2029 RPM BRA is conducted, even if the Commission were to theoretically approve the proposed changes today."[224] The BRA for the 2029/2030 Delivery Year, starting June 1, 2029, is the first BRA in which the effects of these transmission services for Eligible Customers can be considered (including procuring necessary capacity for firm transmission services).

Inclusion of these transmission services for Eligible Customers taking transmission on behalf of Co-Located Load in Incremental Auctions, i.e., in the intervening period between the BRAs, would likewise be inappropriate. As Mr. Horger testifies, "Incremental Auctions are conducted to allow for *replacement* resource procurement, along with increases and decreases in resource commitments due to reliability requirement

[223] Horger Aff. ¶ 12.

[224] Horger Aff. ¶ 13.

adjustments. These adjustments are typically small."[225] Thus, due to the interaction between the impact that Eligible Customers' load will have on underlying Load Forecasts and expected demand, which in turn will significantly impact the RPM, PJM is proposing a June 1, 2029 implementation date for the three new transmission services applicable to Eligible Customers seeking service on behalf of Co-Located Load.

Second, Mr. Horger testifies that the addition of the three new transmission services will require significant changes to PJM's core Markets and Operations systems.[226] Changes to these systems will necessarily be dependent on vendor availability, the speed with which the system changes can be designed, and the interaction of these requested changes with other competing priorities, including system changes to implement other Commission-directed initiatives.[227] In particular, PJM anticipates that, implementing the proposed Curtailment priorities applicable to Interim NITS and Non-Firm Contract Demand Transmission Service, which can affect prices and dispatch instructions, will require PJM to work with vendors to develop system automation that will avoid non-optimal, untimely, and inefficient outcomes. Because the transmission services proposed herein are novel and subject to a paper hearing, efficient use of vendors to develop the requisite system updates, including software changes, cannot commence until the specific rates, terms, and conditions of these transmission services are correspondingly finalized.[228]

[225] Horger Aff. ¶ 15.

[226] Horger Aff. ¶ 16.

[227] Horger Aff. ¶ 16.

[228] Horger Aff. ¶ 16.

Furthermore, PJM does not expect that Eligible Customers and associated generation will be online and taking service under any of the proposed transmission services before June 1, 2029. In other words, the implementation and effective date will not be a limiting factor. Rather, the process of an Eligible Customer's generation getting through the interconnection queue, being constructed, and becoming operational will likely take more than three years, particularly in light of current supply chain issues, Transmission Owner and PJM queue requirements, and RPM auction timelines.[229] There is a known challenge to procure equipment, such as turbines,[230] and it is not currently expected that a generator could be physically built in less than three years. The earliest expected Delivery Year a new generator can participate in an RPM BRA or an existing capacity resource can delist, which includes required interconnection modified studies, is for the 2029/2030 Delivery Year. Thus, for the foregoing reasons, a June 1, 2029 implementation and effective date for the three new transmission services is just and reasonable.

VII. DOCUMENTS ENCLOSED

In addition to this initial brief, PJM encloses the following:

1. Attachment A: Illustrative Language for New Tariff, Part XI; Attachments F-3A and F-4; and Other Illustrative Tariff Revisions;

2. Attachment B: Affidavit of Dr. Sami Abdulsalam, Director of Transmission Planning;

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[229] Notably, however, as the Commission recently reiterated, for purposes of the RPM, "Capacity prices are intended to send longer-term investment signals to which developers respond over time[]" and "delays in the interconnection queue, compressed auction schedules, and supply chain issues" do not render RPM auction results unjust and unreasonable. *PJM Interconnection, L.L.C.*, 194 FERC ¶ 61,049, at P 50 (2025) (citing *PJM Interconnection, L.L.C.*, 126 FERC ¶ 61,275, at P 150 (2009) ("RPM was designed to provide long-term forward price signals . . . .")).

[230] Jared Anderson, *US gas-fired turbine wait times as much as seven years; costs up sharply*, S&P Global (May 20, 2025), https://www.spglobal.com/energy/en/news-research/latest-news/electric-power/052025-us-gas-fired-turbine-wait-times-as-much-as-seven-years-costs-up-sharply.

3. Attachment C: Affidavit of Matthew Wharton, Manager, Reliability Engineering; and

4. Attachment D: Affidavit of Timothy Horger, Senior Director, Forward Market Operations.

VIII. CONCLUSION

PJM respectfully requests that the Commission find that the illustrative Tariff revisions included in Attachment A are part of a just and reasonable replacement rate in accordance with the requirements of the Show Cause Order.

Respectfully submitted,

/s/ Ryan J. Collins

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Attachment A

Illustrative Language for New Tariff, Part XI; Attachments F-3A and F-4; and Other Illustrative Tariff Revisions

Tariff, Part XI

Transmission Services Available for Eligible Customers Taking Service on Behalf of Co-Located Loads

Subpart A – Interim Network Integration Transmission Service

700 Provision of Interim Network Integration Transmission Service

The Transmission Provider may provide Interim Network Integration Transmission Service to an Eligible Customer requesting Network Integration Transmission Service on behalf of a Co-Located Load pursuant to the applicable terms and conditions contained in the Tariff and the Service Agreement for Interim Network Integration Transmission Service, which is provided in Attachment F-3A. PJMSettlement shall be the Counterparty to the Interim Network Integration Transmission Service transactions under this Tariff.

Requests for Interim Network Integration Transmission Service must be made through the Transmission Provider. These requests shall require the filing of an Application as set forth in Tariff, Part XI, Subpart A, section 702 and be submitted in accordance with the applicable terms and conditions in the Tariff.

701 Nature of Interim Network Integration Transmission Service

701.1 Scope of Service

Interim Network Integration Transmission Service is a transmission service that allows an Eligible Customer taking service on behalf of a Co-Located Load that has requested Network Integration Transmission Service pursuant to Tariff, Part III, to receive transmission service on behalf of a Co-Located Load on a non-firm, interruptible basis for the period until the transmission upgrades required to provide the requested level of Network Integration Transmission Service are completed and placed in service. Such upgrades required to provide the requested level of Network Integration Transmission Service, along with the expected in-service dates, shall be set forth in the Service Agreement for Interim Network Integration Transmission Service.

Once the required transmission upgrades are completed and placed in service, according to the terms of the Service Agreement for Interim Network Integration Transmission Service in Attachment F-3A, the transmission service provided to the Eligible Customer will automatically convert from Interim Network Integration Transmission Service to Network Integration Transmission Service. As a result, the Co-Located Load will be designated as Network Load under Tariff, Part III, section 31.1.

An Eligible Customer taking transmission service on behalf of a Co-Located Load may not take Network Integration Transmission Service or Interim Network Integration Transmission Service for that Co-Located Load at the same time it is taking Firm Contract Demand Transmission Service or Non-Firm Contract Demand Transmission Service on behalf of that Co-Located Load.

The Eligible Customer taking Interim Network Integration Transmission Service must obtain or provide Ancillary Services pursuant to Tariff, Part I, section 3.

701.2 Interim Network Integration Transmission Service

The Transmission Provider may provide non-firm, interruptible transmission service over the Transmission System to the Eligible Customer for the delivery of capacity and energy to serve the Co-Located Load.

701.3 Restrictions on Use of Service

The Eligible Customer shall not use Interim Network Integration Transmission Service for (i) sales of capacity and energy to loads other than the Co-Located Load designated in its Service Agreement for Interim Network Integration Transmission Service, or (ii) direct or indirect provision of transmission service by the Eligible Customer to third parties.

701.4 Termination of Interim Network Integration Transmission Service

The provision of Interim Network Integration Transmission Service shall terminate upon completion of all upgrades identified in the Service Agreement for Interim Network Integration Transmission Service necessary to provide Eligible Customer with Network Integration Transmission Service under Tariff, Part III, according to the terms of the Service Agreement.

702 Initiating Service

702.1 Conditions Precedent for Receiving Service

Subject to the terms and conditions of Tariff, Part XI, the Transmission Provider may provide Interim Network Integration Transmission Service to any Eligible Customer taking transmission service on behalf of Co-Located Load, provided that:

(i) The Eligible Customer has been designated to take transmission service on behalf of a Co-Located Load in the relevant Application, Service Agreement, or the Generation Interconnection Agreement for the Co-Located Generating Facility;

(ii) The Eligible Customer has provided the information specified in, and otherwise complied with, the "PJM Credit Policy" set forth in Tariff, Attachment Q hereto;

(iii) The Eligible Customer executes a Service Agreement for Interim Network Integration Transmission Service with the Transmission Provider pursuant to Tariff, Attachment F-3A, or requests in writing that the Transmission Provider file a proposed unexecuted Service Agreement for Interim Network Integration Transmission Service;

(iv) The Eligible Customer has certified, in accordance with the PJM Manuals, that it is willing and able to limit energy withdrawals from the Transmission System when requested by the Transmission Provider; and

(v) An Eligible Customer requesting Interim Network Integration Transmission Service and taking Interim Network Integration Transmission Service shall otherwise execute, if necessary, and comply with the PJM Governing Agreements.

The Eligible Customer shall submit an Application under this section 702.

702.2 Application Procedures

An Eligible Customer seeking Network Integration Transmission Service may apply for Network Integration Transmission Service and Interim Network Integration Transmission Service at the same time. However, an Eligible Customer shall not apply for Interim Network Integration Service without applying for Network Integration Transmission Service.

To apply for Interim Network Integration Transmission Service, an Eligible Customer must pay a study fee under Tariff, Part XI, Subpart A, section 704.2, which is in addition to the study fee required under an Application for Network Integration Transmission Service under Tariff, Part III, section 32.2.

702.3 Determination of Whether Interim Network Integration Transmission Service Can Be Reliably Provided

The Transmission Provider, in consultation with the affected Transmission Owner(s), will determine the amount of Interim Network Integration Transmission Service that can be provided to an Eligible Customer, including through the use of temporary solutions, while maintaining the reliability of the Transmission System. This determination will consider the results of the study procedures set forth in Tariff, Part XI, Subpart A, section 704.

702.4 Technical Requirements Prior to Commencement of Service

Interim Network Integration Transmission Service shall not commence until the Transmission Provider, the affected Transmission Owner(s), and the Eligible Customer, or a third party, have completed installation of all equipment specified under the Service Agreement for Interim Network Integration Transmission Service, consistent with Good Utility Practice and any additional requirements reasonably and consistently imposed to ensure the reliable operation of the Transmission System. The Transmission Provider and the affected Transmission Owner(s) shall exercise reasonable efforts, in coordination with the Eligible Customer, to complete such arrangements as soon as practicable taking into consideration the Service Commencement Date.

These technical requirements include, but are not limited to: (i) installation of necessary hardware and software to limit energy withdrawals, including metering equipment; (ii) provision of an operational contact and backup contact for the Eligible Customer, available twenty-four (24) hours a day and seven (7) days a week; (iii) certification from the Eligible Customer that it is staffed with PJM Certified Operators pursuant to PJM Manual 40; (iv) demonstration from the Eligible Customer of its ability to receive voice and electronic signals from the Transmission Provider; (v) demonstration that the Eligible Customer has operational control to respond to operating instructions from the Transmission Provider to reduce or disconnect the Co-Located Load within five (5) minutes or as specified in PJM Manuals; and (vi) demonstration that the Eligible Customer has operational control of the necessary control technologies and protection systems set forth in Tariff, Part XI, Subpart A, section 705, as applicable.

702.5 Eligible Customer Facilities

The provision of Interim Network Integration Transmission Service shall be conditioned upon the Eligible Customer constructing, maintaining, and operating the facilities on its side of the Delivery Point necessary to reliably deliver capacity and energy from the Transmission Provider's Transmission System to the Eligible Customer or, with respect to service provided pursuant to a

state required retail access program, for otherwise arranging for the delivery of its energy from the Delivery Point or interconnection. The Eligible Customer shall be solely responsible for constructing or installing all facilities on the Eligible Customer's side of such Delivery Point or, with respect to service provided pursuant to a state required retail access program, for otherwise arranging for the delivery of its energy from the Delivery Point or interconnection.

702.6 Filing of Service Agreement

The Transmission Provider will file the Service Agreement for Interim Network Integration Transmission Service, provided in Attachment F-3A, with the Commission in compliance with applicable Commission regulations.

703 Designation of Co-Located Load

703.1 Co-Located Load

The Eligible Customer must designate the individual Co-Located Load on whose behalf the Transmission Provider will provide Interim Network Integration Transmission Service.

The Co-Located Load shall be specified in the Service Agreement for Interim Network Integration Transmission Service except with respect to loads served pursuant to state required retail access programs for which the Transmission Customer shall provide information regarding Network Loads using the Transmission Provider's specified electronic information system for such programs in accordance with the Service Agreement.

703.2 New Co-Located Loads Connected with the Transmission Provider

Prior to the Service Commencement Date of Network Integration Transmission Service, if an Eligible Customer designates a new Co-Located Load, or increases the size of the designated Co-Located Load, the new Co-Located Load shall be studied pursuant to a new Application.

703.3 Information Updates

The Eligible Customer shall provide the Transmission Provider with annual updates of (i) the demand characteristics of the Co-Located Load, and (ii) the supply characteristics of the Co-Located Generating Facility, both consistent with those included in its Application for Network Integration Transmission Service under Tariff, Part III, Section 31.6.

In addition, the Eligible Customer also shall have an ongoing obligation to provide the Transmission Provider with timely written or electronic notice of material changes in the foregoing sentence as well as any other information listed in Tariff, Part XI, Subpart A, section 702 or provided in its Application for Network Integration Transmission Service pursuant to Tariff, Part III, section 31.6 relating to the Eligible Customer's Co-Located Load or other aspects of its facilities or operations affecting the Transmission Provider's ability to provide reliable service. Failure to timely inform the Transmission Provider of a material change in (i) the demand characteristics of the Co-Located Load, or (ii) the supply characteristics of the Co-Located Generating Facility may constitute a breach of the Eligible Customer's Service Agreement.

704 Study Procedures for Interim Network Integration Transmission Service Requests

704.1 Notice of Need for Study

After receiving a request for Interim Network Integration Transmission Service, the Transmission Provider shall determine on a non-discriminatory basis whether additional studies are needed beyond what was required to evaluate the Eligible Customer's request for Network Integration Transmission Service.

If the Transmission Provider determines that additional studies are necessary to evaluate the requested service, it shall inform the Eligible Customer of those studies as soon as practicable. In such cases, the Transmission Provider shall, within thirty (30) days of receipt of a Completed Application, tender an Application and Studies Agreement pursuant to which the Eligible Customer shall agree to reimburse the Transmission Provider for the required studies. For a service request to remain a Completed Application, the Eligible Customer shall execute the Application and Studies Agreement and return it to the Transmission Provider within fifteen (15) days and provide a study fee pursuant to Tariff, Part XI, Subpart A, section 704.2. If the Eligible Customer elects not to execute the Application and Studies Agreement, its Application for Interim Network Integration Transmission Service shall be deemed withdrawn and its study fee shall be returned with interest.

704.2 Study Fee for Interim Network Integration Transmission Service

Eligible Customer shall pay a study fee, as determined by the Transmission Provider, to apply for Interim Network Integration Transmission Service.

705 Load Shedding and Curtailments

705.1 General

Prior to the Service Commencement Date, the Eligible Customer shall demonstrate its ability to fully comply with the Load Shedding and Curtailment procedures pursuant to this section 705, and the Service Agreement for Interim Network Integration Transmission Service. The Eligible Customer shall implement any Load Shedding and/or Curtailment directive given by Transmission Provider. To the extent practicable, the Transmission Provider will notify the Eligible Customer of any Curtailment in a timely manner. The Eligible Customer must respond to any real time instructions to curtail or otherwise reduce load within five (5) minutes. Curtailments will be made on a non-discriminatory basis. Any requests by the Transmission Provider to Curtail will be consistent with Good Utility Practice.

705.2 Curtailment of Interim Network Integration Transmission Service

Interim Network Integration Transmission Service shall be Curtailed before Firm Contract Demand Transmission Service and Network Integration Transmission Service. The Transmission Provider may curtail Interim Network Integration Transmission Service prior to dispatching the Pre-Emergency Load Response Program as further set forth in the PJM Manuals, or in response to a transfer capability shortage as a result of system reliability conditions.

705.3 Load Shedding

To the extent that a system contingency exists on the Transmission Provider's Transmission System and the Transmission Provider determines that it is necessary for the Transmission Owners and the Eligible Customer taking Interim Network Integration Transmission Service to shed load, the Eligible Customer and the Transmission Owners shall shed load in accordance with previously established procedures under the Service Agreement for Interim Network Integration Transmission Service and the PJM Manuals.

705.4 System Reliability

Notwithstanding any other provisions of this Tariff, the Transmission Provider reserves the right, consistent with Good Utility Practice and on a not unduly discriminatory basis, to Curtail Interim Network Integration Transmission Service without liability on the Transmission Provider's part for the purpose of making necessary adjustments to, changes in, or repairs on its lines, substations and facilities, and in cases where the continuance of Interim Network Integration Transmission Service would endanger persons or property. In the event of any adverse condition(s) or disturbance(s) on the Transmission Provider's Transmission System or on any other system(s) directly or indirectly interconnected with the Transmission Provider's Transmission System, the Transmission Provider, consistent with Good Utility Practice, also may Curtail Interim Network Integration Transmission Service in order to (i) limit the extent or damage of the adverse condition(s) or disturbance(s); (ii) prevent damage to generating or transmission facilities; or (iii) expedite restoration of service. The Transmission Provider will give the Eligible Customer as much advance notice as is practicable in the event of such Curtailment.

705.5 Necessary Control Technologies and Protection Systems

To ensure protection of the Transmission System, and to ensure that the Eligible Customer taking Interim Network Integration Transmission Service on behalf of a Co-Located Load limits its energy withdrawals from the Transmission System to its approved level of Interim Network Integration Transmission Service, including during a period in which the Transmission Provider has directed Curtailment or Load Shedding, prior to the Service Commencement Date, the Transmission Provider, affected Transmission Owner(s), and the Eligible Customer shall establish necessary control technologies and protection systems in accordance with the PJM Manuals, which may include a Remedial Action Scheme, for each Service Agreement for Interim Network Integration Transmission Service. The necessary control technologies and protection systems must be developed in accordance with the PJM Manuals and be approved by the Transmission Provider. The necessary control technologies and protection systems may be functionally modified from time to time in accordance with the PJM Manuals. Any functional modification to the necessary control technologies and protection systems must be developed with the affected Transmission Owner(s) and, before taking effect, such functional modification must be approved by the Transmission Provider.

705.6 Consequences of Failure to Follow Instructions or Misoperation of Necessary Control Technologies and Protection Systems

(a) In the first instance that an Eligible Customer fails to respond to established Load Shedding and Curtailment procedures, as set forth in this section 705, the Eligible Customer shall be disqualified from taking Interim Network Integration Transmission Service.

(b) In the first instance that a necessary control technology or protection system for a given Service Agreement misoperates, the Eligible Customer shall be prohibited from taking transmission service under its Service Agreement or otherwise withdrawing energy from the Transmission System for a period of up to one hundred and twenty (120) days from such event, which may be shortened or extended per mutual agreement, to allow for an analysis of the such event, which may be shortened or extended per mutual agreement, to allow for an analysis of the operational performance of the necessary control technologies and protection systems.

In the second instance that an Eligible Customer's necessary control technology or protection system associated with a Service Agreement misoperates, the Eligible Customer shall be disqualified from taking Interim Network Integration Transmission Service.

(c) Following disqualification in accordance with subsections (a) or (b) above, to receive transmission service on behalf of the subject Co-Located Load, the Eligible Customer may only take Network Integration Transmission Service and such service may only commence after all upgrades necessary for the Transmission Provider to provide Network Integration Transmission Service are placed into service.

705.7 Penalty for Unreserved Use of Interim Network Integration Transmission Service

[Reserved]

706 Rates and Charges

706.1 Monthly Demand Charge

[Reserved]

706.2 Redispatch Charge

The Eligible Customer and each Transmission Owner shall pay any redispatch costs as set forth in Tariff, Attachment K.

706.3 Stranded Cost Recovery

Any Transmission Owner may seek to recover stranded costs from the Eligible Customer pursuant to this Tariff in accordance with the terms, conditions and procedures set forth in FERC Order No. 888. However, the Transmission Owner must separately file any proposal to recover stranded costs under section 205 of the Federal Power Act.

706.4 Other Charges

Eligible Customer shall pay administrative services charges under Tariff, Schedule 1A; Tariff, Schedule 9; and Tariff, Schedule 10, consistent with the charges assessed to loads taking Network Integration Transmission Service.

Eligible Customer shall pay Ancillary Services charges in accordance with Tariff, Part I, section 3.

Eligible Customer shall pay Black Start Service charges in accordance with Tariff, Schedule 6A.

707 Operating Agreement

707.1 Operation under The Operating Agreement

The Eligible Customer shall plan, construct, operate, and maintain its facilities in accordance with Good Utility Practice and in conformance with the Operating Agreement.

The terms and conditions under which the Eligible Customer shall operate its facilities and the technical and operational matters associated with the implementation of Tariff, Part XI shall be specified in the Operating Agreement.

The Operating Agreement shall provide for the Eligible Customer and Transmission Provider to (i) operate and maintain equipment necessary for integrating the Eligible Customer within the Transmission Provider's Transmission System (including, but not limited to, remote terminal units, metering, communications equipment and relaying equipment); (ii) transfer data between the Transmission Provider and the Eligible Customer (including, but not limited to, heat rates and operational characteristics of Network Resources, generation schedules for units outside the Transmission Provider's Transmission System, interchange schedules, required unit outputs for redispatch, voltage schedules, loss factors and other real time data); (iii) use software programs required for data links and constraint dispatching; (iv) exchange data on forecasted loads and resources necessary for long-term planning; and (v) address any other technical and operational considerations required for implementation of Tariff, Part XI, including scheduling protocols.

Subpart B – Contract Demand Transmission Services

708 Provision of Contract Demand Transmission Services

(a) The Transmission Provider will provide Firm Contract Demand Transmission Service or Non-Firm Contract Demand Transmission Service, or both, to an Eligible Customer taking service on behalf of a Co-Located Load pursuant to the applicable terms and conditions contained in Tariff, Part XI and the Service Agreement for Contract Demand Transmission Services, provided in Attachment F-4. Firm Contract Demand Transmission Service or Non-Firm Contract Demand Transmission Service are for an Eligible Customer taking service on behalf of a Co-Located Load that is willing and able to limit withdrawals of energy from the Transmission System when required by the Transmission Provider.

(b) Firm Contract Demand Transmission Service is for the transfer of capacity and energy to an Eligible Customer on behalf of a designated Co-Located Load, up to a defined, predetermined megawatt level of transmission service as requested by the Eligible Customer and confirmed by the Transmission Provider, using capacity and energy procured by the Transmission Provider. Non-Firm Contract Demand Transmission Service is for the transmission of energy to an Eligible Customer on behalf of a designated Co-Located Load, on an as-available basis, up to a defined, predetermined megawatt level of transmission service as requested by the Eligible Customer and confirmed by the Transmission Provider, using energy procured by the Transmission Provider. PJMSettlement shall be the Counterparty to the Firm Contract Demand Transmission Service and Non-Firm Contract Demand Transmission Service transactions under this Tariff.

(c) Prior to the Commencement of Service, for an Eligible Customer to take Non-Firm Contract Demand Transmission Service on behalf of a Co-Located Load, the Eligible Customer must demonstrate the implementation of the necessary control technologies and protection systems, approved by the Transmission Provider to allow the Eligible Customer to effectively limit withdrawals from the Transmission System to serve such Co-Located Load.

(d) Requests for Firm Contract Demand Transmission Service or Non-Firm Contract Demand Transmission Service, or both, must be made through the Transmission Provider. These requests shall (i) require the filing of an Application as set forth in Tariff, Part XI, Subpart B, section 710.1 and Tariff, Part XI, Subpart B, section 710.2, and (ii) be submitted in accordance with the applicable terms and conditions in the Tariff.

709 Nature of Firm and Non-Firm Contract Demand Transmission Service

709.1 Priority of Service

Firm Contract Demand Transmission Service will always have priority over Non-Firm Contract Demand Transmission Service under the Tariff. All Firm Contract Demand Transmission Service will have equal priority with Network Integration Transmission Service.

709.2 Scope of Service

(a) Firm Contract Demand Transmission Service is a transmission service that allows an Eligible Customer taking service on behalf of a Co-Located Load to receive firm transmission service on behalf of that Co-Located Load up to a defined, predetermined megawatt level of service pursuant to the applicable terms and conditions contained in the Tariff and the Service Agreement for Contract Demand Transmission Service provided in Tariff, Attachment F-4. An Eligible Customer taking service on behalf of a Co-Located Load must apply for Firm Contract Demand Transmission Service for no less than the megawatt level of the gross demand of the Co-Located Load that will not be served by the dedicated level of energy from the Co-Located Generating Facility.

(b) Non-Firm Contract Demand Transmission Service is a transmission service that allows an Eligible Customer taking service on behalf of Co-Located Loads to obtain non-firm, interruptible transmission service on behalf of a Co-Located Load in the event the Co-Located Generating Facility is on outage and unable to provide any of the dedicated level of energy, and receive that service up to defined, predetermined megawatt level of service pursuant to the applicable terms and conditions contained in the Tariff and Service Agreement for Contract Demand Transmission Service, provided in Tariff Attachment F-4. An Eligible Customer taking service on behalf of a Co-Located Load must apply for Non-Firm Contract Demand Transmission Service equivalent to the megawatt level of the Co-Located Generating Facility dedicated to serving the Co-Located Load; provided however, that the level of service required under the foregoing may be reduced to the extent the amount of Firm Contract Demand Transmission Service contracted exceeds megawatt level of the gross demand of the Co-Located Load that will not be served by the dedicated level of energy from the Co-Located Generating Facility. An Eligible Customer with an effective Service Agreement will be eligible to obtain Non-Firm Contract Demand Transmission Service on a given Operating Day only to the extent the portion of the Co-Located Generating Facility dedicated to serving the Co-Located Load is on outage.

(c) The cumulative amount of Firm Contract Demand Transmission Service and Non-Firm Contract Demand Transmission Service requested by the Eligible Customer on behalf of the Co-Located Load must equal the entire gross demand of the Co-Located Load.

(d) For any given Co-Located Load, once an Eligible Customer has taken, or is applying for, Network Integration Transmission Service or Interim Network Integration Transmission Service on behalf of such Co-Located Load, an Eligible Customer shall not be eligible to apply for or take Firm Contract Demand Transmission Service or Non-Firm Contract Demand Transmission Service for that same Co-Located Load.

(e) After an Eligible Customer has submitted an Application for Contract Demand Transmission Service for a given Co-Located Load, any material change in the megawatt level of the gross-demand of the Co-Located Load or in the megawatt level of the Co-Located Generating Facility dedicated to the Co-Located Load would require a new Application.

709.3 Restrictions on Use of Service

The Eligible Customer shall not use Firm Contract Demand Transmission Service or Non-Firm Contract Demand Transmission Service for (i) sales of capacity and energy to loads other than the

Co-Located Load designated in its Service Agreement for Contract Demand Transmission Service, or (ii) direct or indirect provision of transmission service by the Eligible Customer to third parties.

709.4 Anti-Toggling Provision

To the extent permitted in accordance with section 709.2, for the portion of the Co-Located Load served by Firm Contract Demand Transmission Service, the Eligible Customer, or its successor, shall not seek Non-Firm Contract Demand Transmission Service for five (5) years following the effective date of the Service Agreement for Contract Demand Transmission Service.

However, the foregoing limitation in this subsection shall not apply in the event of (i) a physical change to the Co-Located Generating Facility that would materially and permanently alter the megawatt level dedicated to the Co-Located Load, or (ii) a physical change to the Co-Located Load that would materially and permanently alter the megawatt level of its gross demand.

710 Initiating Service

710.1 Conditions Precedent for Receiving Service

Subject to the terms and conditions of Tariff, Part XI, the Transmission Provider will provide Firm Contract Demand Transmission Service or Non-Firm Contract Demand Transmission Service, or both, to any Eligible Customer taking transmission service on behalf of Co-Located Load, provided that:

(i) The Eligible Customer has been designated to take transmission service on behalf of a Co-Located Load in the relevant Application, Service Agreement, or the Generation Interconnection Agreement for the Co-Located Generating Facility;

(ii) The subject Co-Located Load has not been served by any Eligible Customer on behalf of such Co-Located Load taking, or applying to take, Network Integration Transmission Service or Interim Network Integration Transmission Service;

(iii) The Eligible Customer has provided the information specified in, and otherwise complied with, the "PJM Credit Policy" set forth in Tariff, Attachment Q hereto;

(iv) The Eligible Customer has executed a Service Agreement for Contract Demand Transmission Service with the Transmission Provider pursuant to Tariff, Attachment F-4, or requests in writing that the Transmission Provider file a proposed unexecuted Service Agreement for Contract Demand Transmission Service; such Service Agreement shall include (a) for Non-Firm Contract Demand Transmission Service, the operational procedures necessary to implement necessary control technologies and protection systems approved by the Transmission Provider that will limit energy withdrawals consistent with the terms of the Service Agreement; and (b) its agreement to be curtailed under certain conditions set forth in the Service Agreement and in the PJM Tariff;

(v) The Eligible Customer has certified, in accordance with the PJM Manuals, that it is willing and able to limit energy withdrawals from the Transmission System when requested by the Transmission Provider;

(vi) The Eligible Customer must, in accordance with the PJM Manuals, submit to the Transmission Provider an authorization or certification from its Relevant Electric

Retail Regulatory Authority which affirms that the Eligible Customer is authorized to provide energy to the Co-Located Load; and

(vii) Eligible Customer has completed other certification requirements provided in the PJM Manuals, including to be an Electric Distributor, as applicable; and

(viii) The Eligible Customer taking Contract Demand Transmission Service on behalf of a Co-Located Load shall otherwise execute, if necessary, and comply with the PJM Governing Agreements.

710.2 Application Procedures

An Eligible Customer may apply for Firm Contract Demand Transmission Service or Non-Firm Contract Demand Transmission Service, or both, to take service on behalf of a Co-Located Load. The entire gross demand of the Co-Located Load must be served by a combination of Firm Contract Demand Transmission Service and Non-Firm Contract Demand Transmission Service.

To the extent the dedicated portion of the Co-Located Generating Facility does not meet the entire gross demand of the Co-Located Load, an Eligible Customer seeking Contract Demand Transmission Service must apply for: (i) Firm Contract Demand Transmission Service for at least the portion of the gross demand of the Co-Located Load not served by dedicated output from the Co-Located Generating Facility; and (ii) Non-Firm Contract Demand Transmission Service for the portion of the gross demand of the Co-Located Load served by dedicated output from the Co-Located Generating Facility; provided however, that the level of Non-Firm Contract Demand Transmission Service required may be reduced to the extent the amount of Firm Contract Demand Transmission Service contracted exceeds megawatt level of the gross demand of the Co-Located Load that will not be served by the dedicated level of energy from the Co-Located Generating Facility.

If requested by the Transmission Provider, an Application for Firm Contract Demand Transmission Service and/or Non-Firm Contract Demand Transmission Service shall provide all of the information included in 18 C.F.R. § 2.20, including but not limited to the following:

(i) The identity, address, email address, and telephone number of the entity requesting service;

(ii) A statement that the entity requesting service is, or will be upon Commencement of Service, an Eligible Customer under the Tariff;

(iii) A demonstration that the Co-Located Load on behalf of which the Eligible Customer is seeking to obtain service and the Co-Located Generating Facility are located on the same side of the Delivery Point to the Transmission Provider's Transmission System as the Co-Located Load;

(iv) A description of the supply characteristics of the Co-Located Generating Facility identified in subsection (iii) above, including the generation profile, its Maximum Facility Output, the megawatt level dedicated to serving the Co-Located Load, and other technical specifications as may be requested by the Transmission Provider;

(v) A description of the demand characteristics of the Co-Located Load identified in subsection (iii) above, including the demand profile and other technical specifications as may be requested by the Transmission Provider;

(vi) The requested Service Commencement Date;

(vii) The transmission capacity requested for the Delivery Point on the Transmission Provider's Transmission System behind which the Co-Located Load and Co-Located Generating Facility are located; and

(viii) Any additional information required by the Transmission Provider.

The Transmission Provider shall treat this information consistent with the standards of conduct contained in Part 37 of the Commission's regulations.

If an Application fails to meet the requirements of the Tariff, the Transmission Provider shall notify the Eligible Customer requesting service within fifteen (15) days of receipt of the reasons for such failure. The Transmission Provider will attempt to remedy minor deficiencies in the Application through informal communications with the Eligible Customer. If such efforts are unsuccessful, the Transmission Provider shall return the Application, along with any deposit, with interest. Upon receipt of a new or revised Application that fully complies with the requirements of this section 710, the Eligible Customer shall be assigned a new queued time and/or Project Identifier, as applicable, consistent with the date of the new or revised Application.

710.3 Determination of Whether Firm Contract Demand Transmission Service and Non-Firm Contract Demand Transmission Service Can Be Reliably Provided

Pursuant to Tariff, Part XI, Subpart B, section 712, Transmission Provider will coordinate with the affected Transmission Owner(s) to complete studies, including load integration studies, which will provide data relevant to the determination of whether (and to what level as applicable) (i) Firm Contract Demand Transmission Service can be reliably provided and identify any necessary enhancements to the Transmission System to accommodate the requested level of service, and/or (ii) Non-Firm Contract Demand Transmission Services can be reliably provided. During this study period, Transmission Provider may also perform other studies.

Following completion of all studies, Transmission Provider will make the determination, in consultation with the affected PJM Transmission Owner(s), about whether (and to what level as applicable) Firm Contract Demand Transmission Service or Non-Firm Contract Demand Transmission Services can be reliably provided for an Application, and if so, what level of service may be provided.

If the Transmission Provider determines that only a portion of the Non-Firm Contract Demand Transmission Service requested by Eligible Customer can be provided reliably, the Transmission Provider will provide a written explanation of its reasons for partial denial of service. In such an event, the Eligible Customer must apply for either (i) Firm Contract Demand Transmission Service for the balance of the gross demand of its Co-Located Load, consistent with Tariff, Part XI, Subpart B, section 709.2, or (ii) Network Integration Transmission Service under Tariff, Part III.

If the Transmission Provider determines that no level of Non-Firm Contract Demand Transmission Service requested by Eligible Customer can be provided reliably, the Transmission Provider will provide a written explanation of its reasons for denial of service. In such an event, to receive Contract Demand Transmission Service, the Eligible Customer must apply for either (i) Firm Contract Demand Transmission Service for the entire gross demand of its Co-Located Load,

consistent with Tariff, Part XI, Subpart B, section 709.2, or (ii) Network Integration Transmission Service under Tariff, Part III.

Descriptions of the Transmission Provider's and/or the applicable Transmission Owner(s)' specific methodology for assessing whether Firm Contract Demand Transmission Service or Non-Firm Contract Demand Transmission Service, or both, can be reliably provided, will be set forth in Tariff, Part XI, Subpart B, section 712, in the PJM Manuals, and in Transmission Owner standards, as applicable.

710.4 Technical Requirements Prior to Commencement of Service

Firm Contract Demand Transmission Service and Non-Firm Contract Demand Transmission Service shall not commence until the Transmission Provider, the affected Transmission Owner(s), and the Eligible Customer, or a third party, have completed installation of all equipment specified under the Service Agreement for Contract Demand Transmission Service, as provided in Attachment F-4, consistent with Good Utility Practice and any additional requirements reasonably and consistently imposed to ensure the reliable operation of the Transmission System. The Transmission Provider and the affected Transmission Owner(s) are to complete such arrangements as soon as practicable taking into consideration the Service Commencement Date.

As applicable, these technical requirements may include, but are not limited to: (i) installation of necessary hardware and software to limit energy withdrawals, including metering equipment and any facilities necessary to implement the necessary control technologies and protection systems associated with the provisions of Non-Firm Contract Demand Transmission Service set forth in the Service Agreement for Contract Demand Transmission Service; (ii) provision of an operational contact and backup contact for the Eligible Customer, available twenty-four (24) hours a day and seven (7) days a week; (iii) certification from the Eligible Customer that it is staffed with PJM Certified Operators (PJM Manual 40); (iv) demonstration from the Eligible Customer of its ability to receive voice and electronic signals from the Transmission Provider; (v) demonstration that the Eligible Customer has operational control to respond to operating instructions from the Transmission Provider to reduce energy withdrawals or disconnect the Co-Located Load; and (vi) as applicable, demonstration that the Eligible Customer has operational control of the necessary control technologies and protection systems required pursuant to Tariff, Part XI, Subpart B, section 713 and set forth in the Service Agreement for Contract Demand Transmission Service.

710.5 Eligible Customer Facilities and Network Facilities

The provision of Firm Contract Demand Transmission Service or Non-Firm Contract Demand Transmission Service, or both, shall be conditioned upon the Eligible Customer constructing, maintaining, and operating the facilities (i) on its side of the Delivery Point necessary to reliably deliver and receive energy and capacity; and (ii) only in the case of Non-Firm Contract Demand Transmission Service, to implement the necessary control technologies and protection systems required pursuant to Tariff, Part XI, Subpart B, section 713 and specified in the Service Agreement for Contract Demand Transmission Service, as Transmission Provider may require.

As set forth in the Service Agreement for Contract Demand Transmission Service, the Eligible Customer may also be responsible for the cost of network upgrades from the Transmission Provider's Transmission System to the Delivery Point. In the case of Firm Contract Demand

Transmission Service, the Transmission Provider shall be responsible for ensuring the Transmission System can deliver and receive energy and capacity to the Delivery Point.

The Eligible Customer shall be solely responsible for constructing or installing all facilities on the Eligible Customer's side of each such Delivery Point or, with respect to service provided pursuant to a state required retail access program, for otherwise arranging for the delivery of its energy from the Delivery Point.

710.6 Execution and Filing of Service Agreement

The Transmission Provider will file the Service Agreement for Contract Demand Transmission Service, as set forth in Attachment F-4, with the Commission in compliance with applicable Commission regulations, and subject to the provisions below.

(a) Transmission Provider shall provide the final Service Agreement for Contract Demand Transmission Service, along with any applicable schedules, to the parties in electronic form. Not later than fifteen (15) Business Days after receipt of the Service Agreement for Contract Demand Transmission Service, Eligible Customer shall:

(i) execute the final Service Agreement for Contract Demand Transmission Service in electronic form and return it to Transmission Provider electronically;
(ii) request in writing dispute resolution as allowed under Tariff, Part I, section 12; or
(iii) request in writing that Transmission Provider file with the Commission the final Service Agreement for Contract Demand Transmission Service in unexecuted form. The unexecuted Service Agreement for Contract Demand Transmission Service shall contain terms and conditions deemed appropriate by Transmission Provider for the Application.

As needed for Firm Contract Demand Transmission Service, the Eligible Customer shall also provide any required adjustments to Security for facility upgrades.

(b) If the Eligible Customer determines that final agreement negotiations are at an impasse, the Eligible Customer shall notify Transmission Provider of the impasse, and Eligible Customer may request Transmission Provider to file the unexecuted agreement with FERC or request in writing dispute resolution as allowed under Tariff, Part I, section 12. If Transmission Provider, in its sole discretion, determines that the negotiations are at an impasse, Transmission Provider shall notify the Eligible Customer of the impasse, and may file the unexecuted agreement with the FERC.

(c) Eligible Customer and Transmission Provider may not proceed under such Service Agreement for Contract Demand Transmission Service until:

(i) thirty (30) days after such agreement, if executed and nonconforming, has been filed with FERC;
(ii) such agreement, if unexecuted, has been filed with and accepted by FERC; or

(iii) the earlier of thirty (30) days after such agreement, if conforming, has been executed or has been reported in Transmission Provider's Electronic Quarterly Reports.

710.7 Termination

Although the Service Agreement for Contract Demand Transmission Service is presumed to continue without expiration, it may be terminated where:

(a) An incumbent Eligible Customer will be replaced by a successor Eligible Customer, in which case the incumbent's service shall only terminate if the successor agrees to commence the taking of the service, the appropriate service agreement is executed, and all other applicable terms and conditions of the Tariff and PJM Governing Agreements are satisfied;

(b) An incumbent Eligible Customer seeks to terminate its service and no successor Eligible Customer exists, in which case the incumbent must provide PJM with forty-two (42) months' notice prior to the commencement of a Delivery Year in which Eligible Customer seeks the termination, subject to receiving all necessary regulatory approvals for such termination, if any;

(c) An Eligible Customer is disqualified from receiving Contract Demand Transmission Service under Tariff, Part XI, Subpart B, section 713.7;

(d) The Eligible Customer is in breach of its obligations under the Service Agreement or the Tariff, Part XI. For example, to the extent any material changes to the gross demand of the Co-Located Load or the design, configuration, or output of the Co-Located Generating Facility occur without being studied by the Transmission Provider to determine whether such changes would affect the Transmission Provider's ability to reliably provide the level of service specified in the Eligible Customer's Contract Demand Transmission Service Agreement, the Eligible Customer may be considered in breach of its obligations and the agreement may be subject to termination in accordance with the provisions of this Tariff and/or the Service Agreement for Contract Demand Transmission Service; or

(e) On such other date as mutually agreed upon by the parties.

711 Designation of Co-Located Load and Co-Located Generating Facility

711.1 Required Designations

(a) The Eligible Customer must designate the individual Co-Located Load on behalf of which it is taking Firm Contract Demand Transmission Service, or Non-Firm Contract Demand Transmission Service, or both. The Co-Located Load shall be specified in the Service Agreement for Contract Demand Transmission Service, provided in Attachment F-4.

(b) The Eligible Customer must designate the individual Co-Located Generating Facility that will serve the individual Co-Located Load in subsection (a) and provide the megawatt level of energy from the Co-Located Generating Facility dedicated to serving the Co-Located Load.

711.2 No Change in Delivery Point

No change in the Delivery Point for any Firm Contract Demand Transmission Service or Non-Firm Contract Demand Transmission Service shall be permitted.

711.3 Information Updates

The Eligible Customer shall provide the Transmission Provider with annual updates of (i) the demand characteristics of the Co-Located Load, and (ii) the supply characteristics of the designated Co-Located Generating Facility, both consistent with the information included in its Application for Contract Demand Transmission Service under Tariff, Part XI.

In addition, the Eligible Customer also shall have an ongoing obligation to provide the Transmission Provider with timely written or electronic notice of material changes in the foregoing sentence as well as any other information listed in Tariff, Part XI, Subpart B, section 710 or provided in its Application for Contract Demand Transmission Service or other aspects of its facilities or operations affecting the Transmission Provider's ability to provide reliable service. Failure to timely inform the Transmission Provider of a material change in (i) the demand characteristics of the Co-Located Load, or (ii) the supply characteristics of the Co-Located Generating Facility may constitute a breach of the Eligible Customer's Service Agreement and subject to termination under Tariff, Part XI, Subpart B, section 710.7.

712 Study Procedures for Contract Demand Transmission Service

712.1 Study Procedures for Firm Contract Demand Transmission Service

After the Eligible Customer submits a Completed Application for Firm Contract Demand Transmission Service, the Transmission Provider shall notify the affected Transmission Owner(s) of the Completed Application. As necessary, Transmission Provider and the affected Transmission Owner(s) shall coordinate to study the effects of providing the requested Firm Contract Demand Transmission Service on the affected Transmission Owner(s)'s system pursuant to the applicable affected Transmission Owner requirements.

After receiving the Application for Firm Contract Demand Transmission Service, the Transmission Provider shall determine, in accordance with the PJM Manuals, any necessary studies for reliably providing the requested Firm Contract Demand Transmission Service. If the Transmission Provider determines that such studies are necessary to evaluate the requested service, it shall inform the Eligible Customer of those studies as soon as practicable. The Transmission Provider will also consider the results of any studies conducted by the affected Transmission Owner(s).

712.2 Study Procedures for Non-Firm Contract Demand Transmission Service

After receiving a request for Non-Firm Contract Demand Transmission Service, the Transmission Provider shall determine on a non-discriminatory basis, and in accordance with the PJM Manuals, whether studies are needed to assess whether the Transmission System has sufficient available capacity to provide Non-Firm Contract Demand Transmission Service, and if so, which studies are appropriate. Transmission Provider may notify the affected Transmission Owner of such

request for Non-Firm Contract Demand Transmission Service, and the Transmission Provider will also consider the results of any studies conducted by the affected Transmission Owner(s).

712.3 Application and Studies Agreement

In the event the Transmission Provider determines studies are necessary to evaluate the requested Contract Demand Transmission Service, the Transmission Provider shall tender an Application and Studies Agreement pursuant to which the Eligible Customer shall agree to reimburse the Transmission Provider for the required studies. For a service request to remain a Completed Application, the Eligible Customer shall execute the Application and Studies Agreement and return it to the Transmission Provider within fifteen (15) Business Days and provide the study fee pursuant to Tariff, Part XI, Subpart B, section 712.4. If the Eligible Customer elects not to execute the Application and Studies Agreement, its Application shall be deemed withdrawn and its fee shall be returned with interest.

712.4 Study Fee

Eligible Customer shall pay a study fee, as determined by the Transmission Provider, to apply for Firm Contract Demand Transmission Service or Non-Firm Contract Demand Transmission Service.

713 Load Shedding and Curtailments for Contract Demand Transmission Service

713.1 General

Prior to the Service Commencement Date, the Eligible Customer shall demonstrate its ability to fully comply with the Load Shedding and Curtailment procedures pursuant to this section 713, the PJM Manuals, and the Service Agreement for Contract Demand Transmission Service, as provided in Attachment F-4. The Eligible Customer shall implement any Load Shedding and/or Curtailment directive given by Transmission Provider. To the extent practicable, the Transmission Provider will notify the Eligible Customer of any Curtailment in a timely manner. Eligible Customers must respond to any real time instruction to curtail or otherwise reduce load within five (5) minutes. Curtailments will be made on a non-discriminatory basis.

713.2 Load Shedding

To the extent that a system contingency exists on the Transmission Provider's Transmission System and the Transmission Provider determines that it is necessary for the Eligible Customer to shed load at the designated Co-Located Load, the Eligible Customer shall shed load in accordance with previously established procedures under the Service Agreement for Contract Demand Transmission Service.

713.3 Curtailment of Firm Contract Demand Transmission Service

For purposes of Curtailment, Firm Contract Demand Transmission Service shall be treated as the equivalent of Network Integration Transmission Service.

713.4 Curtailment of Non-Firm Contract Demand Transmission Service

Non-Firm Contract Demand Transmission Service shall be Curtailed before Firm Contract Demand Transmission Service and Network Integration Transmission Service. The Transmission

Provider may Curtail Non-Firm Contract Demand Transmission Service prior to dispatching the Pre-Emergency Load Response Program as further set forth in the PJM Manuals, or in response to a transfer capability shortage as a result of system reliability conditions.

713.5 System Reliability

Notwithstanding any other provisions of this Tariff, the Transmission Provider reserves the right, consistent with Good Utility Practice and on a not unduly discriminatory basis, to Curtail Firm Contract Demand Transmission Service or Non-Firm Contract Demand Transmission Service, or both, without liability on the Transmission Provider's part, for the purpose of making necessary adjustments to, changes in, or repairs on its lines, substations, and facilities, and in cases where the continuance of Firm Contract Demand Transmission Service or Non-Firm Contract Demand Transmission Service, or both, would endanger persons or property. In the event of any adverse condition(s) or disturbance(s) on the Transmission Provider's Transmission System or on any other system(s) directly or indirectly interconnected with the Transmission Provider's Transmission System, the Transmission Provider, consistent with Good Utility Practice, also may Curtail Firm Contract Demand Transmission Service or Non-Firm Contract Demand Transmission Service in order to (i) limit the extent or damage of the adverse condition(s) or disturbance(s), (ii) prevent damage to generating or transmission facilities, or (iii) expedite restoration of service. The Transmission Provider will give the Eligible Customer as much advance notice as is practicable in the event of such Curtailment.

713.6 Necessary Control Technologies and Protection Systems for Non-Firm Contract Demand Transmission Service

To ensure protection of the Transmission System and that the Eligible Customer limits its energy withdrawals from the Transmission System to the level of Contract Demand Transmission Service provided in its Service Agreement for Contract Demand Transmission Service, including during a period in which the Transmission Provider has directed Curtailment or Load Shedding, prior to the Service Commencement Date, the Transmission Provider, affected Transmission Owner(s), and the Eligible Customer shall establish necessary control technologies and protection systems in accordance with the PJM Manuals, which may include a Remedial Action Scheme, for each Service Agreement for Non-Firm Contract Demand Transmission Service. The necessary control technologies and protection systems must be developed in accordance with the PJM Manuals and be approved by the Transmission Provider. The necessary control technologies and protection systems may be functionally modified from time to time. Any functional modification to the necessary control technologies and protection systems must be developed with the affected Transmission Owner(s) and approved by the Transmission Provider.

713.7 Consequences of Failure to Follow Instructions or Misoperation of Necessary Control Technologies and Protection Systems in a Contract Demand Transmission Service Agreement

(a) In the first instance that an Eligible Customer taking Firm Contract Demand Transmission Service or Non-Firm Contract Demand Transmission Service fails to respond to established Load Shedding and Curtailment procedures, as set forth in this section 713, the Eligible Customer shall be disqualified from taking Firm Contract Demand Transmission Service and Non-Firm Contract Demand Transmission Service.

(b) In the first instance that a necessary control technology or protection system for a given Service Agreement for Non-Firm Contract Demand Transmission Service misoperate, the Eligible Customer shall be prohibited from taking transmission service under its Service Agreement (both Firm Contract Demand Transmission Service and Non-Firm Contract Demand Transmission Service) or otherwise withdrawing energy from the Transmission System for a period of up to one hundred and twenty (120) days from such event, which may be shortened or extended per mutual agreement, to allow for an analysis of the operational performance of the necessary control technologies and protection systems.

In the second instance that an Eligible Customer's necessary control technology or protection system associated with a Service Agreement for Non-Firm Contract Demand Transmission Service misoperate, the Eligible Customer shall be disqualified from taking Firm Contract Demand Transmission Service and Non-Firm Contract Demand Transmission Service.

(c) Following disqualification under subsections (a) or (b) above, to receive any transmission service over the Transmission System, the Eligible Customer must apply for Network Integration Transmission Service under Tariff, Part III, with the option to qualify for Interim Network Integration Transmission Service under Tariff, Part XI subject to the provisions of the Tariff.

713.8 Penalty for Unreserved Use of Contract Demand Transmission Service

[Reserved]

714 Rates and Charges for Firm Contract Demand Transmission Service

714.1 Monthly Demand Charge

[Reserved]

714.2 Network Upgrade Charge

[Reserved]

714.3 Redispatch Charge

The Eligible Customer and each Transmission Owner shall pay any redispatch costs as set forth in Tariff, Attachment K.

714.4 Stranded Cost Recovery

Any Transmission Owner may seek to recover stranded costs from the Eligible Customer pursuant to this Tariff in accordance with the terms, conditions and procedures set forth in FERC Order No. 888. However, the Transmission Owner must separately file any proposal to recover stranded costs under section 205 of the Federal Power Act.

714.5 Other Charges

Eligible Customer shall pay administrative services charges under Tariff, Schedule 1A; Tariff, Schedule 9; and Tariff, Schedule 10 based on the total quantity of MWHs of energy delivered using Firm Contract Demand Transmission Service, except in the case of any capacity-related

charges under these schedules, which shall be based on the Eligible Customer's Unforced Capacity Obligation.

Eligible Customer shall pay Ancillary Services charges, except for Regulation, based on the total quantity in MWhs of energy delivered to the Co-Located Load using Firm Contract Demand Transmission Service in accordance with Tariff, Part I, section 3.

Eligible Customer shall pay Black Start Service charges based on the gross demand of the Co-Located Load in accordance with Tariff, Schedule 6A.

Eligible Customer shall pay Regulation charges based on the gross demand of the Co-Located Load.

715 Rates and Charges for Non-Firm Contract Demand Transmission Service

715.1 Monthly Demand Charge

[Reserved]

715.2 Redispatch Charge

The Eligible Customer and each Transmission Owner shall pay any redispatch costs as set forth in Tariff, Attachment K.

715.3 Stranded Cost Recovery

Any Transmission Owner may seek to recover stranded costs from the Eligible Customer pursuant to this Tariff in accordance with the terms, conditions and procedures set forth in FERC Order No. 888. However, the Transmission Owner must separately file any proposal to recover stranded costs under section 205 of the Federal Power Act.

715.4 Other Charges

Eligible Customer shall pay administrative services charges under Tariff, Schedule 1A; Tariff, Schedule 9; and Tariff, Schedule 10 based on the total quantity of MWhs of energy delivered using Non-Firm Contract Demand Transmission Service, except any capacity-related charges under these schedules will not apply.

Eligible Customer shall pay Ancillary Services charges, except for Regulation, based on the total quantity in MWhs of energy delivered to the Co-Located Load using Non-Firm Contract Demand Transmission Service in accordance with Tariff, Part I, section 3.

To the extent the Eligible Customer does not have an effective Service Agreement for Firm Contract Demand Transmission Service, Eligible Customer shall pay Black Start Service charges based on the gross demand of the Co-Located Load in accordance with Tariff, Schedule 6A.

To the extent the Eligible Customer does not have an effective Service Agreement for Firm Contract Demand Transmission Service, Eligible Customer shall pay Regulation charges based on a gross demand of the Co-Located Load.

716 Operating Agreement

716.1 Operating Agreement

The Eligible Customer shall plan, construct, operate and maintain its facilities in accordance with Good Utility Practice and in conformance with the Operating Agreement.

The terms and conditions under which the Eligible Customer shall operate its facilities and the technical and operational matters associated with the implementation of Tariff, Part XI shall be specified in the Operating Agreement.

The Operating Agreement shall provide for the Eligible Customer and Transmission Provider to (i) operate and maintain equipment necessary for integrating the Eligible Customer within the Transmission Provider's Transmission System (including, but not limited to, remote terminal units, metering, communications equipment and relaying equipment); (ii) transfer data between the Transmission Provider and the Eligible Customer (including, but not limited to, heat rates and operational characteristics of Network Resources, generation schedules for units outside the Transmission Provider's Transmission System, interchange schedules, unit outputs for required redispatch, voltage schedules, loss factors and other real time data); (iii) use software programs required for data links and constraint dispatching; (iv) exchange data on forecasted loads and resources necessary for long-term planning; and (v) address any other technical and operational considerations required for implementation of Tariff, Part XI, including scheduling protocols.

Service Agreement No. [Insert]

ATTACHMENT F-3A

Service Agreement For
Regional Network Integration Transmission Service
And/or
Interim Network Integration Transmission Service
(For Co-Located Load)

1.0 This Service Agreement, dated as of the date the last party executes this agreement, is entered into, by and between the Office of the Interconnection of PJM Interconnection, L.L.C. (the Transmission Provider) as the administrator of the Tariff, PJMSettlement Inc. ("Counterparty") as the counterparty, and _____ ("Network Customer"). [If applicable: This Service Agreement supersedes the Service Agreement among Transmission Provider, Counterparty, and [insert prior Network Customer's entity name], [insert Service Agreement Number], effective date [insert], which was filed with the Commission in Docket No. [insert].]

2.0 [Instructions: Choose one of the following]

[The Network Customer has been determined by the Transmission Provider to have a valid request for Network Transmission Service under the Tariff and to have satisfied the conditions for service imposed by the Tariff.]

[or]

[The Network Customer, which is an Eligible Customer taking transmission service on behalf of Co-Located Load, has been determined by the Transmission Provider to have a valid request for Network Transmission Service under the Tariff and to have satisfied the conditions for service imposed by the Tariff, except for the condition that the following facilities must be completed and placed into service:

[If applicable, list facilities to be completed and placed into service.]

Until the facilities listed above are completed, the Transmission Owner provides a Notice of Completion to PJM, and the facilities listed above are in service, the Eligible Customer may not only receive Interim Regional Network Integration Transmission Service subject to the conditions of Part XI of the Tariff.

3.0 Regional Network Integration Transmission Service under this agreement shall commence on the later of: (l) the requested service commencement date of _____, or (2) the date on which construction of any Direct Assignment Facilities and/or Network Upgrades are completed, or (3) such other date as it is permitted to become effective by

the Commission. Network Customer taking Regional Network Integration Transmission Service shall take such service on terms that do not expire.

Regional Network Integration Transmission Service shall terminate consistent with Tariff, Part I, section 2.5. Specifically, Regional Network Integration Transmission Service may be terminated where: (1) an incumbent Network Customer will be replaced by a successor Network Customer, in which case the incumbent's service shall only terminate if the successor agrees to commence the taking of the service, the appropriate service agreement is executed, and all other applicable terms and conditions of the PJM Governing Agreements are satisfied; (2) an incumbent Network Customer seeks to terminate its service and no successor Network Customer exists, in which case the incumbent must provide PJM with forty-two (42) months' notice prior to the commencement of a Delivery Year, subject to receiving all necessary regulatory approvals for such termination, if any; or (3) on such other date mutually agreed upon by the Parties.

[If applicable] [Interim Network Integration Transmission Service under this agreement shall commence on the later of: (l) the requested service commencement date of _____, or (2) such other date as it is permitted to become effective by the Commission. On the date on which construction of any Direct Assignment Facilities and/or Network Upgrades are completed, Interim Network Integration Transmission Service shall terminate consistent with Tariff, Part XI, and Regional Network Integration Transmission Service shall begin.]

4.0 The Transmission Provider agrees to provide and the Network Customer agrees to take and pay for Regional Network Integration Transmission Service, when applicable, and Interim Regional Network Integration Transmission Service, when applicable, in accordance with the provisions of the Tariff, including the Operating Agreement (which is incorporated herein by reference), and this Service Agreement as they may be amended from time to time. Failure to timely inform the Transmission Provider of a material change in (i) the demand characteristics of the Co-Located Load or (ii) the supply characteristics of the Co-Located Generating Facility may constitute a breach of the Eligible Customer's Service Agreement and this Service Agreement may be terminated pursuant to Tariff, Part XI, Subpart B, section 710.7.

[If applicable] [The Eligible Customer will comply with the necessary control technologies and protection systems provisions in Tariff, Part XI, prior to the Service Commencement Date.]

5.0 The Eligible Customer certifies it is willing and able to limit its usage of the Transmission System when requested by the Transmission Provider.

6.0 Any notice or request made to or by either Party regarding this Service Agreement shall be made to the representative of the other Party as indicated below.

Transmission Provider (on behalf of Transmission Provider and Counterparty):

PJM Interconnection, L.L.C.
2750 Monroe Blvd.
Audubon, PA 19403

Network Customer:

_____

_____

_____

7.0 The Tariff for Network Integration Transmission Service, Tariff, Part III, and Interim Network Integration Transmission Service, Tariff, Part XI, is incorporated herein and made a part hereof.

IN WITNESS WHEREOF, the Parties have caused this Service Agreement to be executed by their respective authorized officials.

Office of the Interconnection:

By: _____ _____ _____
Name Title Date

Counterparty:

By: _____ _____ _____
Name Title Date

Network Customer:

By: _____ _____ _____
Name Title Date

CERTIFICATION

I, _____, certify that I am a duly authorized officer of _____ (Network Customer) and that _____ (Network Customer) will not request service under this Service Agreement to assist an Eligible Customer to avoid the reciprocity provision of this Open-Access Transmission Tariff.

_____
(Name)

_____
(Title)

Subscribed and sworn before me this _____ day of _____, _____.

_____

(Notary Public)

My Commission expires:_____

SPECIFICATIONS FOR
REGIONAL NETWORK INTEGRATION TRANSMISSION SERVICE

1.0 Regional Network Integration Transmission Service Amount (MW): _____MW

2.0 Description of Co-Located Generating Facility:_____

_____

_____

Maximum Facility Output of Co-Located Generating Facility: _____MW

3.0 Description of Co-Located Load: _____

_____

_____

Gross Demand of Co-Located Load: _____MW

4.0 Service under this Agreement may be subject to some combination of the charges detailed below. (The appropriate charges for individual transactions will be determined in accordance with the terms and conditions of the Tariff.)

4.1 Embedded Cost Transmission Charge:_____

_____

4.2 Facilities Study Charge:_____

_____

4.3 Direct Assignment Facilities Charge:_____

_____

4.4 Ancillary Services Charge:_____

_____

4.5 Other Supporting Facilities Charge:_____

_____

{If applicable} SPECIFICATIONS FOR
INTERIM REGIONAL NETWORK INTEGRATION TRANSMISSION SERVICE

1.0 Interim Regional Network Integration Transmission Service Amount (MW): _____MW

2.0 Description of Co-Located Generating Facility:_____

_____

_____

Maximum Facility Output of Co-Located Generating Facility: _____MW

3.0 Description of Co-Located Load: _____

_____

_____

Gross Demand of Co-Located Load: _____MW

4.0 Service under this Agreement may be subject to some combination of the charges detailed below. (The appropriate charges for individual transactions will be determined in accordance with the terms and conditions of the Tariff.)

4.1 Embedded Cost Transmission Charge:_____

_____

4.2 Facilities Study Charge:_____

_____

4.3 Direct Assignment Facilities Charge:_____

_____

4.4 Ancillary Services Charge:_____

_____

4.5 Other Supporting Facilities Charge:_____

_____

Service Agreement No. [Insert]

ATTACHMENT F-4

Service Agreement For
Contract Demand Transmission Service
(For Co-Located Load)

1.0 This Service Agreement, dated as of the date the last party executes this agreement, is entered into, by and between the Office of the Interconnection of PJM Interconnection, L.L.C. (the Transmission Provider) as the administrator of the Tariff, PJMSettlement Inc. ("Counterparty") as the counterparty, and _____ ("Eligible Customer"). [If applicable: This Service Agreement supersedes the Service Agreement among Transmission Provider, Counterparty, and [insert prior Eligible Customer's entity name], [insert Service Agreement Number], effective date [insert], which was filed with the Commission in Docket No. [insert].]

2.0 [Instructions: Choose one of the following depending on whether facilities upgrades are needed.]

[If facilities upgrades are not needed or if Eligible Customer is seeking solely Non-Firm Contract Demand Transmission Service] The Eligible Customer, who is taking transmission service on behalf of Co-Located Load, has been determined by the Transmission Provider to have a valid request for [Firm Contract Demand Transmission Service and/or Non-Firm Contract Demand Transmission Service] under the Tariff and to have satisfied the conditions for service imposed by the Tariff.

[or]

[If facilities upgrades are needed, assuming Eligible Customer is seeking at least a portion of Firm Contract Demand Transmission Service] [The Eligible Customer, who is taking transmission service on behalf of Co-Located Load, has been determined by the Transmission Provider to have a valid request for Firm Contract Demand Transmission Service under the Tariff and to have satisfied the conditions for service imposed by the Tariff, except for the condition that the following facilities must be completed and placed into service:]

[If applicable, list facilities to be completed and placed into service.]

Until the facilities listed above are completed, the Transmission Owner provides a Notice of Completion to PJM, and the facilities listed above are in service, the Eligible Customer may not receive Firm Contract Demand Transmission Service under Tariff, Part XI.

3.0 Contract Demand Transmission Service under this agreement shall commence on the later of: (l) the requested service commencement date of _____, or (2) the date

on which construction of any Direct Assignment Facilities and/or Network Upgrades are completed, or (3) such other date as it is permitted to become effective by the Commission.

Contract Demand Transmission Service shall terminate consistent with Tariff, Part XI, section 710.7.

4.0 The Transmission Provider agrees to provide and the Eligible Customer agrees to take and pay for Contract Demand Transmission Service in accordance with the provisions of the Tariff, including the Operating Agreement (which is incorporated herein by reference), and this Service Agreement, as they may be amended from time to time. Failure to timely inform the Transmission Provider of a material change in (i) the demand characteristics of the Co-Located Load or (ii) the supply characteristics of the Co-Located Generating Facility may constitute a breach of the Eligible Customer's Service Agreement and this Service Agreement may be terminated pursuant to Tariff, Part XI, Subpart B, section 710.7.

5.0 The Eligible Customer will comply with the necessary control technologies and protection systems provisions in Tariff, Part XI, prior to the Service Commencement Date.

6.0 The Eligible Customer certifies it is willing and able to limit its usage of the Transmission System when requested by the Transmission Provider.

7.0 Any notice or request made to or by either Party regarding this Service Agreement shall be made to the representative of the other Party as indicated below.

Transmission Provider (on behalf of Transmission Provider and Counterparty):

PJM Interconnection, L.L.C.
2750 Monroe Blvd.
Audubon, PA 19403

Eligible Customer:

_____

_____

_____

8.0 Tariff, Part XI, for Contract Demand Transmission Services, as it may be revised from time to time, is incorporated herein and made a part hereof.

IN WITNESS WHEREOF, the Parties have caused this Service Agreement to be executed by their respective authorized officials.

Office of the Interconnection:

By: _____ _____ _____
Name Title Date

Counterparty:

By: _____ _____ _____
Name Title Date

Eligible Customer:

By: _____ _____ _____
Name Title Date

CERTIFICATION

I, _____, certify that I am a duly authorized officer of _____ (Eligible Customer) and that _____ (Eligible Customer) will not request service under this Service Agreement to assist an Eligible Customer to avoid the reciprocity provision of this Open-Access Transmission Tariff.

_____
(Name)

_____
(Title)

Subscribed and sworn before me this _____ day of _____, _____.

_____

(Notary Public)

My Commission expires:_____

SPECIFICATIONS FOR
CONTRACT DEMAND TRANSMISSION SERVICE

1.0 Firm Contract Demand Transmission Service Amount (MW): _____MW

Non- Firm Contract Demand Transmission Service Amount (MW): _____MW

2.0 Description of Co-Located Generating Facility:_____

_____

_____

Maximum Facility Output of Co-Located Generating Facility: _____MW

MW of Co-Located Generating Facility dedicated to Co-Located Load: _____MW

3.0 Description of Co-Located Load: _____

_____

_____

Gross Demand of Co-Located Load: _____MW

4.0 Service under this Agreement may be subject to charges specified in the Tariff, which may change from time to time, plus some combination of the charges detailed below. (The appropriate charges for individual transactions will be determined in accordance with the terms and conditions of the Tariff.)

4.1 Embedded Cost Transmission Charge:_____

_____

4.2 Facilities Study Charge:_____

_____

4.3 Direct Assignment Facilities Charge:_____

_____

4.4 Ancillary Services Charge:_____

_____

4.5 Other Supporting Facilities Charge:_____

_____

Schedule A

Single Line Diagram

PART I DEFINITIONS

Definitions – C – D

. . .

"Curtailment" shall mean a reduction in firm or non-firm transmission service in response to a transfer capability shortage as a result of system reliability conditions, or in the case of Interim Network Integration Transmission Service or Non-Firm Contract Demand Transmission Service, in accordance with the terms of Tariff, Part XI.

. . .

Definitions – R

. . .

"Remedial Action Scheme" shall have the meaning set forth in the North American Electric Reliability Corporation Glossary of Terms.

. . .

Part III Network Integration Transmission Service

29 Initiating Service

. . .

29.2 Application Procedures:

. . .

(x) For Eligible Customers taking service on behalf of Co-Located Load: (1) a demonstration that the Co-Located Load on behalf of which the Eligible Customer is seeking to obtain service and the Co-Located Generating Facility are located on the same side of the Delivery Point to the Transmission Provider's Transmission System as the Co-Located Load; (2) description of the supply characteristics of the Co-Located Generating Facility, including the generation profile and other technical specifications as may be requested by the Transmission Provider; and (3) a description of the demand characteristics of the Co-Located Load above, including the demand profile and other technical specifications as may be requested by the Transmission Provider.

. . .

Tariff, Part IX, Subpart B

FORM OF

GENERATION INTERCONNECTION AGREEMENT COMBINED WITH CONSTRUCTION SERVICE AGREEMENT

. . .

SCHEDULE O

Co-Located Generating Facility Associated with Co-Located Load

{Include the appropriate language from the alternatives below.}

{Include the following language if the Generating Facility is not associated with Co-Located Load:}

Not Required

{If applicable: the following applies when a Project Developer intends to use its Generating Facility to serve Co-Located Load through Tariff, Part XI}

Information required for a Project Developer who intends to use its Generating Facility to serve Co-Located Load through Tariff, Part XI:

a. Eligible Customer taking transmission service on behalf of the Co-Located Load:

_____

_____

_____

b. Gross Demand (MW) of Co-Located Load _____ MW

c. Contact Information for Co-Located Load: _____ MW

_____

_____

_____

_____

d. Contact Information for Eligible Customer:

_____

_____

_____

e. Identify the Project Developer Interconnection Facilities to which the Co-Located Load will interconnect.

Additional Requirements for a Project Developer who intends to use its Generating Facility to serve Co-Located Load through Tariff, Part XI:

1. {Include reference to, and incorporation of, operational or administrative requirements necessary for Co-Located Generating Facility based on fuel type, including, for example, any relevant Nuclear Plant Interface Agreement and Procedures.}

2. {If applicable} Project Developer will transfer power to the transmission facilities of the Co-Located Load behind Project Developer's revenue meter. Project Developer has designed and installed, and will operate and maintain in good working condition and in accordance with Good Utility Practice, necessary control technologies and protection systems, to ensure that the Co-Located Load separates in the event of loss of generation output from the Generating Facility to ensure no power flows from Transmission Owner Interconnection Facilities and/or Transmission Owner Upgrades to the Co-Located Load.

3. {If applicable} Project Developer agrees to notify Transmission Owner and Transmission Provider as soon as possible and no later than next calendar day in the event of any failure of the Operating Procedure or any equipment malfunction or misoperation related to these protections.

Attachment B

Affidavit of Dr. Sami Abdulsalam, Director of Transmission Planning

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

PJM Interconnection, L.L.C.	)	Docket Nos. EL25-49-000
PJM Interconnection, L.L.C.	)	EL25-49-001
Allegheny Electric Cooperative, Inc.	)	
American Transmission Systems, Incorporated	)	
Atlantic City Electric Company	)	
Baltimore Gas and Electric Company	)	
Delmarva Power & Light Company	)	
Duke Energy Ohio, Inc.	)	
Duke Energy Kentucky, Inc.	)	
East Kentucky Power Cooperative, Inc.	)	
Essential Power Rock Springs, LLC	)	
Hudson Transmission Partners, LLC	)	
Jersey Central Power & Light Company	)	
Mid-Atlantic Interstate Transmission, LLC	)	
Neptune Regional Transmission System, LLC	)	
Old Dominion Electric Cooperative	)	
PECO Energy Company	)	
PPL Electric Utilities Corporation	)	
Potomac Electric Power Company	)	
Public Service Electric and Gas Company	)	
Rockland Electric Company	)	
Trans-Allegheny Interstate Line Company	)	
Transource West Virginia, LLC	)	
UGI Utilities, Inc.	)	
Monongahela Power Company	)	
The Potomac Edison Company	)	
Commonwealth Edison Company	)	
Commonwealth Edison Company of Indiana, Inc.	)	
The Dayton Power and Light Company	)	
AEP Appalachian Transmission Company, Inc.	)	
AEP Indiana Michigan Transmission Company, Inc.	)	
AEP Kentucky Transmission Company, Inc.	)	
AEP Ohio Transmission Company, Inc.	)	
AEP West Virginia Transmission Company, Inc.	)	
Appalachian Power Company	)	
Indiana Michigan Power Company	)	
Kentucky Power Company	)	
Kingsport Power Company	)	
Ohio Power Company	)	

Wheeling Power Company Duquesne Light Company Virginia Electric and Power Company Linden VFT, LLC City of Cleveland, Department of Public Utilities, Division of Cleveland Public Power City of Hamilton, OH Southern Maryland Electric Cooperative, Inc. Ohio Valley Electric Corporation AMP Transmission, LLC Silver Run Electric, LLC NextEra Energy Transmission MidAtlantic Indiana, Inc. Wabash Valley Power Association, Inc. Keystone Appalachian Transmission Company	)	
Large Loads Co-Located at Generating Facilities	)	AD24-11-000
Constellation Energy Generation, LLC	)	EL25-20-000
	)	(Consolidated)
v.	)	
PJM Interconnection, L.L.C.	)	

AFFIDAVIT OF DR. SAMI ABDULSALAM,
ON BEHALF OF PJM INTERCONNECTION, L.L.C.

1. My name is Sami Abdulsalam, Ph.D., P.Eng. I am the Director of Transmission Planning for PJM Interconnection, L.L.C. ("PJM"). My business address is 2750 Monroe Boulevard, Audubon, Pennsylvania 19403. I am submitting this affidavit in support of PJM's proposed revisions to the PJM Open Access Transmission Tariff ("Tariff") to comply with the Federal Energy Regulatory Commission's ("Commission" or "FERC") directives in its December 18, 2025 order[1] to establish three new transmission services for Eligible Customers ("EC") seeking to take service on behalf of Co-Located Load.

2. Specifically, in this affidavit, I explain:

- Why Network Integration Transmission Service ("NITS") is used for internal (non-border) transmission service in the PJM Region, and the planning and operational benefits that NITS provides to the PJM Region;

- The complexity associated with Non-Firm Contract Demand Transmission Service from an operations and planning perspective; and

[1] *PJM Interconnection, L.L.C.*, 193 FERC ¶ 61,217 (2025) ("December 18, 2025 Order").

- The corresponding reasons why PJM is recommending that Non-Firm Contract Demand Transmission Service be limited to a maximum of 100% of the generation Maximum Facility Output.

I. QUALIFICATIONS

3. I joined PJM in January of 2022. I have been in my current position as the Director of PJM Transmission Planning since March 2024, and I previously served as the Senior Manager of PJM Transmission Planning. My principal responsibility is to lead the development of PJM's Regional Transmission Expansion Plan. This function centers on the planning of the regional transmission system for the provision of reliable electric service in accordance with North American Electric Reliability Corporation Reliability Standards, as well as PJM and Transmission Owner reliability and operational criteria. I will also lead the team that will implement PJM's Long-Term Regional Transmission Planning Protocol, as accepted by FERC.

4. Prior to this position, I served as Senior Manager, Consulting at Siemens PTI where I was responsible for power system analysis, transmission planning, and protection studies; as Principal Engineer at Sustainable Grid Power, Inc.; and, for more than ten years, held various transmission planning positions of increasing responsibility, including Director, Transmission Planning and Director, Transmission System Projects, at the Alberta Electric System Operator in Canada.

5. Earlier in my career, I held various positions in the oil and gas industry, and was an Operational Engineer in thermal power plants in Egypt. My academic research focused on power system performance under voltage stability/high power transfer conditions as well as dynamic and transient behavior of power systems.

6. I hold a Bachelor of Science degree and Master of Science degree in Electrical Engineering received from the University of El-Mansoura in Egypt in 1997 and 2001, respectively. I received a Ph.D. in Electrical Engineering from the University of Alberta in Edmonton, Alberta, Canada in 2007. I also completed a post-doctoral fellowship in the Electrical and Computer Engineering Department at the University of Alberta, Edmonton, Alberta, Canada from 2007 to 2008. In addition, I am a registered Professional Engineer (P.Eng.) in Alberta, Canada.

II. WHY NITS IS USED FOR INTERNAL TRANSMISSION SERVICE IN THE PJM REGION

7. In PJM, NITS is used for internal (non-border) transmission service in the PJM Region. The NITS type of transmission service enables a high level of reliability across the region under system normal and abnormal operating conditions. This type of service ensures the transmission network and the needed capacity to serve such load and allows PJM to plan for and secure the requisite level of service needed to accommodate changes in system conditions and the resource mix, as it shifts with time. NITS also ensures the system overall

is "proactively" planned to a forecasted level of service and the needed resource capacity to maintain the reliability of service is secured ahead of time. Given the level of reliability offered by the NITS to its transmission service loads, such loads rarely face situations of curtailments or load shedding, as they are usually limited to extreme transmission outage conditions or resource emergency conditions.

8. In addition, PJM serves a system load that is high in density compared to its geographic footprint. The high load density in the PJM Region means that a higher load level is served from a single point of service/delivery. As a result, a higher number of customers could be exposed to interruption risk under malfunction, misoperation, or unplanned interaction between more than one necessary control technologies or protection systems, which may include Remedial Action Schemes ("RAS"). Hence, the reliability of service is critical to avoid impacting large lumps of loads under normal and contingency (outage) conditions in accordance with PJM planning criteria. Loads with non-firm transmission service would not benefit from either (i) the availability of service under normal and abnormal system operating conditions and (ii) the proactive transmission planning and capacity procurements. There is no guarantee to the availability of transmission capacity nor resource adequacy to support such type of load when it requests the service, nor do they affect any adjustments to transmission development or capacity procurements on a forward-looking basis.

III. THE COMPLEXITY ASSOCIATED WITH NON-FIRM CONTRACT DEMAND TRANSMISSION SERVICE FROM AN OPERATIONS AND PLANNING PERSPECTIVE

9. In order to ensure reliable and secure performance of the interconnected system, PJM must ensure the system operates strictly within the planned-for conditions. Hence, for any Co-Located Load arrangement, needed special protection schemes will be installed and set to ensure such load does not withdraw energy in excess of the megawatt level permitted under its effective service agreement. A non-firm type of transmission service will need to be evaluated on a per-request basis and will be tied to necessary control technologies or protection systems, which may include RAS (together, "protection systems") to ensure that the contracted-for withdrawal level is not exceeded and that the pre-scheduled, non-firm withdrawal level can only be reliably enabled under conditions that PJM has agreed to.

10. Hence, PJM will allow for expedited interconnection of a Co-Located Load requesting NITS—through Interim NITS—even while the required network upgrades are pending or under construction through the design and implementation of temporary and practical protection systems. Such protection systems will allow for reliable operation of the transmission system pending energization of the identified upgrades and during the "interim" arrangement, on the further condition that such load will be curtailed prior to loads taking NITS. The temporary nature of such a protection system for this type of firm service is necessary to ensure the integrity and reliable operation of the transmission system as a whole since protection systems are designed based on system conditions anticipated at that time and will continue to change as system conditions evolve. With increased adoption of protection systems, these schemes may also interact under abnormal operating

conditions leading to unintended consequences or even cascading actions that are not foreseen or planned for.

11. It is to be noted that the transmission facilities serving large loads will likely have multiple feeders supplying the end-user load that will vary in configuration and loading level based on end-user operating conditions. Moreover, these facilities will have redundancies that can allow for the same load to be supplied from multiple feeders for reliability purposes. Designing a protection system scheme that can selectively drop a pre-defined amount of load by discrete actions does not guarantee providing the need offered by a single protection system action and will also rely on multiple measurements and logics that all combined lead to a much-reduced reliability and security level of such a protection system. In addition, the level of load that could be served based on anticipated system conditions can vary, and having the protection systems flexible enough to be "dialed" to a specific load-level will add significant complexity as the protection system action to relief the reliability constraints could be different depending on the scheduled non-firm load level.

12. For Non-Firm Contract Demand Transmission Service, the non-firm withdrawals will be offered on a pre-scheduled/requested basis and are not guaranteed. As I mentioned earlier, this load is neither planned for (i.e., PJM's transmission planning does not consider this load and so the system is not designed to accommodate it) nor is this load considered in PJM's resource adequacy planning—therefore, PJM does not secure Capacity Resources to meet the load's needs. Only the portion of the gross load for which the Eligible Customer has contracted for Firm Contract Demand Transmission Service will be enabled through any needed transmission development and Capacity Resources. The non-firm service will be offered on a scheduled, per-request basis under system conditions that are not planned-for beforehand. Since the conditions of the system coincident with such service could vary widely, it will be difficult to design a single protection system that covers and adapts all potential conditions under which the non-firm service could be offered while maintaining reliable system operation. For Non-Firm Contract Demand Transmission Service, PJM will be offering and managing these pre-scheduled services "operationally" and ensure that permanent monitoring and aggressive, fast-acting protections are in place if conditions arise that may compromise reliable system operations. This approach allows for more reliable system operation, reduces the number of permanent protection systems on the system, thereby reducing the likelihood of unintended protection system misoperation that could lead to cascading events.

IV. WHY IS PJM RECOMMENDING THAT NON-FIRM CONTRACT DEMAND TRANSMISSION SERVICE BE LIMITED TO A MAXIMUM OF 100% OF THE GENERATION MAXIMUM FACILITY OUTPUT?

13. The intent of the December 18, 2025 Order on Co-Located Load appears to be to provide Eligible Customers co-locating with generation behind a single Point of Interconnection flexibility in selecting transmission service that is commensurate with and reflective of their use of the transmission system and their relative willingness and ability to limit energy withdrawals from the transmission system. But the flexibility to select non-firm transmission service is not intended as a path to avoid reasonable costs of services such loads receive (either on basis of use or causation) compared to firm-load services.

14. The order also specifically notes that the flexibility of Non-Firm Contract Demand Transmission Service is targeted at Eligible Customers using the transmission system on behalf of a Co-Located Load in a more limited manner[2]—e.g., Eligible Customers that rely on a "co-location" arrangement with either a proposed or existing generator that allows the Eligible Customer to supply their loads directly from the co-located generator without using the transmission system. An Eligible Customer would only need to take non-firm transmission service under limited circumstances—e.g., if the co-located generator is unavailable or operating at a reduced capacity.[3]

15. The order also requires Non-Firm Contract Demand Transmission Service to be requested ahead of time and on a relatively short duration basis (one hour to one month).[4] This forward request for service implies foreseeable conditions where the Co-Located Load is expected to withdraw power from the PJM network. Such conditions only materialize if the generator is planned to go out of service or face operating conditions requiring its output to be derated for a relatively short timeframe. Such flexibility and conditions in operation can only exist if the non-firm load size can be served fully through the co-located generator (i.e., the generator is at least 100% of the non-firm load size).

16. By contrast, allowing for a non-firm transmission service exceeding 100% of the generator Maximum Facility Output ("MFO"), implies that the load is oversized relative to the size of the co-located generator, and is intending to lean on and use the transmission system 100% of the time for all load above the generator MFO. Load that is oversized relative to the size of the co-located generator should be required to take NITS or Firm Contract Demand Transmission Service to avoid excessive use of the resources and transmission system that have been only planned for to serve the NITS and other firm load services.

17. PJM proposes to limit non-firm transmission service to a maximum of 100% of generator MFO to ensure that loads that are "willing and able" to reduce their withdrawal from the system and can benefit from having a co-located generator on-site be offered their requested level of service without (i) compromising the level of reliability to firm loads, or (ii) over utilizing their non-firm contract arrangements at the cost of firm service ratepayers. At the same time PJM and Transmission Owner operator intervention and assistance is reserved to be available on an as-needed basis, rather than becoming a daily, if not hourly, burden that can consequently inhibit the work of PJM operations staff.

18. This concludes my Affidavit.

---

[2] December 18, 2025 Order at P 214 ("The new Non-Firm Contract Demand service will provide an option for Eligible Customers seeking to use the transmission system on behalf of a Co-Located Load in this more limited manner, while still charging customers for regulation and black start services, for the reasons discussed above.").

[3] December 18, 2025 Order at P 214; *id.*, concur op. (Commissioner Rosner) at P 6.b ("[A] data center may instead elect to purchase Non-Firm Contract Demand Transmission Service if, for example, it only plans to pull energy from the grid temporarily while its co-located generator is undergoing scheduled maintenance.").

[4] December 18, 2025 Order at P 215.

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

PJM Interconnection, L.L.C.	)	Docket Nos. EL25-49-000
PJM Interconnection, L.L.C.	)	EL25-49-001
Allegheny Electric Cooperative, Inc.	)	
American Transmission Systems, Incorporated	)	
Atlantic City Electric Company	)	
Baltimore Gas and Electric Company	)	
Delmarva Power & Light Company	)	
Duke Energy Ohio, Inc.	)	
Duke Energy Kentucky, Inc.	)	
East Kentucky Power Cooperative, Inc.	)	
Essential Power Rock Springs, LLC	)	
Hudson Transmission Partners, LLC	)	
Jersey Central Power & Light Company	)	
Mid-Atlantic Interstate Transmission, LLC	)	
Neptune Regional Transmission System, LLC	)	
Old Dominion Electric Cooperative	)	
PECO Energy Company	)	
PPL Electric Utilities Corporation	)	
Potomac Electric Power Company	)	
Public Service Electric and Gas Company	)	
Rockland Electric Company	)	
Trans-Allegheny Interstate Line Company	)	
Transource West Virginia, LLC	)	
UGI Utilities, Inc.	)	
Monongahela Power Company	)	
The Potomac Edison Company	)	
Commonwealth Edison Company	)	
Commonwealth Edison Company of Indiana, Inc.	)	
The Dayton Power and Light Company	)	
AEP Appalachian Transmission Company, Inc.	)	
AEP Indiana Michigan Transmission Company, Inc.	)	
AEP Kentucky Transmission Company, Inc.	)	
AEP Ohio Transmission Company, Inc.	)	
AEP West Virginia Transmission Company, Inc.	)	
Appalachian Power Company	)	
Indiana Michigan Power Company	)	
Kentucky Power Company	)	
Kingsport Power Company	)	
Ohio Power Company	)	

Wheeling Power Company Duquesne Light Company Virginia Electric and Power Company Linden VFT, LLC City of Cleveland, Department of Public Utilities, Division of Cleveland Public Power City of Hamilton, OH Southern Maryland Electric Cooperative, Inc. Ohio Valley Electric Corporation AMP Transmission, LLC Silver Run Electric, LLC NextEra Energy Transmission MidAtlantic Indiana, Inc. Wabash Valley Power Association, Inc. Keystone Appalachian Transmission Company	)	
Large Loads Co-Located at Generating Facilities	)	AD24-11-000
Constellation Energy Generation, LLC	)	EL25-20-000
	)	(Consolidated)
v.	)	
PJM Interconnection, L.L.C.	)	

VERIFICATION OF DR. SAMI ABDULSALAM

I, Dr. Sami Abdulsalam, pursuant to 28 U.S.C. § 1746, state, under penalty of perjury, that I am the Sami Abdulsalam referred to in the foregoing "Affidavit of Dr. Sami Abdulsalam on Behalf of PJM Interconnection, L.L.C.," that I have read the same and am familiar with the contents thereof, and that the facts set forth therein are true and correct to the best of my knowledge, information, and belief.

/s/ Dr. Sami Abdulsalam
Dr. Sami Abdulsalam
Director, Transmission Planning
PJM Interconnection, L.L.C.

Executed on: February 23, 2026

Attachment C

Affidavit of Matthew Wharton, Manager, Reliability Engineering

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

PJM Interconnection, L.L.C.	)	
PJM Interconnection, L.L.C.	)	Docket Nos. EL25-49-000
Allegheny Electric Cooperative, Inc.	)	EL25-49-001
American Transmission Systems, Incorporated	)	
Atlantic City Electric Company	)	
Baltimore Gas and Electric Company	)	
Delmarva Power & Light Company	)	
Duke Energy Ohio, Inc.	)	
Duke Energy Kentucky, Inc.	)	
East Kentucky Power Cooperative, Inc.	)	
Essential Power Rock Springs, LLC	)	
Hudson Transmission Partners, LLC	)	
Jersey Central Power & Light Company	)	
Mid-Atlantic Interstate Transmission, LLC	)	
Neptune Regional Transmission System, LLC	)	
Old Dominion Electric Cooperative	)	
PECO Energy Company	)	
PPL Electric Utilities Corporation	)	
Potomac Electric Power Company	)	
Public Service Electric and Gas Company	)	
Rockland Electric Company	)	
Trans-Allegheny Interstate Line Company	)	
Transource West Virginia, LLC	)	
UGI Utilities, Inc.	)	
Monongahela Power Company	)	
The Potomac Edison Company	)	
Commonwealth Edison Company	)	
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Inc.	)	
The Dayton Power and Light Company	)	
AEP Appalachian Transmission Company, Inc.	)	
AEP Indiana Michigan Transmission Company,	)	
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Inc.	)	
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Kentucky Power Company	)	
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Ohio Power Company	)	
Wheeling Power Company	)	

Duquesne Light Company	)	
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Linden VFT, LLC	)	
City of Cleveland, Department of Public	)	
Utilities, Division of Cleveland Public Power	)	
City of Hamilton, OH	)	
Southern Maryland Electric Cooperative, Inc.	)	
Ohio Valley Electric Corporation	)	
AMP Transmission, LLC	)	
Silver Run Electric, LLC	)	
NextEra Energy Transmission MidAtlantic	)	
Indiana, Inc.	)	
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Keystone Appalachian Transmission Company	)	
	)	
Large Loads Co-Located at Generating	)	
Facilities	)	AD24-11-000
	)	
Constellation Energy Generation, LLC	)	
	)	EL25-20-000
v.	)	(Consolidated)
	)	
PJM Interconnection, L.L.C.	)	

AFFIDAVIT OF MATTHEW WHARTON
ON BEHALF OF PJM INTERCONNECTION, L.L.C.

1. My name is Matthew Wharton, PE, and my business address is 2750 Monroe Blvd., Audubon, Pennsylvania 19403. My current title is Manager, Reliability Engineering at PJM Interconnection, L.L.C. ("PJM"). I am submitting this affidavit in support of PJM's proposed revisions to the PJM Open Access Transmission Tariff ("Tariff") to comply with the Federal Energy Regulatory Commission's ("Commission" or "FERC") directives in its December 18, 2025 order[1] to establish three new transmission services for Eligible Customers seeking to take service on behalf of Co-Located Load.

2. Specifically, in this affidavit, I explain:

    - How PJM operationally carries out its key responsibilities as the "air traffic controller" of the PJM Region's high-voltage electric transmission system to ensure reliability, manage power flow, and handle emergency operations as the region's North American Electric Reliability Corporation ("NERC")-registered Reliability Coordinator, Balancing Authority, and Transmission Operator; and

[1] *PJM Interconnection, L.L.C*, 193 FERC ¶ 61,217, at PP 2, 161, 231-36 (2025).

- The operational complexities associated with Remedial Action Schemes ("RAS") and PJM's application of the applicable requirements of NERC mandatory reliability standard PRC-012-2.[2]

I. QUALIFICATIONS

3. I joined PJM in January of 2013 and was continuously employed by PJM until April 2021. I returned in January 2022 and have been continuously employed by PJM ever since. As Manager, Reliability Engineering, I am responsible for coordinating next-day and real-time operating plans between PJM, its member Transmission Owners and Generation Owners, and our neighboring entities. This function includes ensuring the real-time reliable operation of the power grid and generation connected to it, in accordance with all PJM and NERC reliability standards pertaining to the functions of Reliability Coordinator, Balancing Authority, and Transmission Operator. Prior to my role in the Reliability Engineers, I served as Manager, Transmission Planning – MAAC & South, in which I performed planning coordinator functions in a managerial role.

4. Prior to these positions in PJM's Reliability Engineering Department, I was an Associate Engineer (Electrical) in the Design Engineering department at PSEG Nuclear LLC in the Hope Creek Nuclear Power Plant, as an Engineer in the PJM – Transmission Services department, as a Sr. Engineer in the PJM – Transmission Operations department, as an Associate Director in the Guidehouse – Energy, Sustainability, and Infrastructure department, as a Reliability Engineer in the PJM – Reliability Engineering Department, as Principal Reliability Engineer – Reliability Engineering, and then as Manager, Transmission Planning – MAAC & South at PJM.

5. I hold a Bachelor of Science degree in Electrical Engineering, from The College of New Jersey, a Master of Science degree in Electrical Engineering from Drexel University, and a Master of Science degree in Engineering Management from Drexel University.

6. In addition to my formal education, I am currently a NERC Certified System Operator at the Reliability Coordinator level (Certification Number: RC201607020), PJM Certified Transmission Owner Operator (Certificate Number: PT2016080), PJM Certified Generation Dispatcher (Certificate Number: PG2016642), and a licensed Professional Engineer in the state of New Jersey (License Number: 24GE05437900).

II. PJM'S ROLE IN SYSTEM OPERATIONS

7. PJM is a Commission-approved Regional Transmission Organization that independently directs operations on the PJM Transmission System. Importantly, PJM does not physically and directly control transmission equipment, but rather acts as the "air traffic controller," coordinating and directing system operations with its Member Transmission Owners. Put

[2] *PRC-012-2 – Remedial Action Schemes*, North American Electric Reliability Corporation (Apr. 28, 2025), https://www.nerc.com/globalassets/standards/reliability-standards/prc/prc-012-2.pdf ("NERC Reliability Standard PRC-012-2").

another way, just as air traffic controllers do not own or fly the airplanes, PJM does not own or operate the generation or transmission facilities of the PJM Region.

8. Like an air traffic controller, PJM directs energy "traffic," ensuring that electricity from generators moves safely to load. PJM has decision-making authority to act and/or to direct actions to be taken by Transmission Operators, Transmission Owners, Generator Operators, Load-Serving Entities, and Purchasing-Selling Entities within its Reliability Coordinator Area to preserve the integrity and reliability of the Bulk Electric System.[3]

9. PJM is the Reliability Coordinator, Balancing Authority, and Transmission Operator for the PJM Region. First, as the federally-designated Reliability Coordinator for the PJM Region, PJM coordinates the operation of transmission and generation on a second-by-second, hour-by-hour, and day-to-day basis throughout the year. PJM must comply with reliability standards set by NERC, with oversight from FERC.

10. Second, as the region's Balancing Authority, PJM ensures electricity supply continuously matches load in real-time to reliability serve the over 67 million customers within our region. PJM's system operators maintain frequency control by directing Generator Operators to increase or lower generation output to maintain the delicate balance of supply and demand on the high-voltage electric transmission system at the standard frequency of 60 cycles per second (i.e., 60 Hertz in the United States). PJM is a centrally dispatch Balancing Authority, which uses Security Constrained Economic Dispatch that utilizes least-cost solutions while controlling active transmission constraints to ensure load is served. A reliable centrally dispatched Balancing Authority relies on Network Integration Transmission Service ("NITS") to ensure that generation is not "bottled"[4] and is deliverable to load, as Dr. Sami Abdulsalam explains in his affidavit.[5]

11. Third, as the PJM Region's Transmission Operator, PJM manages the physical transmission grid, directing power flow over 88,333 miles of transmission lines to minimize congestion and prevent equipment overload to the extent possible.

12. PJM manages the reliability of the transmission grid by maintaining an uninterrupted flow of high-voltage electricity, monitoring congestion, and by preventing and, if necessary, addressing outages and emergencies within the PJM footprint. As electricity usage changes throughout the day, PJM must balance supply and demand by telling generation how much energy to supply while simultaneously working with PJM Transmission Owners to ensure that transmission lines and facilities are functioning properly.

13. Operating the electric system is a balancing act that requires continuous monitoring of the system. From PJM's dual, fully redundant control rooms, PJM's system operators work

[3] *See* Systems Operation Division, *PJM Manual 37: Reliability Coordination*, PJM Interconnection, L.L.C. (Rev. 22, May 11, 2025), https://www.pjm.com/-/media/DotCom/documents/manuals/m37.pdf.

[4] "Bottled" in this context means a generation that cannot output the electricity it creates to the grid or is undeliverable to the grid.

[5] Affidavit of Dr. Sami Abdulsalam on Behalf of PJM Interconnection L.L.C. (Attachment B) ¶¶ 7-8.

24 hours a day, seven days a week to anticipate and respond, on a second-by-second basis, to shifts in demand for power and changes in the flow of electricity, equipment problems, weather conditions and other factors to maintain safe and reliable service while meeting customer needs for electricity when and where it's needed. System operators are responsible for directing generators to increase or lower generation to maintain the delicate balance between the supply and demand for electricity. They monitor the equipment on the transmission system (such as transmission lines, transformers) to ensure they are loaded and operated within their limits. Additionally, they monitor the transmission equipment for the "what could go wrong," also known as "contingency analysis," to ensure the system will remain secure and safe, even if something does go wrong.

14. From an Industry perspective, there are multiple efforts reviewing the Operational, Planning, and Security impacts of the large load. One of the most notable whitepapers was developed by NERC, Characteristics and Risks of Emerging Large Loads,[6] in which I am listed for supporting the development of the paper. From a high level, the operational risks include forecasting, balancing and reserves, lack of real-time coordination, stability, and power quality. Two of the NERC Whitepaper's recommendations include (i) tasking two NERC Working Groups to develop load models that can show the characteristics and risks for simulations, and (ii) to assess possible protection system impacts to the Bulk Power System. Industry has recognized and is responding to the potential and substantial impacts from large loads.[7]

III. THE OPERATIONAL COMPLEXITIES ASSOCIATED WITH REMEDIAL ACTION SCHEMES AND PJM'S APPLICATION OF NERC RELIABILITY STANDARD PRC-012-2

15. A Special Protection System ("SPS") or Remedial Action Scheme ("RAS") is designed to detect abnormal system conditions (e.g., abnormal system configuration) and to automatically take appropriate corrective action to maintain system stability, acceptable system voltages, and acceptable facility loading. The term SPS has more historical context as NERC set the industry term for these protection schemes as Remedial Action Schemes, as defined in the NERC Glossary of Terms[8] and described in PJM Manual 7.[9] Whereas "normal" protective relaying systems are typically designed to isolate faulted elements, a RAS may take actions seemingly unrelated to the cause such as the tripping of local or remote

[6] *Characteristics and Risks of Emerging Large Loads: Large Loads Task Force White Paper*, North American Electric Reliability Corporation (July 2025), https://www.nerc.com/globalassets/who-we-are/standing-committees/rstc/whitepaper-characteristics-and-risks-of-emerging-large-loads.pdf ("NERC Whitepaper").

[7] NERC Whitepaper at vii.

[8] *Glossary of Terms Used in NERC Reliability Standards*, North American Electric Reliability Corporation (Feb. 17, 2026), https://www.nerc.com/globalassets/standards/reliability-standards/glossary_of_terms.pdf ("NERC Glossary of Terms").

[9] System Planning Division Transmission Planning Department, *PJM Manual 07: PJM Protection Standards*, PJM Interconnection, L.L.C. (Rev. 5, Sep. 25, 2025), https://www.pjm.com/-/media/DotCom/documents/manuals/m07.pdf ("PJM Manual 7").

system elements (including generators), generator runback, and load shedding for the purpose of maintain system or equipment reliability.

16. A RAS should not be installed as a substitute for good system design or operating practices. PJM Manuals reflect this caution of relying on such schemes on a permanent basis. The implementation of a RAS is generally limited to temporary conditions involving the outage of critical equipment. The decision to employ a RAS should consider the complexity of the scheme and the consequences of misoperation, as well as its benefits. The use of a RAS, like any protection scheme, entails the risk that it will misoperate. However, the consequences of a RAS misoperation are often more severe than those of fault protection schemes.[10] While a RAS may be a temporary solution until the transmission system is reinforced, PJM Manuals indicate that PJM's systems and operating procedures were designed to be served by NITS, eliminating the need for RAS while ensuring generation can be dispatched to serve load.[11]

17. PJM has a well-defined process in PJM Manual 3, section 1.7 (PJM Procedure to Review Remedial Action Schemes (RAS)),[12] for new, retiring, or functional modifications to a RAS. All RAS must meet the NERC RAS definition and comply with the NERC Reliability Standard PRC-012-2, as well as other NERC Reliability Standards applicable to RAS (e.g., PRC-005-6[13]).

18. For any RAS, PJM, in its role as the Reliability Coordinator, reviews the scheme and provides feedback to the RAS-entity within four full calendar months or a schedule that is mutually agreed upon in keeping with R2 of NERC Reliability Standard PRC-012-2. The scheme will be reviewed for the need and reliability purposes. Then the owner will be provided with feedback for recommendations. If the RAS is a viable scheme, it will be documented in PJM Manual 03B: Transmission Operation Procedures (CEII). Consistent with PJM Manual 3, to achieve Reliability Coordinator (i.e., PJM) endorsement, the RAS will need to be endorsed by the following PJM Stakeholder Committees:

    a. PJM System Operator Committee
    b. PJM Relay Subcommittee (Conditional if impacting facilities 200 kV or above)
    c. PJM Operating Committee
    d. PJM Market Implementation Committee
    e. PJM Planning Committee
    f. PJM Markets and Reliability Committee

[10] *See* PJM Manual 7.

[11] *See* System Operations Division, *PJM Manual 13: Emergency Operations*, PJM Interconnection, L.L.C., section 2.3 (Rev. 97, Nov. 20, 2025), https://www.pjm.com/-/media/DotCom/documents/manuals/m13.pdf. (a Manual Load Dump Action is the last controlling action available to operators to resolve capacity or transmission issues).

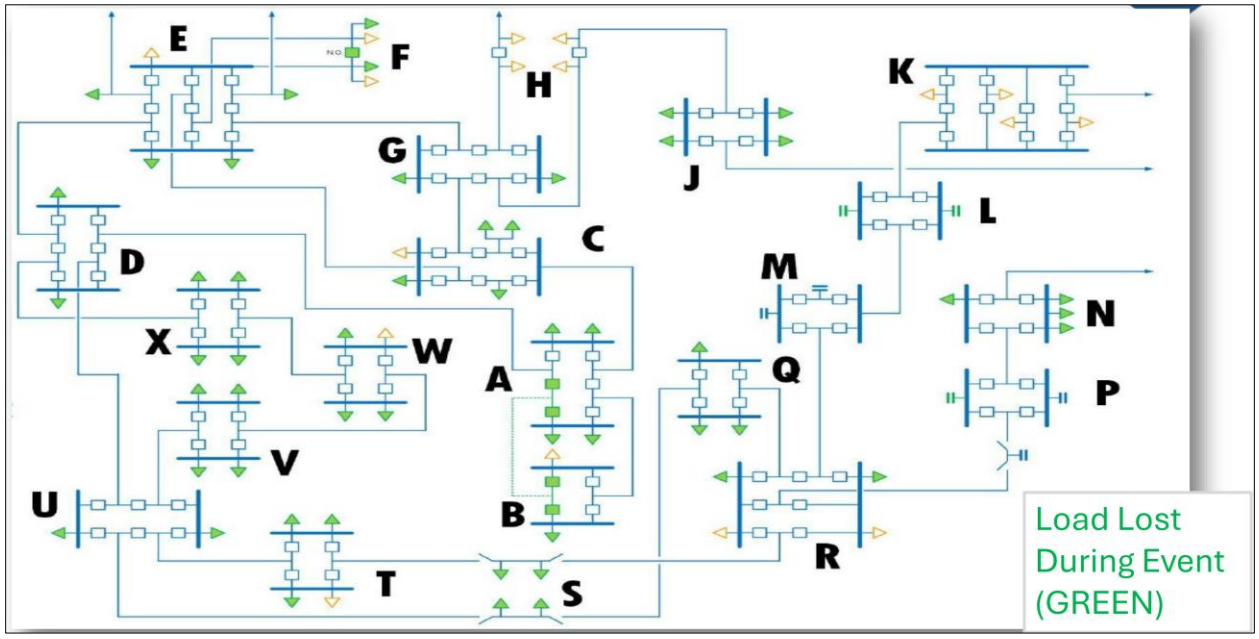
[12] Transmission Operations, *PJM Manual 03: Transmission Operations*, PJM Interconnections, L.L.C., section 1.7 (Rev. 69, Nov. 20, 2025), https://www.pjm.com/-/media/DotCom/documents/manuals/m03.pdf ("PJM Manual 3").

[13] *Standard PRC-00562 – Protection System, Automatic Reclosing, and Sudden Pressure Relaying Maintenance*, North American Electric Reliability Corporation (Apr. 28, 2025), https://www.nerc.com/globalassets/standards/reliability-standards/prc/prc-005-6.pdf.

19. To implement a RAS, PJM and Transmission Owner system operators will need to be trained prior to use within real-time operation. The training ensures operators know the conditions for which the RAS will be utilized and the actions the RAS scheme will perform. PJM operators have the responsibility for directing the arming and disarming of the RAS scheme during real-time operations. Ultimately, the PJM and Transmission Owner will need to properly screen for the contingency plus the RAS action in their respective Energy management Systems.[14]

20. The PJM transmission system is robust and constitutes a tightly coupled network. Practically, this means the load centers are electrically close to each other and the transmission system has multiple elements connecting to each other.

21. There is the possibility of interactions between RAS schemes in a tightly coupled network. As detailed from the NERC Incident Review, Considering Simultaneous Voltage-Sensitive Load Reductions,[15] a failed lightning arrestor on the 230 kV transmission system led to the loss of approximately 1,500 megawatts within the PJM region at multiple substations.[16] The diagram below illustrates the event. Although this event was not triggered by a misoperation of a RAS, the risk of having multiple RASs within a single area increases the likelihood of a misoperation.



[14] *See* PJM Manual 3.

[15] *Incident Review: Considering Simultaneous Voltage-Sensitive Load Reductions*, North American Electric Reliability Corporation (Jan. 8, 2025), https://www.nerc.com/globalassets/our-work/reports/event-reports/incident_review_large_load_loss.pdf.

[16] Matthew Gooding, *Virginia narrowly avoided power cuts when 60 data centers dropped off the grid at once*, Data Center Dynamics (Mar. 20, 2025), https://www.datacenterdynamics.com/en/news/virginia-narrowly-avoided-power-cuts-when-60-data-centers-dropped-off-the-grid-at-once/.

22. A RAS is designed for specific conditions to occur prior to activating. Since the PJM network is tightly coupled with multiple transmission lines, the RAS or multiple RASs will need to monitor and activate for a multitude of conditions. Typically, a RAS monitors one specific condition and is armed to respond to one condition. Thus, each condition would require its own RAS that can be independently armed or disarmed. This is not ideal to operate or control the system with each scheme carrying additional risk. Moreover, the transmission system is a dynamic system that is constantly changing with generation online or transmission outages. The conditions for a RAS may change based on the dynamic system conditions. As such, a pre-defined RAS may not be sufficient for all scenarios.

Similarly, with a network diagram as described above, all the interim or non-firm loads within an electrically close area may have similar violations. This could create a scenario where the loss of a facility requires reducing or dropping **all** the interim or non-firm load within that area. This quick and large change in PJM system load could cause Area Control Error ("ACE") deviations—the metric that evaluates generation to load balancing, and generator stability issues.[17] Each Balancing Authority is required to calculate a Reporting ACE. This is an important calculation that is required to be available at a minimum of 99.5% of each calendar year and a minimum accuracy of 0.001 Hz. The Reporting ACE is used to ensure the frequency of the Eastern Interconnection ("EI") is maintained. There is a potential with a "local failure or misoperation" of a RAS in PJM could impact the entire EI, depending on the amount of load that is quickly removed from the system. This is a risk identified as part of the Frequency Stability portion of the NERC Whitepaper stating: "All these issues have the potential to cause further operation of protection systems. With each protection system operation, more [Bulk Power System] equipment is taken out of service, and the possibility for cascading outages grows."[18]

23. The term "stability limits" refers to the ability of an electric system to maintain or regain an equilibrium state during normal operations or a contingency event or system disturbance. A "contingency event" refers to an unplanned outage of a system element (lines, transformers), loss of generation, sudden large load changes, or loss of other power system elements (circuit breakers, switches, reactive devices).

24. A generator is constantly matching equal but opposite forces by the system load. A sudden large loss of load within a short time frame, from the perspective of a generator, is like riding a bike uphill and having the chain snap. The pedals will speed up because the bike rider (generator) cannot instantaneously respond to the chain snapping (loss of load). If the rider was working hard, they could catapult over the handlebars and get injured (damage). There is a similar response from nearby generators where there is a sudden loss of large load. The generator will speed up and if severe enough, it could cause mechanical stress to generator components or damage to the machine.

[17] ACE is the "instantaneous difference between a Balancing Authority's net actual and scheduled interchange, taking into account the effects of Frequency Bias and correction for meter error." *See* NERC Glossary of Terms at 54 of PDF (definition of Area Control Error).

[18] NERC Whitepaper at 25.

25. There is one scenario where a RAS would be overwhelmingly beneficial and would have a minimal impact on the overall grid. A RAS will be required for the loss of the Co-Located Generating Facility. In this instance, PJM would expect the RAS to actuate on the loss of the Co-Located Generating Facility and the load served by Non-Firm Contract Demand Transmission Service or Interim NITS will automatically be removed from the system by the RAS scheme. In other words, after the co-located generator is offline, only the NITS or Firm Contract Demand Transmission Service will remain connected and served by PJM. At that point, PJM could evaluate if additional non-firm load could be supported after the loss of generation occurs.

26. There are some impacts that are outside of the operations that should be noted as well. The first is for the RAS-entity, as defined in the NERC Reliability Standard PRC-012-2. The RAS-entity, which will typically but not always (e.g. in the case that the Eligible Customer contracts out the RAS) be the Eligible Customer, will be responsible for meeting NERC compliance. This includes participating in analyzing the RAS operational performance after a RAS operation or failure, develop/implement Corrective Action Plans, and periodically perform functional testing. Finally, the Planning Coordinator, in collaboration with the RAS-entity, will need to perform an evaluation of **each** RAS within its area.

27. This concludes my Affidavit.

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

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Large Loads Co-Located at Generating Facilities	)	AD24-11-000
Constellation Energy Generation, LLC	)	EL25-20-000
	)	(Consolidated)
v.	)	
PJM Interconnection, L.L.C.	)	

VERIFICATION OF MATTHEW WHARTON, PE

I, Matthew Wharton, PE, pursuant to 28 U.S.C. § 1746, state, under penalty of perjury, that I am the Matthew Wharton referred to in the foregoing "Affidavit of Matthew Wharton, PE on Behalf of PJM Interconnection, L.L.C.," that I have read the same and am familiar with the contents thereof, and that the facts set forth therein are true and correct to the best of my knowledge, information, and belief.

/s/ *Matthew Wharton*
Matthew Wharton
Manager
Reliability Engineering
PJM Interconnection, L.L.C.

Executed on: February 23, 2026

Attachment D

Affidavit of Timothy Horger,
Senior Director, Forward Market Operations

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

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Linden VFT, LLC	)	
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Utilities, Division of Cleveland Public Power	)	
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	)	
Large Loads Co-Located at Generating	)	AD24-11-000
Facilities	)	
	)	
Constellation Energy Generation, LLC	)	EL25-20-000
	)	(Consolidated)
v.	)	
	)	
PJM Interconnection, L.L.C.	)	

AFFIDAVIT OF TIMOTHY HORGER,
ON BEHALF OF PJM INTERCONNECTION, L.L.C.

1. My name is Timothy Horger. I am the Senior Director of Forward Market Operations for PJM Interconnection, L.L.C. ("PJM"). My business address is 2750 Monroe Boulevard, Audubon, Pennsylvania 19403. I am submitting this affidavit in support of PJM's proposed revisions to the PJM Open Access Transmission Tariff ("Tariff") to comply with the Federal Energy Regulatory Commission's ("Commission" or "FERC") directives in its December 18, 2025 order[1] to establish three new transmission services for Eligible Customers seeking to take transmission service on behalf of Co-Located Load.

2. Specifically, in this affidavit, I provide support for an effective date of June 1, 2029, for the Tariff revisions relating to the three new transmission services for Eligible Customers seeking to take transmission service on behalf of Co-Located Load.

I. QUALIFICATIONS

3. I joined PJM in 2002. In my current role, I oversee PJM's Financial Transmission Rights, Capacity, and Demand Side Markets, including the design, development, and execution of

[1] *PJM Interconnection, L.L.C.*, 193 FERC ¶ 61,217 (2025) ("December 18, 2025 Order").

those markets, the facilitation of PJM stakeholder initiatives related to those markets, and the professional development of PJM Staff who work in the departments administering those markets. I am also responsible for overseeing all activities associated with the Market Efficiency Economic Planning process at PJM. In addition, I am responsible for efforts associated with Strategic Market initiatives.

4. Prior to my current position, I served as Director of Market Operations and also held manager positions in the Interregional Market Operations and Market Simulation groups. Prior to my employment at PJM, I worked as a Power Systems and Control Engineer at Laser Technology, Inc.

5. I hold a Bachelor of Science degree in Electrical Engineering from Drexel University, and a Masters degree in Systems Engineering from Penn State Great Valley School of Graduate Professional Studies.

II. PJM'S PROPOSED EFFECTIVE DATE OF JUNE 1, 2029, IS APPROPRIATE FOR IMPLEMENTATION OF THE THREE NEW TRANSMISSIONS SERVICES.

6. The forward nature of PJM's capacity market, the Reliability Pricing Model ("RPM"), directly informs PJM's proposed effective date of June 1, 2029, for the three new transmission services described in the December 18, 2025 Order.

7. PJM's RPM auctions procure capacity for future Delivery Years based on expected demand for that given Delivery Year. The expected demand is, in turn, based on the PJM Load Forecast for that Delivery Year. It is important that the PJM Load Forecast includes all load expecting to be served for the relevant RPM Auction Delivery Year. The three new transmission services for Eligible Customers seeking to take transmission service on behalf of a Co-Located Load will significantly impact the PJM Load Forecast and expected demand, which will, in turn, have significant implications for the RPM.

8. The amount of capacity PJM's RPM procures has significant impacts on both physical and financial expectations. For example, eligible capacity must demonstrate that it can be physically "deliverable" to the PJM system before the RPM Auction is conducted. Additionally, in times when supply is tight and demand is growing, an increase in the amount of demand can significantly impact the auction clearing price.

9. In PJM, one of the ways in which deliverability is demonstrated is through Capacity Interconnection Rights ("CIRs") that are verified for each Capacity Resource. This deliverability concept ensures that any capacity cleared in an RPM auction is reliable and accountable. Under PJM's Capacity Performance construct, each Capacity Resource that clears an RPM auction is (except in very limited circumstances) required to be available, and is subject to severe penalties if not available.

10. In light of the interaction between the RPM and the impact on expected demand that Eligible Customers taking the three new transmissions services on behalf of Co-Located Load will have, PJM has proposed an effective date of June 1, 2029.

11. The RPM is premised primarily on a three-year forward Base Residual Auction ("BRA"), and while it is currently operating under a compressed auction schedule, PJM has been on track to return to a normal three-year forward auction for its capacity market by May 2027 (for the 2030/2031 Delivery Year). The BRA for the 2027/2028 Delivery Year took place in December 2025.

12. The next BRA is currently scheduled for June 30, 2026, and will be conducted for the 2028/2029 Delivery Year beginning June 1, 2028. Importantly, as of today, the PJM Load Forecast for the 2028/2029 Delivery Year BRA is already determined, and eligible capacity has already been determined for the 2028/2029 Delivery Year BRA.

13. Thus, it is no longer possible to update the PJM Load Forecast, update the RPM auction input parameters (planning parameters), and implement necessary changes before the 2028/2029 RPM BRA is conducted, even if the Commission were to theoretically approve the proposed changes today. Accordingly, any new load or Capacity Resource coming online or, for example, existing generation delisting of CIRs to allow a Capacity Resource to leave the market and dedicate capacity to serving a Co-Located Load affected by the proposed changes associated with this filing would not be accounted for in the RPM Auction planning parameters or the PJM Load Forecast for the 2028/2029 Delivery Year BRA.

14. The next available BRA that can include the updated demand and potential new or removed capacity (including accounting for any change in CIRs) is the BRA for the 2029/2030 Delivery Year starting June 1, 2029. The 2029/2030 Delivery Year BRA is scheduled to take place in December 2026, and the expected demand and eligible capacity for the 2029/2030 Delivery Year have not yet been determined. Thus, because this would be the first BRA in which the effects of these new transmission services could be considered (including procuring necessary capacity for firm transmission services), PJM is proposing a June 1, 2029, implementation date for the three new transmission services.

15. It is unlikely that generation associated with these three new transmission service products would be included in the intervening, incremental RPM auctions. Incremental Auctions are conducted to allow for *replacement* resource procurement, along with increases and decreases in resource commitments due to reliability requirement adjustments. These adjustments are typically small.

16. Second, implementing the three new transmission services will necessitate modifications to the PJM core Markets and Operations systems, including modifying the Intermediate and Real-Time Security Constrained Economic Dispatch ("IT SCED" and "RT SCED"), Day-Ahead Market software, and PJM dispatch tools. Two of the new transmission service products, specifically Interim NITS and Non-Firm Contract Demand Transmission Service, will be among the first to be curtailed under certain conditions. Curtailment can affect prices and dispatch instructions, for which automation will be necessary to avoid non-optimal, untimely, and inefficient outcomes. Development and implementation of changes to these core systems is dependent on design, vendor availability, costs, and

managing competing priorities that include other Commission-directed initiatives. Given the significant uncertainty surrounding these novel services, PJM cannot initiate the necessary work (including software changes) until the Commission's final order in the paper hearing is issued in this docket, and the specific rates, terms, and conditions of these new transmission services are correspondingly finalized.

17. Finally, it is unlikely that Eligible Customers and associated generation will be online and taking service under any of the new transmission services before June 1, 2029, as the process of getting through the interconnection queue, being constructed, and becoming operational will likely be more than three years, particularly in light of current supply chain issues, Transmission Owner and PJM Interconnection queue requirements, and RPM auction timelines.[2] There is a known challenge to procure equipment, such as turbines,[3] and it is not currently expected that a generator could be physically built in less than three years.[4] The earliest expected Delivery Year a new generator can participate in an RPM BRA or an existing capacity resource can delist, which includes required interconnection modified studies, is for the 2029/2030 Delivery Year.

18. This concludes my Affidavit.

[2] Notably, however, as the Commission recently reiterated, for purposes of the RPM, "Capacity prices are intended to send longer-term investment signals to which developers respond over time[]" and "delays in the interconnection queue, compressed auction schedules, and supply chain issues" do not render RPM auction results unjust and unreasonable. *PJM Interconnection, L.L.C.*, 194 FERC ¶ 61,049, at P 50 (2025) (citing *PJM Interconnection, L.L.C.*, 126 FERC ¶ 61,275, at P 150 (2009) ("RPM was designed to provide long-term forward price signals . . . .")).

[3] Jared Anderson, *US gas-fired turbine wait times as much as seven years; costs up sharply*, S&P Global (May 20, 2025), https://www.spglobal.com/energy/en/news-research/latest-news/electric-power/052025-us-gas-fired-turbine-wait-times-as-much-as-seven-years-costs-up-sharply.

[4] *See, e.g.*, The Brattle Group, et al., *Brattle 2025 CONE Report for PJM*, PJM Interconnection, L.L.C. (Apr. 9, 2025), https://www.pjm.com/-/media/DotCom/committees-groups/committees/mic/2025/20250411-special/item-1-02-revised-cone-report-final.pdf.

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

PJM Interconnection, L.L.C.	)	Docket Nos. EL25-49-000
PJM Interconnection, L.L.C.	)	EL25-49-001
Allegheny Electric Cooperative, Inc.	)	
American Transmission Systems, Incorporated	)	
Atlantic City Electric Company	)	
Baltimore Gas and Electric Company	)	
Delmarva Power & Light Company	)	
Duke Energy Ohio, Inc.	)	
Duke Energy Kentucky, Inc.	)	
East Kentucky Power Cooperative, Inc.	)	
Essential Power Rock Springs, LLC	)	
Hudson Transmission Partners, LLC	)	
Jersey Central Power & Light Company	)	
Mid-Atlantic Interstate Transmission, LLC	)	
Neptune Regional Transmission System, LLC	)	
Old Dominion Electric Cooperative	)	
PECO Energy Company	)	
PPL Electric Utilities Corporation	)	
Potomac Electric Power Company	)	
Public Service Electric and Gas Company	)	
Rockland Electric Company	)	
Trans-Allegheny Interstate Line Company	)	
Transource West Virginia, LLC	)	
UGI Utilities, Inc.	)	
Monongahela Power Company	)	
The Potomac Edison Company	)	
Commonwealth Edison Company	)	
Commonwealth Edison Company of Indiana, Inc.	)	
The Dayton Power and Light Company	)	
AEP Appalachian Transmission Company, Inc.	)	
AEP Indiana Michigan Transmission Company, Inc.	)	
AEP Kentucky Transmission Company, Inc.	)	
AEP Ohio Transmission Company, Inc.	)	
AEP West Virginia Transmission Company, Inc.	)	
Appalachian Power Company	)	
Indiana Michigan Power Company	)	
Kentucky Power Company	)	
Kingsport Power Company	)	
Ohio Power Company	)	

Wheeling Power Company Duquesne Light Company Virginia Electric and Power Company Linden VFT, LLC City of Cleveland, Department of Public Utilities, Division of Cleveland Public Power City of Hamilton, OH Southern Maryland Electric Cooperative, Inc. Ohio Valley Electric Corporation AMP Transmission, LLC Silver Run Electric, LLC NextEra Energy Transmission MidAtlantic Indiana, Inc. Wabash Valley Power Association, Inc. Keystone Appalachian Transmission Company	)	
Large Loads Co-Located at Generating Facilities	)	AD24-11-000
Constellation Energy Generation, LLC	)	EL25-20-000
	)	(Consolidated)
v.	)	
PJM Interconnection, L.L.C.	)	

VERIFICATION OF TIMOTHY HORGER

I, Timothy Horger, pursuant to 28 U.S.C. § 1746, state, under penalty of perjury, that I am the Timothy Horger referred to in the foregoing "Affidavit of Timothy Horger on Behalf of PJM Interconnection, L.L.C.," that I have read the same and am familiar with the contents thereof, and that the facts set forth therein are true and correct to the best of my knowledge, information, and belief.

/s/ *Timothy Horger*
Timothy Horger
Senior Director
Forward Market Operatins
PJM Interconnection, L.L.C.

Executed on: February 23, 2026

CERTIFICATE OF SERVICE

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

Dated at Washington, D.C., this 23rd day of February 2026.

/s/ Ryan J. Collins
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