BEFORE

THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of Duke Energy Ohio for Authority to Establish a Standard Service Offer Pursuant to Section 4928.143, Revised Code, in the Form of an Electric Security Plan, Accounting Modifications and Tariffs for Generation Service.	)))))	Case No. 14-841-EL-SSO
In the Matter of the Application of Duke Energy Ohio for Authority to Amend its Certified Supplier Tariff, P.U.C.O. No. 20.	)))	Case No. 14-842-EL-ATA

REBUTTAL TESTIMONY OF

KENNETH J. JENNINGS

ON BEHALF OF

DUKE ENERGY OHIO, INC.

November 17, 2014

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I. INTRODUCTION AND SUMMARY

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Kenneth Jennings and my business address is 411 Fayetteville Street, Raleigh, North Carolina.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by Duke Energy Carolinas, LLC, an affiliate of Duke Energy Ohio, Inc. (Duke Energy Ohio or Company), as Renewable Strategy and Policy Director. Until very recently, I was employed by Duke Energy Commercial Enterprise, Inc. (DECE), as Director of Market Policy and RTO Services. DECE provides various administrative and other services to Duke Energy Ohio and other affiliated companies of Duke Energy Corporation (Duke Energy).

Q. PLEASE BRIEFLY DESCRIBE YOUR EDUCATION AND PROFESSIONAL EXPERIENCE.

A. I received an A.A.S. in Manufacturing Technology and a B.S. in Manufacturing from Northern Kentucky University in 1991 and 1993, respectively. I also completed a Master's Degree in Business Administration from Thomas More College in 2005. I have attended many seminars, workshops, and forums on generation resource planning, generation unit performance management, and other business and electric and gas utility related topics. Prior to joining Cinergy Corp. (Cinergy), I was employed by Philips Services Corporation as a Project Engineer and by Aurora Casket Company as a Process Engineer. I began working for Cinergy in 1999 in the Engineering and Construction Group of Cinergy Generation Resources, LLC. I have held positions such as Manager of

Business Analysis, Station Performance Engineer at Miami Fort Station in North Bend, Ohio, Technical Analysis Engineer in the Business Development Support Group, and Conditioned Based Maintenance Team Lead over thermal performance of all Cincinnati Gas & Electric generation facilities in Cincinnati. I was promoted to my current position as of October 16, 2014, and to the prior position in April of 2006.

Q. PLEASE DESCRIBE THE DUTIES YOU HAD AS DIRECTOR OF MARKET POLICY & RTO SERVICES.

A. I was responsible for establishing and maintaining a working relationship with PJM Interconnection, L.L.C. (PJM) and stakeholders in order to shape market policy and ensure compliance with market rules in PJM for the coal- and gas-fired generation in PJM that was previously owned and operated by Duke Energy Ohio.

I was also the subject matter expert for Duke Energy with regard to PJM. I actively participated in the PJM stakeholder process, where I was the voting member for Duke Energy. I also followed the Federal Energy Regulatory Commission (FERC) proceedings related to PJM activities and have actively participated in settlements such as the PJM Reliability Pricing Model (RPM) settlement at the FERC.

Q. HAVE YOU PREVIOUSLY TESTIFIED IN THESE PROCEEDINGS?

A. Yes.

Q. ARE YOU FAMILIAR WITH DUKE ENERGY OHIO'S PROPOSAL, IN THESE PROCEEDINGS, REGARDING RIDER PSR (PRICE STABILIZATION RIDER)?

A. Yes, I am.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY IN THESE PROCEEDINGS?

A. Certain intervenors, as well as staff of the Commission, have opined that Rider PSR (Price Stabilization Rider), if approved, will affect the wholesale prices for energy and capacity and will result in anti-competitive conditions in the market.[1] The purpose of my rebuttal testimony is to respond to these allegations and explain to the Public Utilities Commission of Ohio (Commission) how wholesale prices are set in the PJM market. In doing so, I will confirm that Rider PSR, if approved by Duke Energy Ohio's retail regulator, cannot affect the wholesale prices for energy and capacity.

I also address the claim by IGS witness Joseph Haugen that the generating units owned by the Ohio Valley Electric Corporation[2] (OVEC) are external resources that could potentially be eliminated as capacity resources by PJM.[3]

II. RIDER PSR

Q. PLEASE BRIEFLY SUMMARIZE RIDER PSR.

A. Under Rider PSR, Duke Energy Ohio has committed to offering all of the economic value of its contractual entitlement in the Ohio Valley Electric Corporation (OVEC) into the PJM wholesale energy and capacity markets.[4] As Duke Energy Ohio witness William

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[1] *See, e.g.,* Direct Energy Ex. 1 (Direct Testimony of Teresa Ringenbach), pg. 7; Tr. Vol. IX, pg. 2644 (cross-examination of Ringenbach); and IGS Ex. 12, pg. 4 (Direct Testimony of Tim Hamilton), as adopted through IGS Ex. 13 (Supplemental Testimony of Joseph Haugen); Tr. Vol. XII, pp. 3378-3379 (cross-examination of Choueiki); OEG Ex. 1, pg. 21 (Direct Testimony of Alan Taylor); Tr. Vol. VII. Pp. 1970-1972 (cross-examination of Taylor).

[2] The Ohio Valley Electric Corporation owns the Kyger Creek generating station, which consists of five units. Its wholly owned subsidiary, the Indiana Kentucky Electric Corporation (IKEC), owns Clifty Creek generating station, which consists of six units. For the remainder of my rebuttal testimony, I refer to OVEC and IKEC collectively as OVEC, unless otherwise expressly noted.

[3] IGS Ex. 12, pg. 16 (Direct Testimony of Tim Hamilton), as adopted through IGS Exhibit 13 (Supplemental Testimony of Joseph Haugen); Tr. Vol. XV, pp. 4114.

[4] Duke Energy Ohio Ex. 6 (Direct Testimony of William Don Wathen Jr.), pg. 11.

Don Wathen Jr. described during his cross-examination, Duke Energy Ohio will sell its share of OVEC's available generation into PJM's energy markets when the market price exceeds the variable cost of generation for that share.[5] Duke Energy Ohio will then net the revenues that it receives from its wholesale sales of capacity and energy to PJM against the wholesale costs allocated to it under the FERC-approved Inter-Company Power Agreement (ICPA). The net benefit (positive or negative) of these wholesale transactions will be passed along to all customers on a nonbypassable basis for as long as Duke Energy Ohio is entitled to energy and capacity under the ICPA.

Q. PLEASE DESCRIBE HOW WHOLESALE CAPACITY PRICES ARE SET BY PJM.

A. PJM's reliability pricing model (RPM) was established in 2006 as a result of a settlement at the FERC and was implemented for the first time in the 2007/2008 delivery year. RPM provides a mechanism through which PJM secures financially binding commitments from market participants to provide the resources needed to maintain reliability and allocates the resulting costs to load serving entities (LSEs). Under the RPM, commitments to supply the capacity needed to meet reliability requirements are established through two means: (1) the procurement of capacity through a market-based, PJM-administered forward auction process; or (2) the obligation of an individual entity, under a fixed resource requirement, to provide the capacity necessary to maintain reliability within its metered boundaries.

[5] Tr. Vol. II, pp. 412-413 (cross-examination of William Don Wathen Jr.).

For purposes of this response, I will focus on the auction process, as that procurement method is the only one relevant, under Rider PSR, to Duke Energy Ohio's contractual entitlement under the ICPA.

Each year, PJM conducts a base residual auction (BRA) in which resources are procured to meet the pool-wide and locational requirements in PJM for the twelve-month planning year commencing approximately three years later. PJM acts as a central buyer in the auction and then resells the capacity back to LSEs on a pro rata basis, in proportion to each LSE's share of peak PJM coincident peak load and peak load contributions . As currently constructed, the BRA includes the initial auction described above and three subsequent, incremental auctions. The price charged to each LSE, based on the BRA and the incremental auctions, is referred to as the final zonal capacity price.

Q. HAS PJM ESTABLISHED A MINIMUM OFFER PRICING RULE APPLICABLE TO THE BRA?

A. RPM includes a minimum offer price rule, or MOPR, which governs bidding by new generators. Under MOPR, PJM administratively calculates the minimum offer price each year, prior to the annual BRA. The MOPR is not applicable to existing generation that has previously cleared an RPM auction. Thus, existing generation, which cannot avoid its fixed costs without retiring the resource, can offer into the BRA at zero, if desired, or as high as its offer cap as calculated by the PJM Independent Market Monitor (IMM). Generators subject to the MOPR can offer at the lower of their actual "going forward" cost or the administratively determined MOPR value for the respective technology (*i.e.*, simple-cycle combustion turbine, combined-cycle combustion turbine, or integrated

gasification combined cycle). The actual "going forward" cost is defined by PJM and the IMM as Avoidable Cost Recovery and includes all fixed costs and/or any costs that are not included as variable costs in the energy offer; less historic net revenues from energy and ancillary services. The administratively determined MOPR is calculated from the quadrennially updated CONE value adjusted annually by the Handy Whitman Index value for utility construction escalation values and netted of historic net revenues for energy and ancillary services based on the respective technology. All generation that clears the BRA, including offers at zero and offers at the MOPR, is paid the BRA clearing price, regardless of the offer price.

Q. HOW ARE WHOLESALE ENERGY PRICES DETERMINED IN PJM?

A. PJM operates a day-ahead energy market in which hourly locational marginal prices (LMPs) are calculated for the next operating day based upon generation offers, demand bids, and bilateral transactions. Capacity resources that clear the BRA or an incremental auction have a must-offer obligation into the day-ahead market. The must-offer obligation in PJM's Operating Agreement provides that market sellers owning or controlling the output of generation capacity resources that have been committed as capacity for PJM shall submit offers into the day-ahead energy market.[6]

The day-ahead energy market uses a least-cost, security-constrained, unit commitment and dispatch model to calculate hourly LMPs for the next operating day. Generation offers represent the prices at which each supplier is willing to sell energy in the day at various levels of output. PJM uses its security-constrained dispatch model to match up the available generation with the available load in the least-cost manner. To the

[6] Amended and Restated Operating Agreement of PJM Interconnection, L.L.C., Rate Schedule FERC No. 24.

extent suppliers' offers are accepted by PJM in the day-ahead energy market, they will be compensated at the LMP. As a general rule, generation offers include all of the variable costs of production. This means that, in the event the supplier is awarded a day-ahead payment, the revenue will be equal to or greater than the cost of generation or, if it is not, it will be kept whole to its cost through balancing and operating reserve credits.

Q. IGS WITNESS HAUGEN HAS TESTIFIED THAT, IF RIDER PSR WERE APPROVED, "IT WOULD REQUIRE THE COMMISSION TO REGULATE WHOLESALE ENERGY AND CAPACITY PRICES.[7] DO YOU AGREE WITH THIS ASSERTION?

A. No.

Q. PLEASE EXPLAIN.

A. Rider PSR, if approved, will not and cannot affect the wholesale capacity revenue that the Company will receive from PJM. As I mentioned previously, wholesale capacity prices are exclusively subject to the jurisdiction of the FERC and are established pursuant to FERC-approved tariffs for PJM; namely, the BRA, on a three-year forward basis. Thus, wholesale capacity prices for the 2015/2016, 2016/2017, and 2017/2018 planning years have already been determined.

With regard to periods beyond the 2017/2018 planning year, Duke Energy Ohio has committed to offering all of the capacity associated with its contractual entitlement under the ICPA into the BRA. Because Duke Energy Ohio has a contractual entitlement until 2040 and because Duke Energy Ohio cannot unilaterally retire the OVEC units,

[7] IGS Ex. 12 (Direct Testimony of Tim Hamilton), as adopted through IGS Ex. 13 (Supplemental Testimony of Joseph Haugen), pg. 4.

Duke Energy Ohio will continue to bid its share of OVEC's existing generation into future BRAs. To maximize gains or minimize losses under Rider PSR, Duke Energy Ohio will bid its share into the BRA at zero, thereby guaranteeing that it will always receive capacity revenue at the BRA price. As I stated earlier, existing generation is not subject to the MOPR and, whether or not Rider PSR is approved, Duke Energy Ohio will bid into the BRAs. Thus, there is no impact to the BRA clearing price.

Since Duke Energy Ohio only owns 9 percent of the OVEC resources, it cannot unilaterally decide to retire the units[8] and is therefore unable to avoid going-forward costs in future years. Thus, if these units do not clear in the RPM auctions, Duke Energy Ohio remains obligated for fixed costs associated with these assets without receiving any capacity revenues. Without any way of avoiding the future fixed costs, Duke Energy typically has and will likely continue to offer these units at zero. Therefore, Rider PSR has no impact on PJM capacity markets, because in no way is the Company's behavior changed by approval of Rider PSR.

Q. IGS WITNESS HAUGEN HAS ALSO TESTIFIED THAT, IF RIDER PSR WERE APPROVED, THE COMMISSION WOULD BE ESTABLISHING WHOLESALE ENERGY PRICES.[9] DO YOU AGREE WITH THIS ASSERTION?

A. No.

Q. PLEASE EXPLAIN.

A. Duke Energy Ohio has committed, as part of its Rider PSR proposal, to offer all of the energy associated with its contractual entitlement under the ICPA whenever its variable

[8] There is no expectation that the OVEC-owned generating assets will be retired prior to 2040.
[9] IGS Ex. 12 (Direct Testimony of Tim Hamilton), as adopted through IGS Ex. 13 (Supplemental Testimony of Joseph Haugen), pg. 4.

costs, which would include fuel, emission allowance costs, etc., are lower than the marginal cost of energy as calculated by PJM for the day-ahead awards. There is no subjective determination to be made in connection with Duke Energy Ohio's offer, as cost information for the OVEC-owned units has been and will continue to be provided by OVEC and Duke Energy Ohio will use that information in making its generation offers for the day-ahead energy market.

Q. IGS WITNESS HAUGEN HAS SUGGESTED THAT A COMPANY THAT HAS GUARANTEED COST RECOVERY WILL MAKE OFFERS INTO THE PRA THAT ARE NOT COST-BASED AND THUS REFLECT AN UNCOMPETITIVE POSITION.[10] DO YOU AGREE?

A. No. As an initial matter, an offer of less than costs is not per se anti-competitive. Rather, the BRA process excepts existing generators from the MOPR and the vast majority of resources have offered into the BRA at zero. (*See, e.g.,* results for the last two BRAs, as reported on PJM's website, where 140,000 of 170,000 MW offered in at zero). These offers, which are subject to market power mitigation by the IMM, are not anti-competitive. Further, as I understand Mr. Haugen's testimony, he was concerned that an entity may not have the appropriate motivation when bidding into the BRA. Here, Duke Energy Ohio's objective is to maximize revenues subject to Rider PSR. In this regard, Duke Energy Ohio has a valid reason to offer in at zero so that the resources can clear the BRA and position Duke Energy Ohio to receive capacity revenue that accrues to its customers.

[10] Tr. Vol. XV, pp. 4087-4088 (cross-examination of Haugen)

Q. CERTAIN WITNESSES HAVE TESTIFIED THAT DUKE ENERGY OHIO WILL NOT HAVE ANY INCENTIVE TO MAXIMIZE WHOLESALE CAPACITY AND ENERGY REVENUES IF RIDER PSR IS APPROVED.[11] DO YOU AGREE WITH THIS STATEMENT?

A. No. Although there is no present intention to retire the OVEC-owned generating units, Duke Energy Ohio cannot unilaterally retire those units. Its objective, therefore, has always been to maximize the wholesale revenues associated with its 9 percent contractual entitlement. This objective will not change if Rider PSR is approved, as evident from the proposal to bid into the BRA and day-ahead markets.

Furthermore, mandated review of the Company's bidding strategies should resolve any such concern. Staff witness Hisham Choueiki proposed that, if the Commission approves the Company's proposed Rider PSR, the Company should submit to periodic audits conducted by the Staff to "monitor/evaluate the bidding strategies used for the OVEC generating stations."[12] The Company is willing to submit to such a review process if it will ameliorate the Staff's, the Commission's, or Intervenors'[13] concerns about the bidding strategies employed by the Company related to its entitlement of OVEC's capacity and energy.

Q. IGS WITNESS HAUGEN HAS SUGGESTED THAT EXTERNAL RESOURCES, SUCH AS THE OVEC-OWNED GENERATING ASSETS, COULD BE

[11] Tr. Vol. XV, pg. 4095 (cross-examination of Haugen); Tr. Vol. XII, pp. 3377, 3396-3398 (cross-examination of Choueiki); OEG Ex. 1, pg. 21 (Direct Testimony of Alan Taylor); Tr. Vol. VII. Pp. 1970-1972 (cross-examination of Taylor).
[12] Staff Ex. 1 (Direct Testimony of Hisham Choueiki), page 16.
[13] *See* Tr. Vol. XV, pp. 4095-4096 (cross-examination of Haugen).

PRECLUDED FROM THE PJM MARKETS.[14] DO YOU AGREE WITH THIS STATEMENT?

A. In light of the new, FERC-approved capacity import limit (CIL) rules, I find this very unlikely.

Q. WHAT ARE THE NEW CIL RULES?

A. On April 22, 2014, the FERC approved rules proposed by PJM regarding import limits associated with external resources wishing to participate in PJM's capacity market.[15] These rules were needed to mitigate the potential for external resources to clear a BRA and then subsequently fail to deliver as a capacity resource in the associated planning year due to the inability to secure firm transmission into PJM. PJM was also concerned that external resources that cleared the BRA might not reflect the cost of delivering capacity into PJM, thereby suppressing the capacity prices. Through its proposal, PJM offered modification of the Reliability Assurance Agreement (RAA) and its own Tariff to recognize a limit on the transmission system's ability to import capacity into PJM from external generation resources.

The approved CIL rules regarding capacity import limits do provide for an exception. Specifically, the FERC determined that external resources that met specific criteria did not present a firm transmission risk. To qualify for the exception, the external resource must, at the time of offer in the BRA, have (1) obtained firm transmission; (2) met all requirements to be a pseudo-tied" resource in PJM; and (3) agreed to be subject to the same "capacity must-offer" requirement as PJM internal resources. Again, the FERC

[14] IGS Ex. 12, pg. 16 (Direct Testimony of Tim Hamilton), as adopted through IGS Exhibit 13 (Supplemental Testimony of Joseph Haugen); Tr. Vol. XV, pp. 4114 (cross-examination of Haugen).
[15] ER14-503.

approved these rule revisions, including the conditions required for exceptions for certain external resources.

Q. WHAT IS THE SPECIFIC "CAPACITY MUST-OFFER" REQUIREMENT TO WHICH THE RESOURCE MUST AGREE?

A. As PJM proposed and as approved by the FERC, the resource must agree to be "subject to the same obligations imposed on Generation Capacity Resources located in the PJM Region by Section 6.6 of Attachment DD of the PJM Tariff to offer their capacity into RPM Auctions."[16] Importantly, under the new CIL rules, this agreement can only be negated by approval of the Independent Market Monitor.

Q. HOW WILL PJM TREAT EXTERNAL RESOURCES THAT MEET THE REQUIREMENTS FOR EXEMPTION FROM THE CIL RULES?

A. PJM treats pseudo-tied generating assets as internal resources and they are dispatched in the same fashion as internal generation. It does not matter whether the units are physically located in PJM's footprint or not. In this regard, PJM includes pseudo-tied generation in its day ahead energy market, just like internal generation.

Q. IS IT POSSIBLE THAT PJM COULD CHANGE ITS POSITION WITH RESPECT TO TREATING PSEUDO-TIED GENERATION AS AN INTERNAL RESOURCE?

A. While it's possible that PJM could change any provision of its tariffs, I do not believe such a change to this rule is likely or feasible. First, a change, such as changing the rules related to pseudo-tied generation, would require approval by the FERC. PJM would have to decide to reverse its position that the ability to rely on imports is critical. Finally,

[16] RAA, Section 1.7(A)(iii).

while many may argue that PJM has made sweeping changes to its tariff in the past, those changes have always been in response to sincere and credible reliability concerns such as when they developed the capacity import limit rules. External capacity market sellers were committing capacity into BRAs without having firm transmission and in some cases without any intent in delivering the capacity to PJM in the relative delivery year. This type of seller was willing to take on the commitment risk with the intent of buying out in a subsequent incremental auction with hopes of making a profit from the arbitrage. PJM has found that parties which have already procured firm transmission and have committed to be pseudo tied in nearly every case delivers the capacity in the delivery year. Another risk that PJM identified in the capacity import filing was even if a resource did get firm transmission, if it is block scheduled to PJM, capacity deliverability from the external balancing authority can curtail the schedule under an emergency transmission load relief event (TLR-5). Pseudo-tied units are not subject to schedules or TLR-5 curtailments because NERC does not even consider the power flows as interchange and thus does not require pseudo-tied unit output to be tagged transactions and therefore cannot be curtailed by another balancing authority. PJM went as far as saying that units that are pseudo-tied are the electrical equivalent of an internal unit because of things already stated, plus PJM can and does actually control the output of the pseudo-tied unit for economics and congestion management and also calculates LMPs at the resource generator buss just like internal resources. Since these resources are considered electrically equivalent to internal resources they do not present any more reliability

concern than an internal resource and absent a reliability concern PJM will not likely ever discriminate against them.

III. CONCLUSION

Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes.

Summary: Testimony Rebuttal Testimony of Kenneth J. Jennings on Behalf of Duke Energy Ohio, Inc. electronically filed by Dianne Kuhnell on behalf of Duke Energy Ohio, Inc. and Spiller, Amy B. and Watts, Elizabeth H. and Kingery, Jeanne W. and Rocco D'Ascenzo