

September 20, 2021

Via eTariff Filing

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Re: PPL Electric Utilities Corporation, PJM Interconnection, L.L.C.
Docket No. ER21-2282-001

Dear Secretary Bose:

On June 30, 2021, the PJM Transmission Owners, acting through the PJM Consolidated Transmission Owners Agreement (“CTOA”), submitted a filing under Section 205 of the Federal Power Act (“FPA”) proposing to revise the PJM Interconnection, L.L.C. (“PJM”) Open Access Transmission Tariff (“PJM Tariff”) to provide the PJM Transmission Owners with the option to fund the capital cost of Network Upgrades necessary to accommodate generator interconnections (“Proposed Revisions”).¹ The Proposed Revisions would allow the PJM Transmission Owners the opportunity to earn a return of and on the costs of Network Upgrades that are necessary to interconnect generation resources to the PJM Transmission System. As demonstrated in the June 30 Filing, the Proposed Revisions are just and reasonable and comport with judicial and Federal Energy Regulatory Commission (“Commission”) precedents. The PJM Transmission Owners requested that the Commission accept the Proposed Revisions effective August 30, 2021.

On August 20, 2021, Commission Staff requested that the PJM Transmission Owners provide additional information regarding certain aspects of their June 30 Filing (the “August 20 Deficiency Letter”). The PJM Transmission Owners submit this response to Commission Staff’s questions contained in the August 20 Deficiency Letter.² The PJM Transmission Owners

¹ *PPL Elec. Corp., et al.*, PJM Tariff Revisions to Implement Transmission Owners’ Funding of Network Upgrades, Docket No. ER21-2282-000 (filed June 30, 2021) (“June 30 Filing”).

² Pursuant to Order No. 714, this filing is submitted by PJM on behalf of the PJM Transmission Owners as part of an XML filing package that conforms with the Commission’s regulations. PJM has agreed to make all filings on behalf of the PJM Transmission Owners in order to retain administrative

respectfully request that the Commission approve the Proposed Revisions without hearing, modification or condition, to be effective on August 30, 2021 as originally requested in the June 30 Filing. To the extent necessary, the PJM Transmission Owners respectfully request waiver of any regulation necessary for the Commission to accept the Proposed Revisions as filed and grant the requested effective date.

I. Response to August 20 Deficiency Letter

Question 1:

The PJM TOs explain that under the existing funding model in PJM, the generator provides upfront capital for the Network Upgrades and this capital is treated as contribution that goes into the interconnecting utility's rate base at \$0. The PJM TOs explain further that once the Network Upgrade is constructed and placed into service, the utility is able to recover its operating and maintenance expenses from network transmission customers. The PJM TOs clarify that because the Network Upgrades go into the utility's rate base at \$0, the utility is unable to earn a return on those facilities. PJM TOs state that under the Tariff, and pursuant to the CTOA, the PJM TOs have the unilateral right to file a section 205 filing to change provisions affecting their transmission revenue requirement recovery or transmission rate design. Specifically, the PJM TOs explain the Tariff provides PJM TOs with:

“the exclusive and unilateral rights to file pursuant to Section 205 of the Federal Power Act and the [Commission's] rules and regulations thereunder for any changes in or relating to the establishment and recovery of the Transmission Owners' transmission revenue requirements or the transmission rate design under the PJM Tariff.

- a. Please explain how a new section to the PJM Tariff and a new pro forma NUFA that establishes a Network Upgrade Charge for interconnection service to collect a rate of return on Network Upgrades represent “changes to or establishment of transmission revenue requirements” or “transmission rate design.”*

Response to Question 1a:

In connection with the formation of PJM as an Independent System Operator in 1997,³ the Court of Appeals for the District of Columbia made very clear that absent a voluntary waiver, the PJM Transmission Owners retain all of their respective rights under the FPA as public utility

control over the PJM Tariff. Thus, the PJM Transmission Owners have requested PJM submit this Response in the eTariff system as part of PJM's electronic Intra PJM Tariff.

³ See *Pennsylvania-New Jersey-Maryland Interconnection, et al.*, 81 FERC ¶ 61,257, order on reh'g, 92 FERC ¶ 61,282 (2000), vacated in part sub nom., *Atl. City Elec. Co. v. FERC*, 295 F.3d 1 (D.C. Cir. 2002).

transmission owners to make Section 205 filings relating to rate design changes with respect to services provided by their own assets. The Court explicitly held that “[w]hen FERC attempts to deprive utilities of their rights ‘to initiate rate design changes with respect to services provided by their own assets[,]’ FERC has exceeded its jurisdiction.”⁴ Thus, the PJM Transmission Owners need not prove they retained the rights to file the Proposed Revisions; those rights are granted by statute. To successfully challenge the PJM Transmission Owners’ rights to file the Proposed Revisions, protesters or the Commission would have to show that the PJM Transmission Owners expressly waived those rights. There is, however, no evidence supporting such a showing. In particular, there are no provisions in any of the PJM governing documents suggesting they agreed to such a waiver. In fact, the relevant documents demonstrate the contrary.

As discussed in the June 30 Filing, Section 9.1 of the PJM Tariff, Part I provides the PJM Transmission Owners with the express authority to make changes to any section of the PJM Tariff that relates to transmission revenue requirements, cost allocation or cost recovery.⁵ The purpose of the Proposed Revisions is to provide the PJM Transmission Owners with the option to fund or finance Network Upgrades and recover the costs for those facilities by establishing and recovering a revenue requirement for them. Network Upgrades are transmission facilities. They are needed to maintain reliability of the transmission system while interconnecting a particular generator to the transmission system but also will be used to provide transmission service to network customers. The fact that the Network Upgrade Charge will be paid for by interconnection service customers under the Network Upgrade Funding Agreement (“NUFA”)

⁴ *Atl. City Elec. Co., et al., v. FERC*, 329 F.3d 856 at 859 (D.C. Cir. 2003) (“*Atlantic City Elec. Co. I*”). See also *Atl. City Elec. Co.*, 295 F.3d 1 (2002) (rejecting claims that the Commission has authority to allocate Section 205 filing rights between PJM and the PJM Transmission Owners). As the Court stated in *Atlantic City Elec. Co. II*:

We clearly stated that ‘[w]hile an ISO may have certain section 205 rights, there is simply no denying the utility petitioners’ section 205 rights.’ In an opinion relying upon the clear words of the statute, we held that FERC cannot deny ‘the petitioners their rights provided for by a statute enacted by both houses of Congress and signed into law by the [p]resident.’ Lest there be any doubt, we so hold once more. When FERC attempts to deprive the utilities of their rights ‘to initiate rate design changes with respect to services provided by their own assets [,]’ FERC has exceeded its jurisdiction. We hereby qualify and order the enforcement of our mandate. FERC is to vacate the portions of its opinion on rehearing which are inconsistent with our construction of its jurisdiction.

Atlantic City Elec. Co. II, at 858-59 (internal citations omitted).

⁵ June 30 Filing, Transmittal Letter at 20-21. See also Motion for Leave to Answer and Answer of the PJM Transmission Owners at 33-36 (Aug. 14, 2021) (discussing the PJM Transmission Owners’ right under Section 9.1 of the PJM Tariff to submit the Proposed Revisions).

does not change the PJM Transmission Owners' exclusive right under Section 205 of the FPA to propose the changes.⁶ Interconnection service is part and parcel of transmission service.⁷

The PJM Transmission Owners' Section 205 filing rights are also defined in the Consolidated Transmission Owners Agreement ("CTOA").⁸ The CTOA is clear that the PJM Transmission Owners have retained all of the relevant Section 205 filing rights to submit the Proposed Revisions. Section 7.1.1 of the CTOA provides that each PJM Transmission Owner has the "exclusive" right to make Section 205 filings to establish or change its transmission revenue requirement for services provided under the PJM Tariff with respect to its own Transmission Facilities.⁹ The CTOA definition of Transmission Facilities covers all PJM Transmission Owner transmission facilities in PJM and does not distinguish between facilities initially built for interconnection or other purposes.¹⁰ Section 7.1.1 says "services" meaning all

⁶ The PJM Transmission Owners have made similar changes to other parts of Section 217 of the PJM Tariff that governs interconnection service. For example, in 2008, the PJM Transmission Owners proposed changes to Section 217.3 of the PJM Tariff to modify the allocation of costs to interconnection customers associated with accelerated regional transmission projects. *PJM Transmission Owners*, 125 FERC ¶ 61,021 at P 35 (2008) (citations omitted) ("Section 9.1 of the PJM OATT gives Transmission Owners the exclusive right to make section 205 filings 'for any changes in or relating to the establishment and recovery of the Transmission Owners' transmission revenue requirements or the transmission rate design under the PJM Tariff.'). The Commission found those earlier amendments to be within the "exclusive" Section 205 filings rights of the PJM Transmission Owners as defined by Section 9.1 of the PJM Tariff. *Id.*

⁷ See e.g., *Standardization of Generator Interconnection Agreements & Procedures*, Order No. 2003, FERC Stats. & Regs. Preambles ¶ 31,146, PP 9, 12, 20 (2003) (cross-referenced at 104 FERC ¶ 61,103), Order No. 2003 at PP 9, 12, 20 (interconnection is a critical component of open access transmission service); *Pac. Gas and Elec. Co.*, 115 FERC ¶ 61,193 at P 36 (2006) ("Interconnection service, the Commission has previously found, is an element of transmission service; that is, interconnection is part and parcel of transmission of electric energy in interstate commerce, and thus interconnection service is part and parcel of jurisdictional transmission service") (subsequent history omitted); *Cent. Maine Power Co.*, 90 FERC ¶ 61,214 at 61,707 (2000) ("[W]e note that interconnection is an element of transmission service."); *Tenn. Power Co.*, 90 FERC ¶ 61,238 at 61,761, *reh'g dismissed*, 91 FERC ¶ 61,271 (2000).

⁸ Consolidated Transmission Owners Agreement, Rate Schedule FERC No. 42.

⁹ CTOA § 7.1.1 (emphasis added) ("Each Party shall have the exclusive right to file unilaterally at any time pursuant to Section 205 of the Federal Power Act to **establish or change the transmission revenue requirement for services provided under the PJM Tariff with respect to its Transmission Facilities** (regardless of whether such revenue requirement is used to support rates and charges for delivery within its Zone or outside its Zone).").

¹⁰ CTOA § 1.27 defines Transmission Facilities as follows:

Transmission Facilities shall mean those facilities that: (i) are within the PJM Region; (ii) meet the definition of transmission facilities pursuant to FERC's Uniform System of Accounts or have been classified as transmission facilities in a ruling by FERC addressing such facilities; and (iii) have been demonstrated to the satisfaction of PJM to be integrated

services and not just some services provided using Transmission Facilities. Importantly, the denial of a right to earn a return on a transmission facility directly affects the revenue requirement.¹¹

Section 7.1.3 also states that each PJM Transmission Owner has the exclusive right to file for changes in rates to recover the costs of Transmission Facilities within its own Zone.¹² That cost recovery right includes the right to earn a return on capital. Section 7.5.1(iv) also makes clear that if the PJM Tariff is changed, such as when PJM made changes to comply with the requirements of Order No. 2003, the PJM Transmission Owners retain all of their Section 205 rights with respect to the recovery of the costs of their Transmission Facilities, again without limitation or condition for particular forms of service.¹³

The allocation of Section 205 rights between PJM and the PJM Transmission Owners was negotiated with PJM in the wake of the Court's *Atlantic City* decision. The Commission does not have the statutory authority to modify the allocation of Section 205 rights, for the reasons discussed by the Court in *Atlantic City*.¹⁴ Section 7.6 of the CTOA includes specific

with the Transmission System of the PJM Region and integrated into the planning and operation of such to serve the power and transmission customers within such region, regardless of whether the facilities are listed in the PJM Designated Facilities List contained in the PJM Manual of Transmission Operations or successor thereto.

¹¹ Currently, the PJM Transmission Owners recover their operation and maintenance (“O&M”) expenses for Network Upgrades as part of their revenue requirements. Recovery of the Network Upgrade Charge as proposed by the PJM Transmission Owners is no different from the PJM Transmission Owners’ recovery of O&M expenses associated with Network Upgrades. Just as they have the right to recover the cost of operating these facilities, they have the right to file to earn a return on these facilities.

¹² CTOA § 7.1.3.

¹³ CTOA § 7.5.1(iv). It has been suggested that the Proposed Revisions involve compensation for “risk” and not cost recovery or rate design. This is not correct. If the PJM Transmission Owners are required to build, own, and operate Transmission Facilities without a return, it would directly affect their revenue requirement and lower the overall return earned on all of their owned assets devoted to utility service. As discussed in response to Questions 2 and 3, the issue in this proceeding is not just about “risk,” it includes the level of cost recovery and the amount of compensation to which the PJM Transmission Owners are entitled in exchange for the utility services they provide using transmission facilities that they own and operate. See June 30 Filing, Transmittal Letter at 11-12 (citing judicial precedents recognizing that under the regulatory compact, regulated utilities are entitled to earn a return in exchange for utility service provided to customers using facilities that they own and operate.).

¹⁴ In fact, the *Atlantic City* settlement not only includes a specific *Mobile-Sierra* clause protecting that allocation of filing responsibility, but provided that the *Mobile-Sierra* clause be included in the PJM Tariff. See PJM Tariff, Part I, Section 9.4 (providing that “the FERC’s right to change Sections 9.1 through 9.4 shall be limited to the maximum extent permissible by law and that any such change shall be in accordance with the *Mobile-Sierra* public interest standard applicable to fixed rate agreements.”) As the Commission recognized in approving the *Atlantic City* settlement, that *Mobile-Sierra* clause binds the Commission. See *Pennsylvania-New Jersey-Maryland*, 108 FERC ¶ 61,032 at P 7 (2004) (“We also reject

procedures for PJM to challenge the PJM Transmission Owners' assertion of filing rights in specific cases.¹⁵ PJM did not contest the right of the PJM Transmission Owners to make this Section 205 filing pursuant to the procedures in Section 7.6, and the time period for any such challenge has expired.

Finally, the PJM CTOA already provides the PJM Transmission Owners with the right to finance their facilities and recover the costs for those facilities. Under Section 5.2 of the CTOA, the PJM Transmission Owners expressly reserved the right to finance all of their Transmission Facilities in PJM. Section 5.2 states in relevant part that each PJM Transmission Owner: "shall have the right to build, *finance*, own, acquire...all or any part of its assets, including any Transmission Facilities."¹⁶ The Section 205 filing in this proceeding seeks to conform the funding rules for Transmission Facilities constructed to accommodate generator interconnections with the rights they have explicitly retained in the CTOA.

The PJM Transmission Owners were under no obligation to enforce these rights before they believed it was necessary.¹⁷ They are enforcing their rights to finance Network Upgrades now because, as demonstrated in the June 30 Filing and in response to Question 3, the number of generator interconnections and related transmission expenditures has exploded in recent years. To deny the PJM Transmission Owners the ability to finance and earn a return on Network Upgrades would disregard the explicit language in CTOA Section 5.2, would be contrary to the Commission's decision in the MISO Remand proceedings, and, as noted in the June 30 Filing, would be contrary to Order No. 2003, which gives transmission owners the option to finance these facilities.¹⁸

ODEC's assertion that the *Mobile-Sierra* provision set forth in the Settlement Agreement should apply only to the Settling Parties and to the Commission, acting *sua sponte* on behalf of those parties, but should not otherwise apply to proceedings initiated by or on behalf of non-parties. As we recently indicated in *Public Utilities Commission of the State of California, et al.*, 105 FERC ¶ 61,182 at P 50 (2003), there is no Commission or court precedent that supports a finding that a non-signatory may unilaterally seek changes to a *Mobile-Sierra* "public interest" contract under the "just and reasonable" standard of review.").

¹⁵ CTOA § 7.6. *See also* PJM Tariff, Part I, Section 9.3 (setting forth the procedures for resolving disputes regarding the filing rights of PJM and the PJM Transmission Owners).

¹⁶ CTOA § 5.2 (emphasis added).

¹⁷ PJM's Order No. 2003 compliance filing in Docket No. ER04-457 sought to continue the use of Participant Funding that was established when the Commission approved PJM as an RTO (*PJM Interconnection, LLC, et al.*, 96 FERC ¶ 61,061 (2001)). *See PJM Interconnection, LLC, Tariff Revisions to the PJM Tariff to Comply with Order No. 2003*, Docket No. ER04-457 (filed Jan. 20, 2004). The period between 2001 and 2004 also represented a period of an ongoing dispute over the PJM Transmission Owners' Section 205 filing rights that was ultimately resolved in July 2004. *Pennsylvania-New Jersey-Maryland Interconnection, et al.*, 108 FERC ¶ 61,032 (2004).

¹⁸ June 30 Filing, Transmittal Letter at 4. It has been argued that Order No. 2003 and the language included in the *pro forma* LGIA implicitly assumed that transmission owners would be able to

Question 2:

The PJM TOs state that the Proposed Revisions are just and reasonable because they will provide the PJM TOs with a rate of return that would compensate them for risks and costs associated with the installation, ownership, and operation of Network Upgrades. Specifically, the PJM TOs state they must assume risks related to operational and safety, reliability and cybersecurity compliance, environmental, weather and climate, and outage coordination for the Network Upgrades. The PJM TOs provide examples of certain penalties or liability charges related to Network Upgrades that may be unrecoverable through rates.

a. Please explain and provide support for how the proposed return on equity to an initial capital investment in Network Upgrades under the Proposed Revisions is the appropriate return necessary to compensate for the risks the PJM TOs describe as associated with owning and operating Network Upgrades.

Response to Question No. 2a:

For the calculation of the Network Upgrade Charge in the *pro forma* NUFA, the PJM Transmission Owners propose to use a formula rate template that takes data and inputs from their respective formula rate templates under Attachment H of the PJM Tariff, including the Commission-approved return on equity (“ROE”) component.¹⁹ The PJM Transmission Owners’ proposal to use the Commission-approved ROE in their formula rate templates for the calculation of the return on the Network Upgrades is just and reasonable and consistent with Commission precedent. In fact, the PJM Transmission Owner’s proposal adopts the same methodology used by MISO and the MISO Transmission Owners to calculate their Facility Service Charge under their *pro forma* Facility Service Agreement (“FSA”) approved by the Commission in Docket No. ER20-359.²⁰ In that proceeding, the Commission found it just and reasonable to apply the Commission-authorized, generally applicable ROE used to calculate the transmission rates of the MISO Transmission Owners in developing their Facility Charge under the MISO *pro forma* FSA.²¹ The Commission reached similar conclusions in approving network

finance these facilities only where the costs are rolled into their transmission service rates. The relevant provision adopted in the generic rule makes no such limitation and cannot be modified after the fact. Moreover, the right to finance such facilities bears no logical relationship to which particular customer pays for them. Finally, as noted in the June 30 Filing, it was PJM that proposed the use of Participant Funding for Network Upgrades in its Order No. 2003 compliance filing. *See* June 30 Filing, Transmittal Letter at 5. Denying the PJM Transmission Owners the right to earn a return based on PJM’s use of Participant Funding denies them due process of law.

¹⁹ *See* June 30 Filing, Transmittal Letter at 25-26.

²⁰ *See, e.g., Midcontinent Indep. Sys. Operator, Inc.* 171 FERC ¶ 61,075 PP 35, 49 (2020) (“April 2020 MISO FSA Order”) (finding that the network upgrade charge that uses the MISO Transmission Owners’ generally applicable ROE to be just and reasonable), *reh’g order*, 173 FERC ¶ 61,037 (2020).

²¹ *April 2020 MISO FSA Order*, 171 FERC ¶ 61,075 at PP 35, 49. The Commission’s order in Docket No. ER20-359 relies on a previous order that approved use of a formula rate that used the Commission-approved transmission ROE for the MISO Transmission Owner to calculate the facility charge. *Midcontinent Indep. Sys. Operator, Inc., & ITC Midwest LLC*, 154 FERC ¶ 61,187 PP 6, 49

upgrade charges in MISO prior to adopting the *pro forma* FSA as well.²² Specifically, the Commission found it appropriate for the MISO Transmission Owner to recover a return of its capital invested in the Network Upgrade and a return on that capital. The Commission also approved use of a weighted cost of capital that included the “Commission-approved rate of return for use in its transmission formulas.”²³ Rather than developing a new methodology for the Commission’s consideration, the PJM Transmission Owners propose to use the same methodology to develop the weighted cost of capital for the Network Upgrade Charge in the *pro forma* NUFA because the Commission has already found that method to be just and reasonable for the MISO Transmission Owners. There are no material differences between the MISO Transmission Owners and the PJM Transmission Owners with respect to this issue that would support a different outcome.

Using the Commission-approved ROE for their transmission formula rates is also appropriate and just and reasonable because Network Upgrades are transmission facilities. Owning and operating Network Upgrades presents the same risks and challenges as owning and operating the other transmission facilities included in each PJM Transmission Owner’s rate base.²⁴ In his Affidavit submitted with the June 30 Filing, Mr. David Weaver described in detail the risks associated with owning and operating Network Upgrades, including operational and safety risks, reliability and cybersecurity compliance risks, environmental risks, weather and climate risks, and outage coordination risks.²⁵ In the Supplemental Testimony of Seabron Adamson of Charles River Associates submitted as Attachment A to this Response (the “Supplemental CRA Affidavit”),²⁶ Mr. Adamson explains that Network Upgrades are no different from other transmission facilities and have the same risk characteristics and profiles as the other transmission assets owned and operated by the PJM Transmission Owners.²⁷

(2016) (“*ITC Midwest*”) (approving ITC Midwest’s proposal to calculate the monthly revenue requirement using the “Commission-approved return on equity for ITC Midwest” and noting that “the return on equity used to calculate the facilities charge is taken directly from the ITC Midwest Attachment O Formula Rate, and is the Commission-authorized, generally applicable return on equity used to calculate the transmission rates of MISO Transmission Owners.”), *reh’g denied*, 155 FERC ¶ 61,248 (2016).

²² See, e.g., *ITC Midwest, reh’g denied*, 154 FERC ¶ 61,101 at P 49; *Midcontinent Indep. Sys. Operator, Inc.* 149 FERC ¶ 61,099 at P 20 (2014), *reh’g denied*, 154 FERC ¶ 61,101 (2016).

²³ *Midcontinent Indep. Sys. Operator, Inc.* 149 FERC ¶ 61,099 P 20 (2014).

²⁴ *PPL Elec. Corp., et al.*, Docket No. ER21-2282-000, Affidavit of David W. Weaver, P.E., Vice President of Transmission Strategy of Exelon at 6 (filed June 30, 2021) (the “Weaver Affidavit”)(stating that the risks are similar regardless of whether the Network Upgrades is a greenfield transmission line or an upgrade to an existing transmission facility)

²⁵ See Weaver Affidavit at 7-21.

²⁶ See Attachment A to this Response.

²⁷ Supplemental CRA Affidavit at 3 (explaining that Network Upgrades may include all types of transmission facilities, including transmission lines, switchgear, transformers and other equipment that are similar to other transmission facilities owned by the PJM Transmission Owners); see also Initial CRA

Moreover, the Commission has no basis for finding that the risk associated with permitting, financing, owning and operating Network Upgrades related to new generator interconnections is different from the risks associated with any other transmission facilities. The purpose for which a Network Upgrade is originally constructed does not have any bearing on risk, and the Commission has never suggested otherwise in any case involving transmission facilities built in connection with a new interconnection. To the contrary, the Commission's longstanding practice has been to roll in the costs of all network facilities on an integrated transmission system without regard to the particular purpose for which any individual transmission facility has been constructed. Thus, the Commission should similarly find that it is appropriate and just and reasonable for the PJM Transmission Owners to use the ROE for Network Upgrades that is used to calculate the revenue requirement for any other transmission facilities on their system.

b. Please provide support for how the approved return on equity rates for PJM TOs do not currently account for the risks of owning and operating the transmission system with the Network Upgrade additions.

Response to Question 2b:

The approved ROE rates for the PJM Transmission Owners do not account for the risks of owning and operating Network Upgrades. While the risks of owning and operating Network Upgrades is no different than the risks of owning and operating other transmission facilities, the existing Commission-approved ROE for transmission facilities does not currently account for the risks of owning and operating Network Upgrades. The reason is simple and straight-forward. The Commission-approved ROE for transmission rates is applied to the PJM Transmission Owner's rate base, and that rate base does not currently include Network Upgrades. Thus, the PJM Transmissions Owners do not earn a return or receive any compensation for owning and operating Network Upgrades.²⁸

Importantly, in the Supplemental CRA Affidavit, Mr. Adamson explains that the Commission's current methodology for establishing ROE for a transmission owner in Opinion No. 569-A²⁹ (*i.e.*, the Transmission Owner's compensation structure) does not account for the incremental risks associated with owning and operating Network Upgrades. Specifically, Mr. Adamson states that the three ROE models used in the Commission's ROE methodology adopted in Opinion No. 569-A (*i.e.*, the Discounted Cash Flow model, the Capital Asset Pricing Model ("CAPM"), and the Risk Premium Model) do not account for the risks of owning and operating Network Upgrades.³⁰ The capital market data used in those models is not granular enough to

Affidavit at 6.

²⁸ See June 30 Filing, Transmittal Letter at 12-13.

²⁹ *Ass'n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc.*, Opinion No. 569, 171 FERC ¶ 61,154 (2020).

³⁰ Supplemental CRA Affidavit at 4-5.

account for the specific risks discussed herein.³¹ Moreover, the proxy group companies used in the Commission’s ROE methodology includes a variety of publicly-traded holding companies across various regions that include various lines of business and many employ different models for funding Network Upgrades.³² Mr. Adamson explains because there currently is no mechanism to earn a return on Network Upgrades in PJM, there is no mechanism for the transmission owner to be compensated for the risks associated with owning and operating Network Upgrades.³³ Any suggestion that the transmission owner’s existing authorized ROE already accounts for the risks of owning and operating Network Upgrades is without merit and was rejected by the DC Circuit in *Ameren* and the Commission in the MISO orders.

In *Ameren*, the DC Circuit was skeptical with the claims that “separate risks and consequent expenses” associated with Network Upgrades are somehow ‘baked in’ to the MISO Transmission Owners’ existing compensation structure.³⁴ The DC Circuit instructed the Commission to analyze whether the ownership and operating of Network Upgrades would impose incremental risks the transmission owners. On remand, the Commission found that MISO Transmission Owners have uncompensated risks associated with Network Upgrades.³⁵ The Commission further found that their compensation structure did not account for the risks associated with Network Upgrades and held that the MISO Transmission Owners should have the opportunity to be compensated for the Network Upgrades.³⁶ There would be no rational basis for the Commission to come to a different conclusion for the PJM Transmission Owners.

³¹ *Id.* at 5.

³² *Id.*

³³ *Id.* at 4.

³⁴ *Ameren Servs. Co. v. FERC*, 880 F.3d 571, 580 (D.C. Circuit 2018).

³⁵ See *Midcontinent Indep. Sys. Operator, Inc.*, 164 FERC ¶ 61,158 at PP 14, 15 and 31 (2018) (*Remand Order*), *reh’g denied*, 169 FERC ¶ 61,233 (2019). See also *Am. Clean Power Ass’n v. FERC*, Case D.C. Cir. No. 20-1453, Brief of Respondent Federal Energy Regulatory Commission, at 43 (D.C. Cir. May 3, 2021) (“FERC Brief”).

³⁶ *Remand Order*, 164 FERC ¶ 61,159 at PP 1, 14, and 31.

- c. *Please explain whether the allowed rate of return (k) of the annual transmission revenue requirement would decrease due to reduced risks from the capital costs of Network Upgrades being included in rate base, assuming the PJM TOs could earn a rate of return on Network Upgrades.*

Response to Question 2c:

If the Commission approves the Proposed Revisions, there is no reason or justification to reduce the Commission-approved ROEs for the PJM Transmission Owners. As discussed above in the Response to Question 2b, the risks associated with Network Upgrades are not reflected in the PJM Transmission Owners' authorized ROEs. In the Supplemental CRA Affidavit, Mr. Adamson further supports this conclusion for two reasons. First, the PJM Transmission Owners' authorized ROEs are applied only to rate base assets, which do not currently include Network Upgrades. Second, the Commission's ROE methodology does not make any adjustment or reflect the risks associated with ownership and operation of the Network Upgrades, as previously described.³⁷

If the PJM Transmission Owners were allowed to earn a return on the Network Upgrades, this would be to compensate them for owning and operating Network Upgrades and to account for the risks of those facilities, which are separate from the risks addressed by the Commission-approved ROE that the PJM Transmission Owners earn for their other transmission facilities on their system. As noted above, the PJM Transmission Owners propose to use the same methodology approved by the Commission for the MISO Transmission Owners. In approving the use of the Commission-ROE in calculating the Facility Charge in MISO, the Commission did not find that the MISO Transmission Owners' overall risks were reduced or that the MISO Transmission Owners' authorized ROE should be decreased. Based on the foregoing, the PJM Transmission Owners believe it is appropriate for the Commission to apply the same reasoning in this proceeding as the Commission applied in the MISO Transmission Owners' proceeding and come to the same outcome.

Question 3:

PJM TOs state that the PJM transmission system has hit its tipping point, and the uncompensated risks caused by the PJM TOs' existing funding model will deter investors and diminish the PJM TOs' ability to attract capital for future maintenance and expansion. The PJM TOs state that they recover operating and maintenance costs associated with Network Upgrades through rates, but argue that their ability to raise capital will be affected by the inability to earn a rate of return on the capital investment associated with the Network Upgrades. PJM TOs explain that as the number of Network Upgrades increases, their financial risk will also increase. PJM TOs explain further that the proportion of rate base assets upon which a PJM TO

³⁷ See Supplemental CRA Affidavit at 6.

earns a return compared to total transmission assets will fall, which will increase risks for shareholders, who will face larger potential losses on a smaller proportion of rate base assets.

- a. *Please provide a comparison of PJM TOs' gross plant for all transmission assets to the gross plant for participant funded Network Upgrades over the timeframes referenced in the transmittal, and if possible, please provide a comparison of PJM TOs' net plant for all transmission assets to the net plant for participant funded Network Upgrades over the same time periods.*

Response to Question 3a:

PJM proposed use of Participant Funding in 2004 in its Order No. 2003 compliance filing.³⁸ Since that time, the number of generators interconnecting to the PJM transmission system has significantly increased. As a result, so have the costs of Network Upgrades. Below in Figure 1 is a chart depicting the PJM TOs' gross plant for their transmission assets,³⁹ gross plant for participant funded Network Upgrades,⁴⁰ and the sum of gross transmission plant and gross participant funded Network Upgrades over the period 2004 to 2020.⁴¹

³⁸ See PJM's Order No. 2003 compliance filing in Docket No. ER04-457 (submitted Jan. 20, 2004).

³⁹ The gross plant transmission data in Figure 1 reflects the gross plant data for following PJM Transmission Owners: American Electric Power Service Corporation on behalf of its affiliates, Appalachian Power Company, Indiana Michigan Power Company, Kentucky Power Company, Kingsport Power Company, Ohio Power Company, Wheeling Power Company, AEP Appalachian Transmission Company, Inc., AEP Indiana Michigan Transmission Company, Inc., AEP Kentucky Transmission Company, Inc., AEP Ohio Transmission Company, Inc., and AEP West Virginia Transmission Company, Inc.; The Dayton Power and Light Company; Dominion Energy Services, Inc. on behalf of Virginia Electric and Power Company d/b/a Dominion Energy Virginia; Duke Energy Corporation on behalf of its affiliates Duke Energy Ohio, Inc., Duke Energy Kentucky, Inc., and Duke Energy Business Services LLC; Duquesne Light Company; East Kentucky Power Cooperative; Exelon Corporation; FirstEnergy Service Company, on behalf of its affiliates American Transmission Systems, Incorporated, Jersey Central Power & Light Company, Mid-Atlantic Interstate Transmission LLC, West Penn Power Company, The Potomac Edison Company, Monongahela Power Company, Keystone Appalachian Transmission Company, and Trans-Allegheny Interstate Line Company; PPL Electric Utilities Corporation; Public Service Electric and Gas Company; Rockland Electric Company, and UGI Utilities Inc. This group of PJM Transmission Owners owns over 99% of transmission assets in PJM. The remaining gross transmission assets would not materially affect the totals.

⁴⁰ The PJM Transmission Owners obtained data for in-service Network Upgrades for the period 2004 to 2020 from PJM Project Status and Cost Allocation data base available at <https://pjm.com/planning/project-construction>.

⁴¹ The PJM Transmission Owners' data for gross transmission plant for 2021 will not be available until April 2022 when their FERC Form 1 reports are due with the Commission. Thus, for purposes of responding to Question No. 3a, the PJM Transmission Owners are providing data for the period 2004 (when PJM adopted Participant Funding in its Order No. 2003 compliance filing) through 2020. The Deficiency Letter also requests, *if possible*, a comparison of the PJM Transmission Owners net plant for all transmission assets to the net plant for Participant Funded Network Upgrades. The PJM Transmission

Figure 1: Gross Plant for Transmission Assets and Network Upgrades

Gross Plant for Transmission Assets and Network Upgrades (2004-2020)			
Year	Gross Plant for Transmission Assets	Gross Plant for Network Upgrades	Total Gross Plant for Transmission Assets and Network Upgrades
2004	\$14,963,688,462.00	\$ 35,010,000.00	\$14,998,698,000.00
2005	\$15,529,297,492.00	\$ 35,940,000.00	\$15,565,237,000.00
2006	\$16,637,232,573.00	\$ 36,080,000.00	\$16,673,313,000.00
2007	\$17,621,977,595.00	\$ 69,140,000.00	\$17,691,118,000.00
2008	\$18,830,887,886.00	\$ 80,350,000.00	\$18,911,238,000.00
2009	\$20,206,495,622.00	\$ 120,810,000.00	\$20,327,306,000.00
2010	\$22,603,935,942.00	\$ 244,200,000.00	\$22,848,136,000.00
2011	\$26,598,370,293.00	\$ 320,550,000.00	\$26,918,920,000.00
2012	\$29,180,537,650.00	\$ 385,330,000.00	\$29,565,868,000.00
2013	\$32,840,061,410.00	\$ 415,510,000.00	\$33,255,571,000.00
2014	\$38,960,034,384.00	\$ 461,110,000.00	\$39,421,144,000.00
2015	\$46,225,571,362.00	\$ 756,040,000.00	\$46,981,611,000.00
2016	\$52,609,026,042.00	\$ 813,970,000.00	\$53,422,996,000.00
2017	\$58,573,970,601.00	\$ 1,010,810,000.00	\$59,584,781,000.00
2018	\$65,062,535,608.00	\$ 1,078,440,000.00	\$66,140,976,000.00
2019	\$71,518,348,473.00	\$ 1,175,780,000.00	\$72,694,128,000.00
2020	\$77,720,563,531.00	\$ 1,311,710,000.00	\$79,032,274,000.00

As the data in Figure 1 shows, in 2004 when PJM initially proposed use of Participant Funding in its Order No. 2003 compliance filing, the amount of Network Upgrades added that year was a relatively small amount; approximately \$35 million.⁴² However, between 2004 and 2020, the cumulative amount of Network Upgrades added to the PJM system has increased. Specifically, at the end of 2020, the total amount of Network Upgrades in PJM (as reported in the PJM database) grew to approximately \$1.311 billion.⁴³

Owners do not have sufficient data to compare their net plant for all transmission assets relative to the net plant for Participant Funded Network Upgrades over the 2004-2020 period.

⁴² The PJM project status database contains Network Upgrades data beginning in 2001. For the period 2001 to 2003 (prior to when PJM submitted its Order No. 2003 compliance filing in 2004), approximately \$63.5 million of Network Upgrades were put in service.

⁴³ PJM informed the PJM Transmission Owners there are approximately \$353 million of Direct Connection Network Upgrades that are not reported in the PJM project status database. PJM noted that it did not begin to track Direct Connection Network Upgrades in its database until around 2006/2007. With respect to this \$353 million figure, because PJM does not have a year-by-year breakdown as to when the Network Upgrades were placed into service, they are not included in the chart in Figure 1. However, if the \$353 million figure is added to the \$1.311 billion of Network Upgrades, the total amount of Network Upgrades in service as of 2020 would be approximately \$1.664 billion. This figure is higher than the \$1.565 billion figure that is set forth in PJM's 2020 RTEP (as referenced in the Transmittal Letter at n.27). PJM has explained that the difference is due to the fact that the figure in the 2020 RTEP

Importantly, as discussed in detail in the Initial Affidavit of David Hunger and Seabron Adamson of Charles River Associates contained in the June 30 Filing (the “Initial CRA Affidavit”),⁴⁴ the number of Network Upgrades required to accommodate interconnecting generation will continue to increase as the Nation continues to make a rapid transition to renewable/clean energy. As explained in the Initial CRA Affidavit, reaching carbon neutral goals by 2035 will require adding renewable generation “on a massive scale,”⁴⁵ and will require tens of billions of dollars in Network Upgrades to connect these renewable projects to the PJM system.⁴⁶ PJM’s 2020 Regional Transmission Plan (Feb. 28, 2021) indicates that as of December 31, 2020, there were approximately \$4.9 billion of projects that are active in the interconnection queue. Even if less than a quarter of these projects were to move forward, this would nearly double the Network Upgrades currently on the system.⁴⁷ The bottom line is that Network Upgrades are no longer a negligible or *de minimis* portion, but fast becoming a significant and material portion of the transmission system.

It is worth noting that in the recent Advanced Notice of Proposed Rulemaking (“ANOPR”), the Commission indicated that it expects to see an increase in the number of Network Upgrades needed to accommodate the growing number of renewable generation resources that are expected to connect to the transmission system over the next several years as the electric power industry is quickly undergoing a fundamental transition in its generation mix.⁴⁸ This changing resource mix will require a significant build out of the system to interconnect the renewable generation to the system. As the Commission noted in the ANOPR, when Order No. 2003 was issued, “it was less likely that interconnection customers would be assigned significant interconnection-related network upgrades through the interconnection study process.”⁴⁹ In contrast, today, “there is little remaining existing interconnection capacity on the transmission system” and therefore ***extensive interconnection-related network upgrades*** are often needed to accommodate” significant new renewable generation resources, something that the Commission did not contemplate when it adopted Order No. 2003.⁵⁰ These changing system

represents a “snapshot” in time and was based upon estimated costs, rather than actual costs. It should be noted that for the first eight months of 2021 (through August 2021), an additional \$98 million of Network Upgrades were placed in service in PJM.

⁴⁴ *PPL Elec. Corp., et al.*, Docket No. ER21-2282-000, Affidavit of David Hunger and Seabron Adamson of Charles River Associates (filed June 30, 2021).

⁴⁵ Initial CRA Affidavit at 14-15.

⁴⁶ *Id.* at 15.

⁴⁷ See June 30 Filing, Transmittal Letter at n.27 (assuming only 23 percent of the projects under study were to move forward, this would mean approximately \$1.13 billion of Network Upgrades would be added to the Network Upgrades that are already in service).

⁴⁸ *Building for the Future Through Elec. Regional Transmission Planning & Cost Allocation and Generator Interconnection*, Advance Notice of Proposed Rulemaking, 176 FERC ¶ 61,024 (2021).

⁴⁹ *Id.* at P 40.

⁵⁰ *Id.* at P 100 (emphasis added).

conditions on the Nation's power grid further emphasizes the need for the Commission to approve the Proposed Revisions.

- b. *Please provide any available evidence that investors have informed the PJM TOs that they hold concerns over future investments in the PJM TOs given the projected increase in Network Upgrades, including whether any PJM TO has been unable to raise capital for a transmission project as a result of risks associated with Network Upgrades.*

Response to Question 3b:

Currently, the PJM Transmission Owners do not have the ability to earn a profit on the portion of the transmission system that consists of Network Upgrades. As the Initial CRA Affidavit explains, the PJM Transmission Owners are forced to own and operate these assets on a non-profit basis, and that in a market economy, no private business would voluntarily choose to pursue such a business model.⁵¹ While the PJM Transmission Owners are regulated entities, they are for profit entities, and therefore, must be compensated for the service that they provide.⁵²

Importantly, the PJM Transmission Owners have filed the Proposed Revisions under Section 205 of the FPA. Thus, they do not need to demonstrate that the existing methodology absent the Transmission Owner's option to fund Network Upgrades is unjust and unreasonable. Instead, they need only show that the Proposed Revisions are just and reasonable.⁵³ In that regard, the PJM Transmission Owners have modeled their proposed changes on the methodology approved by the Commission to compensate the transmission owners in MISO that elect to fund Network Upgrades.⁵⁴ The Commission found it just and reasonable to allow the MISO Transmission Owners to elect to fund Network Upgrades and approved the use of ROE for their transmission assets to recover their return on those Network Upgrades.⁵⁵ The Commission should reach the same conclusion in this proceeding.

A key driver for the filing the Proposed Revisions now is the significant increase in Network Upgrades on the PJM Transmission Owners' systems. As shown in the Response to

⁵¹ Initial CRA Affidavit at 6.

⁵² *See also* Weaver Affidavit at 2-3 (noting that the current model under which the PJM Transmission Owners earn no return on Network Upgrades is akin to the customer "paying a pizza delivery person for gas and the wear and tear on their vehicle, but not providing any compensation for their time or the value of the service that they provide."); *Ameren*, 880 F.3d 571 at 581 (stating that "it seems undisputable that when portions of a business are unprofitable, it detracts from the attractiveness to investors of the business as a whole.").

⁵³ *See also* PJM Transmission Owners' Motion to Leave and Answer at n.7 (Aug. 13, 2021) (citing judicial and Commission precedent holding that under FPA Section 205, the filing utility is not required to demonstrate that alternative approaches are unjust and unreasonable).

⁵⁴ *See April 2020 MISO FSA Order*.

⁵⁵ *Id.* at P 49.

Question 3a, the costs of Network Upgrades have significantly increased since 2004. And the increase is expected to accelerate in the coming years as the Nation transitions to clean energy as part of an effort to address climate change issues, which will create significant risks to public utilities.⁵⁶ In the June 30 Filing, the PJM Transmission Owners propose a just and reasonable mechanism to compensate them for owning and operating those Network Upgrades and shouldering the risks associated with those transmission facilities. Currently, the PJM Transmission Owners are not compensated for the portion of their system that consists of Network Upgrades. And, assuming arguendo that there is no risk for owning and operating that portion of their transmission system, the PJM Transmission Owners must nonetheless be compensated for the service that they provide over transmission facilities that they own and operate.

In fact, there is a risk that the growing number of Network Upgrades will impact the PJM Transmission Owners ability to attract capital.⁵⁷ It is common knowledge that investors review risk profiles when making investment decisions.⁵⁸ As Mr. Adamson explains, investors invest in entire transmission systems.⁵⁹ If a Transmission Owner does not earn a profit on a particular segment of its business, it creates a risk to the Transmission Owner as it tries to raise capital because a portion of the business provides no profit for the Transmission Owner and its investors. As the nonprofit segment of the transmission owner's business grows so does its capital investment risk. Thus, the Proposed Revisions seek to address a growing risk that the increasing number of Network Upgrades will negatively impact the PJM Transmission Owners ability to attract capital.⁶⁰

⁵⁶ See, e.g., Yannic Rack, "Utilities face greatest threat as climate risks intensify," Market Intelligence (Sep. 20, 2021) (explaining that public utilities face the greatest risk compared to other sectors with respect to extreme weather events due to climate change, that utilities face a significant challenge in balancing massive investments to upgrade their infrastructure with high standards of availability, and that the increasing catastrophes "will put more strain on the system.").

⁵⁷ Initial CRA Affidavit at 17, 21.

⁵⁸ *Id.* See also *Ameren*, 880 F.3d at 581 (noting that investors view the business as a whole).

⁵⁹ See Supplemental CRA Affidavit at 5 (noting that if investors believe that "the return does not appropriately account for the company's risks, they will demand a higher return or not invest.").

⁶⁰ *Id.* Under Section 205 of the Federal Power Act and Commission precedent, public utilities have the right to be proactive and propose tariff revisions to address issues or problems that are expected to worsen or materialize in the future; in other words, utilities do not have to wait for the harm to occur before making Section 205 filings to address the problem. See, e.g., *Cal. Indep. Sys. Operator*, 124 FERC ¶ 61,271 at PP 345, 350 (2008) (finding that CAISO appropriately justified its Section 205 filing to address a known or reasonably anticipated problem, and agreeing with the CAISO's rationale that "one should not be forced to wait for known or reasonably anticipated problems to occur before instituting corrective action"); *order on reh'g and clarification*, 128 FERC ¶ 61,103 (2009); *Columbia Gas Transmission Corp.*, 115 FERC ¶ 61,134 P (2006) (accepting proposed tariff revisions and holding it "entirely appropriate" for the filing utility to "anticipate problems and take action to forestall them, rather than waiting until such problems occur."); *N. Nat. Gas Co.*, 173 FERC ¶ 61,291 at P 14 (2020) (accepting

Mr. Adamson’s conclusion that the PJM Transmission Owners face a risk to their ability to attract capital is impaired as a result of the inability to earn a return on Network Upgrades is consistent with the statements that the DC Circuit made in *Ameren* and the Commission’s findings in the MISO orders. In particular, in *Ameren*, the Court found the preventing transmission owners from earning a return on Network Upgrades “attack[]s their very business model and thereby *create[s] a risk that new capital investment will be deterred.*”⁶¹ The Court noted that it is “undisputable that when portions of a business are unprofitable, it detracts from the attractiveness to investors of the business as a whole.”⁶² The Court instructed the Commission to “explain how investors could be expected to underwrite the prospect of potentially large non-profit appendages with no compensatory incremental return.”⁶³ On remand, the Commission concluded that it was not able to provide an explanation and therefore reversed itself.⁶⁴ These same risks and concerns apply to the PJM Transmission Owners and therefore support the adoption of the Proposed Revisions.

Question 4:

The proposed pro forma NUFA provides options for monthly and annual payments of the Network Upgrade Charge. Under the Proposed Revisions, Schedule B to the pro forma NUFA includes a deferred recovery adjustment in the calculation of the Network Upgrade Charge, but the PJM TOs do not describe this adjustment in their transmittal.

- a. *Please explain the purpose of deferred recovery and the circumstances under which the deferred recovery adjustment will be included in the Network Upgrade Charge (e.g., would it be used prior to the first payment and/or would it also be used for late payments). In your answer, please provide support for how the deferred recovery adjustment will be applied consistently.*

Response to Question 4a:

The deferred recovery adjustment the PJM Transmission Owners incorporated into Schedule B of the *pro forma* NUFA is identical to the deferred recovery adjustment in the MISO FSA that the Commission approved for the MISO Transmission Owners.⁶⁵ The PJM

tariff revisions to address an anticipated problem and holding that it is not necessary for the utility to wait for the harm to occur).

⁶¹ *Ameren*, 880 F.3 at 581 (emphasis added).

⁶² *Id.*

⁶³ *Id.*

⁶⁴ *Remand Order* at P 31.

⁶⁵ In the *April 2020 MISO FSA Order*, the Commission approved a similar deferred cost recovery adjustment that the PJM Transmission Owners are proposing in Schedule B. *See id.* at P 46 (stating that the deferred recovery adjustment mechanism adjusts “the annual and/or monthly network upgrade charge

Transmission Owners' proposed deferred recovery adjustment provides a mechanism to adjust the annual and/or monthly charges for Network Upgrade(s) to account for any delay that may occur between the date when the Network Upgrade goes into service and the date when cost recovery under the NUFA commences. For example, if the in-service date of a Network Upgrade is June 1, 2022 and the commencement of the Network Upgrade Charges is July 1, 2022 (*i.e.*, a one month delay), the deferred recovery adjustment in Schedule B of the *pro forma* NUFA would apply. The deferred recovery adjustment mechanism is designed to ensure equivalence on a present value basis of payments under the NUFA. This cost adjustment mechanism will apply only when there is a delay or lag between the in-service date of the Network Upgrades and the date when recovery under the NUFA begins and is not related to the timeliness of payments by the interconnection customers or whether the payments are made on an annual or monthly basis.

To be clear, the deferred recovery adjustment normally would not be applicable to any NUFAs that conform to the *pro forma* NUFA. Specifically, if the *pro forma* NUFA is approved by the Commission, any conforming NUFA would not need to be filed with the Commission. Generally, the PJM Transmission Owners do not anticipate any delay between the in-service date and the Network Upgrade Charge going into effect. Therefore, the deferred adjustment under the PJM Transmission Owners' proposal will only be applied to delays with respect to the date on which PJM is able to bill the Network Upgrade Charge to a developer after the in-service date of the Network Upgrade for which the charge applies, and not for missed or late payments, which will be covered by the security provisions of the NUFA.

Question 5:

The PJM TOs state that the Proposed Revisions provide that if the TO elects to fund the Network Upgrades, PJM will provide the interconnection customer with a NUFA at the same time it provides an Interconnection Construction Service Agreement. The Proposed Revisions specify that a transmission owner must execute and return the NUFA to PJM no later than 15 business days after receipt of the NUFA. Further, instead of executing the NUFA, the interconnection customer may request dispute resolution under the Tariff, that the NUFA be filed unexecuted at the Commission, or mutually agree with the transmission owner to extend the timeline to execute the NUFA. Also, the proposal provides that if the customer requests dispute resolution, "construction shall be deferred" until disputes are resolved.

a. *In the scenario that a Network Upgrade goes into service prior to the interconnection customer executing the NUFA as a result of delays caused by the processing of the agreement, please explain whether there is a mechanism in the NUFA for dealing with such a delay and any potential impacts on the rate designated in the NUFA.*

to account for any delay between the date when the network upgrade is placed in service and the date when recovery under the FSA begins.”).

Response to Question 5a:

As stated in response to 4a, in the unlikely scenario where a Network Upgrade goes into service prior to the interconnection customer executing the NUFA, the deferred cost recovery adjustment mechanism in Schedule B of the NUFA would apply.

Question 6:

PJM TOs state that affiliate abuse concerns will be mitigated by PJM’s administrator role under the pro forma NUFA, and the PJM TOs will provide a non-binding statement of general intent on the PJM website of how each TO plans to treat Network Upgrades on its system. Further, PJM TOs explain their binding intent to fund Network Upgrades will be provided prior to the completion of the facilities study. The PJM TOs also explain that each TO will post on PJM’s website a list of Network Upgrades each PJM TO elects to fund with an accompanying statement of whether the interconnection customer is an affiliate.

- a. Please describe the criteria the PJM TOs will use in their decision making process to determine whether to exercise the TO option to initially fund Network Upgrades. Please provide details on how the Proposed Revisions will be applied in a not unduly discriminatory manner.*

Response to Question 6a:

As a general matter, the PJM Transmission Owners intend to fund Network Upgrades if they have the capital budget and business flexibility to do so. However, given the early stages of the process, they have not developed specific criteria for determining whether to exercise the transmission owner funding option. Following the Commission’s approval of their proposal, they will be in a better position to consider developing criteria to guide their decision-making process and to publicize those criteria. The criteria may include, for example, a minimum dollar threshold that would exclude Network Upgrades below a certain dollar amount; other potential criteria are still being considered.

The PJM Transmission Owners designed the Proposed Revisions to provide necessary transparency to ensure non-discriminatory application of the proposed new rules. As an initial matter, the majority of the PJM Transmission Owners do not own generation and are not currently affiliated with generation or have announced plans to divest their generation in the near future. As the *Ameren* Court found, there is no “motive for discrimination by non-vertically integrated transmission owners among their customers.”⁶⁶

⁶⁶ *Ameren*, 880 F.3d at 582.

Each of the PJM Transmission Owners have also committed to post a non-binding statement of whether it intends to fund Network Upgrades on PJM's website.⁶⁷ Each PJM Transmission Owner will also identify on PJM's website each Network Upgrade it elects to fund and will specify whether that project is associated with an affiliated generator.⁶⁸ These safeguards provide interconnection customers with further ability to identify and raise any concerns with respect to affiliate abuse on a case-by-case basis that are beyond those required in MISO. In MISO, the Commission found that the ability to address concerns of affiliate abuse on a case-by-case basis is adequate.⁶⁹ This finding applies with equal force in PJM.

- b. Please explain and provide an example of what the PJM TOs will post on PJM's website regarding the Network Upgrades it elects to initially fund. Also, please explain whether the PJM TOs will post on PJM's website information regarding the Network Upgrades it elects not to initially fund. If the PJM TOs will not post this information on PJM's website, explain why not.*

Response to Question No. 6b

The PJM Transmission Owners will post whether they elect to fund a Network Upgrade on the PJM project status website. The website can be found at the following location: <https://pjm.com/planning/project-construction>. The PJM project status website currently lists each project in PJM, including Network Upgrades, and provides the status of the project (*i.e.*, active, under construction, and in service). For Network Upgrades, the database includes the Network Upgrade identification number, a description of the Network Upgrade, the voltage level of the Network Upgrade, the interconnecting transmission owner, state where the Network Upgrade is located, the cost of the Network Upgrade, and several columns identifying the project status. The PJM Transmission Owners are coordinating with PJM to add a column to the database to indicate whether the PJM Transmission Owner has elected to fund the Network Upgrade and an additional column to indicate whether the interconnection customer is affiliated with the transmission owner. The PJM Transmission Owners have included as Attachment B, an example of how the revised database may look is pending further discussions with PJM.

The PJM project status website includes all Network Upgrades. Thus, interested parties will be able to identify those Network Upgrades that the transmission owner elects to fund and those Network Upgrades that the transmission owner does not elect to fund. The website also allows interested parties to sort by column. Thus, parties will be able to sort Network Upgrades

⁶⁷ June 30 Filing, Transmittal Letter at 29-30.

⁶⁸ *Id.*

⁶⁹ *Midcontinent Indep. Sys. Operator, Inc.*, 169 FERC ¶ 61,233 at P 38 (2019) (holding that if there are undue discrimination concerns, interconnection customers have the right to challenge costs before the Commission); *see also* FERC Brief at 28 (“the Commission found that discrimination concerns could be addressed on a case-by-case basis in generator challenges to any purportedly excessive interconnection costs.”).

based on transmission owner and based on whether the transmission owner has elected or not elected to fund Network Upgrades.

II. CONTENTS OF THIS RESPONSE

In addition to this Transmittal Letter, this Response contains the following items:⁷⁰

- A. Attachment A: Supplemental Affidavit of Mr. Seabron Adamson of Charles River Associates; and
- B. Attachment B: An example of the PJM Transmission Owners' posting of Network Upgrade Funding Decision

III. SERVICE

PJM has served a copy of this filing on all PJM Members and on all state utility regulatory commissions in the PJM Region by posting this filing electronically. In accordance with the Commission's regulations,⁷¹ PJM will post a copy of this filing to the FERC filings section of its internet site, located at the following link: <http://www.pjm.com/documents/ferc-manuals/ferc-filings.aspx> with a specific link to the newly-filed document, and will send an e-mail on the same date as this filing to all PJM Members and all state utility regulatory commissions in the PJM Region⁷² alerting them that this filing has been made by PJM and is available by following such link. If the document is not immediately available by using the referenced link, the document will be available through the referenced link within 24 hours of the filing. Also, a copy of this filing will be available on the Commission's eLibrary website located at the following link: <http://www.ferc.gov/docs-filing/elibrary.asp> in accordance with the Commission's regulations and Order No. 714.

⁷⁰ The PJM Transmission Owners are not proposing to change the Proposed Revisions in any way. An eTariff record is being submitted to restart the statutory timeframe for Commission action, as specified in the August 20 Deficiency Letter. *See* August 20 Deficiency Letter, n.14.

⁷¹ 18 C.F.R. §§ 35.2(e), 385.2010(f)(3).

⁷² PJM already maintains, updates and regularly uses e-mail lists for all PJM members and affected state commissions.

IV. CONCLUSION

For the reasons set forth in the June 30 Filing and this Response, the PJM Transmission Owners request that the Commission accept the Proposed Revisions without hearing, modification, or condition and grant an effective date of August 30, 2021, as originally requested in the June 30 Filing.

Respectfully submitted,

/s/ William M. Keyser

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Counsel for PPL Electric Utilities

On behalf of the PJM Transmission Owners

cc: Katherine Scott (katherine.scott@ferc.gov)

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 20th day of September 2021.

/s/ Jeannette Crooks

Jeannette Crooks

Step toe & Johnson LLP

1330 Connecticut Avenue, NW

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ATTACHMENT A

Supplemental Affidavit of Seabron Adamson of Charles River Associates

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

PPL Electric Utilities Corporation
PJM Interconnection, LLC

)
)
) Docket No. ER21-2282-000
)
)

**PREPARED SUPPLEMENTAL AFFIDAVIT OF SEABRON ADAMSON
ON BEHALF OF THE PJM TRANSMISSION OWNERS**

I. INTRODUCTION

Q: PLEASE STATE YOUR NAMES, OCCUPATIONS, AND BUSINESS ADDRESSES.

A: My name is Seabron Adamson. I am a Vice President in the Energy Practice of Charles River Associates (“CRA”). My address is 200 Clarendon Street, Boston, MA 02116.

Q: HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY IN THIS DOCKET?

A: Yes. I previously submitted a joint affidavit to the Federal Energy Regulatory Commission (“FERC” or “Commission”) with Dr. David Hunger in this docket (“Initial CRA Affidavit”). The Initial CRA Affidavit was filed in support of the proposed tariff revisions submitted by the PJM Transmission Owners on June 30, 2021.

Q: WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS SECOND AFFIDAVIT?

A: I have been asked by counsel for the PJM Transmission Owners to provide additional information in response to questions in the FERC Deficiency Letter issued on August 20, 2021 (“Deficiency Letter”) in Docket No. ER21-2282-000 that were addressed in the Initial CRA Affidavit. Specifically, I have been asked to comment on the questions regarding the return on equity (“ROE”) posed by the Commission Staff in Question Nos. 2 and 3b of the Deficiency Letter. Those questions are:

- Question No. 2a: *Please explain and provide support for how the proposed return on equity to an initial capital investment in Network Upgrades under the Proposed Revisions is the appropriate return necessary to compensate for the risks the PJM TOs describe as associated with owning and operating Network Upgrades.*

- Question No. 2b: *Please provide support for how the approved return on equity rates for PJM TOs do not currently account for the risks of owning and operating the transmission system with the Network Upgrade additions.*
- Question No. 2c: *Please explain whether the allowed rate of return (k) of the annual transmission revenue requirement¹ would decrease due to reduced risks from the capital costs of Network Upgrades being included in rate base, assuming the PJM TOs could earn a rate of return on Network Upgrades.*
- Question No. 3b: *Please provide any available evidence that investors have informed the PJM TOs that they hold concerns over future investments in the PJM TOs given the projected increase in Network Upgrades, including whether any PJM TO has been unable to raise capital for a transmission project as a result of risks associated with Network Upgrades.*

My supplemental affidavit (“Supplemental CRA Affidavit”) addresses each of these topics below.

II. FURTHER INFORMATION SUPPORTING THE PJM TRANSMISSION OWNERS’S PROPOSED REVISIONS

Q: PLEASE EXPLAIN WHY THE PROPOSED ROE INCLUDED IN THE PRO FORMA NETWORK UPGRADE FUNDING AGREEMENT (“NUFA”) IS THE APPROPRIATE ROE.

A: The PJM Transmission Owners propose to use the Commission-approved ROEs used to calculate their transmission rates in determining their charge for Network Upgrades. It is appropriate to use the Commission-approved ROE because Network Upgrades are no different than the other transmission facilities owned and operated by the transmission owners. They are integrated with and operated on the same basis as other transmission assets in rate base. Regardless of whether a transmission facility was initially built to serve an interconnection customer, to serve load, to ensure reliability, or for another purpose, there is no basis to distinguish such assets from a risk perspective. Thus, owning and operating these assets has the same operational risk characteristics as any other rate base assets. Accordingly, the same ROE should apply.

Q: PLEASE ELABORATE ON WHY NETWORK UPGRADE ASSETS ARE SIMILAR TO RATE BASE ASSETS.

A: The PJM Transmission Owners, like other transmission owners, operate integrated high voltage transmission grids. Network Upgrades are transmission assets that are fully

¹ Initial CRA Affidavit at 5.

integrated into those grids. Network Upgrades can be any manner of transmission facility, including transmission lines, switchgear, transformers and other equipment that are broadly similar to other PJM Transmission Owners transmission assets. These Network Upgrade assets will be operated and maintained by the same PJM Transmission Owners personnel who manage and maintain all other transmission assets and they will be operated in the same manner in which transmission owners operate all other transmission assets. The only difference between a Network Upgrade and other transmission assets is the driver for the Network Upgrade. Transmission facilities typically in rate base are built for various purposes, such as to serve load, reduce congestion, ensure reliability, etc. Network Upgrades are necessary to interconnect a new generator to the transmission system. However, once the Network Upgrades are built and placed into operation, they are no different from any other asset on the transmission system. They are the same from an ownership and operational perspective, and have the same risk profile as the other transmission assets owned and operated by the transmission owner.

Q: ARE NETWORK UPGRADE ASSETS AND PJM TRANSMISSION OWNER RATE BASE ASSETS SUBSTANTIALLY DIFFERENT FROM A RISK PERSPECTIVE?

A: No. The PJM Transmission Owner retains the same residual risks associated with all of the transmission assets it operates. These risks were described in detail in the affidavit of Mr. David Weaver. If costs associated with any transmission asset, including Network Upgrades, cannot be recovered, then these costs are borne by PJM Transmission Owner shareholders. The only substantial difference between Network Upgrades and other rate-based transmission assets is that under the current funding model in PJM the PJM Transmission Owner's shareholders currently earn no profit on Network Upgrades. As a result, they receive no compensation for owning and operating Network Upgrades and thus, they are not compensated for the risks associated with owning and operating Network Upgrades.

This observation is consistent with the decision of the DC Circuit in *Ameren* in which the Court concluded in the case of the MISO transmission owners "if Petitioners are conceptually correct that they bear these risks as owners of the transmission lines, it supports their basic contention that they are entitled to be compensated *now* as owners for operating the upgrades."²

² *Ameren Servs. Co. v. FERC*, 880 F.3d 571, 581 (2018).

Q: DOES THE COMMISSION-APPROVED ROE CURRENTLY ACCOUNT FOR THE RISKS OF OWNING AND OPERATING NETWORK UPGRADES?

A: No. As I explained in the Initial CRA Affidavit with Dr. Hunger, under the current funding model, Network Upgrades are not placed in the rate base of the PJM Transmission Owners, and hence there is simply no way to earn any return or a profit on those facilities. Thus, the current methodology does not account for the risks of owning and operating Network Upgrades. Stated another way, because there is no opportunity to recover a profit on Network Upgrades, there is no way for the transmission owner to be compensated for the risks associated with constructing and owning Network Upgrade assets.³ Because the PJM Transmission Owners earn no profit on the Network Upgrades, there is only down-side risk to owning and operating Network Upgrades.⁴ Under normal circumstances, the PJM Transmission Owners are allowed to recover operations and maintenance (“O&M”) costs associated with the Network Upgrades through transmission rates. However, there may be circumstances when they are not able to recover their full O&M costs.⁵ In those circumstances, the shareholders bear the losses. Since the current rate base value of these Network Upgrade assets is by definition zero, the application of any ROE (and a resulting weighted average cost of capital) still yields zero revenues, and there is no compensation for the risks.

Q: DO THE METHODOLOGIES EMPLOYED BY FERC TO SET THE ROE FOR TRANSMISSION RATE BASE ASSETS ADJUST FOR THE FRACTION OF NON-RATE BASE NETWORK UPGRADE ASSETS OPERATED BY THE PJM TRANSMISSION OWNERS?

A: No. I am unaware of any ROE methodology that has addressed this issue. Commission Opinion No. 569-A methodology relies on three models to determine the ROEs that public utilities can use setting transmission rates.⁶ The three models are the Discounted Cash Flow (“DCF”) model, the Capital Asset Pricing Model (“CAPM”) and the Risk Premium Model. To my knowledge, none of these models adjusts or accounts for non-rate base assets (*e.g.* Network Upgrades) owned and operated by the transmission owner.

³ Initial CRA Affidavit at 5.

⁴ *Id.* at 9.

⁵ *Id.* at 8.

⁶ *Ass’n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc.*, 171 FERC ¶ 61,154 (“Opinion No. 569-A”), *order on reh’g*, Opinion No. 569-B, 173 FERC ¶ 61,159 (2020).

Q: DOES THE SELECTION OF PROXY GROUPS IN THE COMMISSION’S ROE METHODOLOGY ADJUST FOR NON-RATE BASE NETWORK UPGRADES?

A: No. To my knowledge the selection of the proxy groups for these public utilities used in the FERC ROE methodology does not account for the potential impacts of Network Upgrades for which the PJM Transmission Owners do not earn a return. The three FERC ROE models practically all rely on public capital markets information which applies to whole publicly-traded companies (or even entire publicly-traded utility holding companies). It is common for the proxy group for a specific transmission owner to include a variety of publicly-traded companies, across various regions, incorporating various lines of business (not just regulated transmission businesses, but also generation, distribution and various unregulated businesses, etc.). Such data is not granular enough to adjust for the specific risk issues under discussion here. Moreover, the proxy groups used by the Commission to establish ROEs for the PJM Transmission Owners may include utilities across the United States. Significantly, this could include, for example, utilities in MISO, for which the Commission has approved tariff changes through which transmission owners can elect to fund Network Upgrades and earn a return while the PJM Transmission Owners are not accorded similar treatment.⁷ The PJM Transmission Owners could also be compared through a proxy group methodology with utilities in non-RTO regions where the payment of Network Upgrades is handled differently.

Q. DO INVESTORS TAKE INTO ACCOUNT THE RISKS CREATED BY THE UNCOMPENSATED PART OF THE TRANSMISSION SYSTEM ASSOCIATED WITH NETWORK UPGRADES?

A. Investors review company risk profiles when making determinations about when to invest in a particular company.⁸ They assess whether the perceived rate of return for a company is sufficient to compensate them for what they believe to be the investment risk in the company. If they believe that the return does not appropriately account for the company’s risks, they will either demand a higher return or not invest.

Q. IS THERE A TIMING ISSUE REGARDING THE RISK TO THE PJM TRANSMISSION OWNERS’ ABILITY TO RAISE CAPITAL TO BE CONSIDERED HERE AS WELL?

A: Yes. The concern is that the number of Network Upgrades will continue to grow exponentially and continue to increase risk for the PJM Transmission Owners. As was noted in the Initial Affidavit with Dr. Hunger, the number of Network Upgrades is expected to grow sharply in the next few years, as new low-carbon generation is interconnected to the PJM power grid to meet state and federal policy goals. As the

⁷ See *Midcontinent Indep. Sys. Operator, Inc.*, 171 FERC ¶ 61,075, *reh’g order*, 173 FERC ¶ 61,037 (2020).

⁸ Roger A. Morin, *New Regulatory Finance*, 20-21 (Public Utilities Reports, Inc. 2006).

number of Network Upgrades increases, the risk to capital will increase because, as noted above, the PJM Transmission Owners receive no compensation for those assets. Thus, while some may consider the risk to be modest at this stage, the Proposed Revisions seek to address concerns before the situation becomes critical.⁹

Q: IF THE CAPITAL COSTS OF NETWORK UPGRADES ARE INCLUDED IN RATE BASE, SHOULD THE PJM TRANSMISSION OWNERS COMMISSION-APPROVED ROES FOR TRANSMISSION ASSETS BE REDUCED.

A: No. This question seems to suggest that risks are “baked in” to existing returns to transmission owners, and hence that removing these risks would therefore lower the risks associated with rate base transmission assets, which do attract a return. However, as discussed above, this is not a correct assumption.

As I have noted previously in this Affidavit, there is no evidence that these Network Upgrade-associated risks are already “baked in” to existing rate base returns. Nor am I aware of any Commission precedent would suggest such risks are considered in ROE computations. The ROE is applied to rate base assets only, with Network Upgrade assets treated as having zero rate base value. As I also previously noted, none of the FERC-specified ROE methodologies makes any adjustment for the fraction of Network Upgrades and the risks imposed on transmission owner revenues. Such risks are currently uncompensated, and not “baked in” to current ROEs. As such, compensating for these Network Upgrade-associated risks would logically not affect the required ROEs for existing rate base assets.

Q: DOES THIS CONCLUDE YOUR SUPPLEMENTAL TESTIMONY?

A: Yes.

⁹ As discussed herein and in the Initial CRA Affidavit, requiring the PJM Transmission Owners to bear the risk associated with Network Upgrades is not justified regardless of the magnitude of Network Upgrades on any PJM Transmission Owner’s system. The problem of uncompensated risk is expected to be exacerbated as the need for Network Upgrades increases.

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

PPL Electric Utilities Corporation
PJM Interconnection, LLC

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Docket No. ER21-2282

AFFIDAVIT OF SEABRON ADAMSON

I, Seabron Adamson, under the penalty of perjury, state that the information contained in the Prepared Supplemental Affidavit of Seabron Adamson on behalf of the PJM Transmission Owners is true, correct, accurate, and complete to the best of my knowledge, information and belief.

Executed this 17 day of September 2021.


Seabron Adamson

ATTACHMENT B

An Example of a PJM TO's Posting of an Election to Fund Network Upgrade

