MONITORING ANALYTICS, LLC
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BEFORE THE NEW JERSEY BOARD OF PUBLIC UTILITIES

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In the Matter of the Implementation of L. 2018, c. 16 Regarding the Establishment of a Zero Emission Certificate Program for Eligible Nuclear Power Plants	)	**Docket No. EO18080899**
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REPLY OF THE INDEPENDENT MARKET MONITOR FOR PJM

Monitoring Analytics, LLC, acting in its capacity as the Independent Market Monitor for PJM ("Market Monitor"), submits this response to the prompt from Staff dated March 1, 2019 in this proceeding under New Jersey Zero Emissions Credits ("ZEC") program.

I. RESPONSE TO STAFF PROMPT

Staff requests an answer to the following prompt:

> Please describe how generators bidding into the PJM Energy and Capacity Markets typically cover their operational and market risks. Specifically, please discuss whether these risks are built into pricing bids (as defined by the PJM market guidelines), or assumed by the bidder?

Competitive generator offers in the PJM energy market equal the short run marginal costs of generating energy. Short run marginal costs in the energy market are comprised of the costs of fuel and consumables. If a unit covers its short run marginal costs, it is more profitable to operate for the hour or the day than to not operate.

Competitive offers in the capacity market equal the marginal costs of capacity. The marginal costs of capacity are comprised of net avoidable costs (ACR), the costs that are avoidable when a unit does not operate, minus the net revenues from the energy and ancillary services markets. If a unit covers its avoidable costs, also termed going forward costs, it is more profitable to operate for the year than to not operate.

Competitive offers in the energy market do not include risk adders. Under the PJM Market Rules cost-based offers in the energy market may include a 10 percent adder designed to address the uncertainty about the impact of ambient conditions on unit costs and output for combustion turbine peaking units. The 10 percent adder was included prior to the implementation of PJM markets in 1999. The owners of coal units, facing competition, typically exclude the additional 10 percent from their actual offers. The owners of many gas fired and oil fired units have also begun to exclude the 10 percent adder. Nuclear units' cost offers are irrelevant because nuclear units generally self schedule in order to ensure that they always run and therefore nuclear units do not include a 10 percent adder.

Competitive offers in the capacity market may include a risk component under the PJM Market Rules. The PJM tariff defines that component as the quantifiable and reasonably supported cost of mitigating the risks of nonperformance. That risk component is the probability weighted value of paying net capacity market performance penalties, accounting for both expected bonus payments and nonperformance charges (penalties) under the capacity performance capacity market design. The Market Monitor has observed that market participants generally do not include risk adders in capacity market offers and that, when they are included, calculated risk premia are very small. Under PJM's Capacity Performance market rules, most units offer at or below the default offer cap, and therefore do not submit avoidable cost data and therefore do not include any risk premia.

Generating units that offer less than the clearing price in both energy and capacity markets receive inframarginal rents, the difference between the clearing price and the offers in both the energy market and the capacity market. Inframarginal rents contribute to units' fixed costs including return on capital (profit) and return of capital (depreciation) and may exceed fixed costs or be less than fixed costs. Nuclear power plants generally receive substantial inframarginal rents.

Operational risk is within the control of the unit owner. The operational costs incurred by a unit include the costs of maintaining the safety of the unit and minimizing the risks of operating the unit. These costs are included in the costs of the unit and are covered by revenues.

Units in competitive markets do not include risk adders based on PSEG's approach to market or operational risk because such offers would be above the competitive level, such units would not clear as a result, such units would not receive capacity market revenues and such units would retire as a result of not being profitable. Adding such a risk premium would actually create the risk of not clearing. If the distribution of energy market net revenues incorporated in the capacity market offer includes the same probability of higher and lower net revenues, the competitive offer is just net ACR based on expected energy market revenues, without a risk premium. If a unit were to add only the worst case possible net revenues, the tail end of the distribution, the capacity market offer would exceed the competitive offer and the unit might not clear the market when it would have been profitable to do so. Competitive markets result in competitive offers that do not include such a risk premium.

Unit owners also have market options for managing operational and market risk. Insurance markets and hedging products are both available.

The Market Monitor respectfully requests that the Board accept these comments and take whatever action, if any, that it deems appropriate.

Respectfully submitted,

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Dated: March 6, 2019

CERTIFICATE OF SERVICE

I hereby state that I have this day served the foregoing document by hard and electronic copy upon each of the Board, Rate Counsel and the Division of Law, and by electronic copy on the filing companies and other potentially interested parties.

Dated at Eagleville, Pennsylvania,
this 6th day of March, 2019.

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