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September 30, 2019

By Hand Delivery and Electronic Mail
Honorable Aida Camacho-Welch, Secretary
New Jersey Board of Public Utilities
44 South Clinton Avenue, 9th Floor
P.O. Box 350
Trenton, New Jersey 08625-0350

Re: 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
BPU Docket No. EO18080899

Dear Secretary Camacho-Welch:

Please accept this original and ten (10) copies of the comments of the Division of Rate Counsel ("Rate Counsel") in the above-referenced matter. These comments are being submitted pursuant to the Board of Public Utilities' August 21, 2019 public notice in this matter. Pursuant to that notice, an electronic copy will be emailed to Zec.comments@bpu.nj.gov.

We are enclosing one additional copy of the comments. Please stamp and date the extra coy as "filed" and return it in the self-addressed stamped envelope.

Respectfully submitted,

STEFANIE A. BRAND
Director, Division of Rate Counsel

By: Brian Lipman /F.T.-F.
Brian Lipman, Esq.
Litigation Manager

Case mgmt
J. Peterson

BL
Enclosure

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

BPU Docket No. EO18080899

Public Law 2018, Chapter 16, the Act establishing Zero Emission Certificates or ZECs placed additional requirements on the Board beyond granting subsidies to eligible nuclear power plants. This includes determining the appropriate subsidy to actually be paid to the units during the first three year period to ensure no double payments, a process to determine whether additional three year periods are appropriate, and if so, whether a different rate should be used for the subsidy. It is important that the Board begin this process now so that if the subsidies remain in place for the initial three year period and after, the Board and other interested parties have sufficient notice and procedural processes in place to make those determinations.

Avoiding Double Payment

The ZEC legislation provides that:

> To ensure that a selected nuclear power plant shall not receive double-payment for its fuel diversity, resilience, air quality, or other environmental attributes, the board shall annually determine the dollar amount received by the selected nuclear power plant in an energy year pursuant to a law, rule, regulation, order, tariff, or other action of this State or any other state, or a federal law, rule, regulation, order, tariff, or other action, or a regional compact referenced in paragraph (4) of subsection e. of this section. Notwithstanding paragraph (2) of this subsection, the number of ZECs purchased by each electric public utility from a selected nuclear power plant for an energy year shall be reduced by the number of ZECs equal in value to the dollar amount determined by the board in this paragraph, multiplied by the percentage of electricity distributed in the State by the electric public utility as compared to other electric public utilities in the State. To the extent that the board determines that a selected nuclear plant receives revenues for its fuel diversity, resilience, air quality, or other environmental attributes, the board shall immediately reduce the number of ZECs on a prospective basis consistent with the level of such revenues.

<u>N.J.S.A.</u> 48:3-87.5(i)(3).

The statute intentionally provides an expansive list of attributes to be considered when determining proper deductions to the ZEC subsidy. The Legislative intent was to protect ratepayers from paying twice for the same attributes. Significantly, the list of attributes is not limited solely to environmental attributes, but includes payments for fuel diversity and resilience. The answer as to what revenues to consider, however, is not an easy one to address. Many of the revenues that the nuclear units will receive based upon these attributes are not easily quantified. The Board will likely need to retain an expert to review the market results, model possible alternate market results and assign a value to each of the market revenues the nuclear units receive based upon their various attributes.

First, the Board must consider the value of the allowances the three nuclear units receive for New Jersey re-entering the Regional Greenhouse Gas Initiative ("RGGI"). While it is true that the nuclear units will not receive direct payments under RGGI, they do, however, receive a real and clearly intended benefit from RGGI. Under RGGI, fossil power plants that emit carbon dioxide pay for allowances to continue operating. These include fossil generation units owned by both PSEG and Exelon Generation. Those units not emitting carbon dioxide do not pay this charge. The entire point is to provide an economic disincentive for emitting carbon dioxide. Through this process, plants, such as the nuclear power plants at issue here, receive a competitive advantage vis a vie competing carbon dioxide emitting power plants. The nuclear power plants are receiving this market benefit on the sole basis of their air quality and environmental attributes. The advantage translates to additional revenue for these plants. The Board, therefore, should quantify the value of that market benefit and deduct it from the annual ZEC subsidy.

Second, there are a significant number of initiatives pending at the regional grid operator, PJM, and before the Federal Energy Regulatory Commission ("FERC") that may impact the nuclear units' market revenues. It appears likely that FERC will apply some type of Minimum Offer Price Rule ("MOPR") to nuclear units in PJM receiving a subsidy such as the ZEC. In such an instance, PJM will set an administrative offer price for the nuclear units in the PJM capacity market. That price will be PJM's calculation of the bid the nuclear units would submit absent the subsidy, presumably higher than the units' owners would otherwise submit. The application of MOPR will lead to one of two results: the units will clear at the higher bid price or they will fail to clear. If the units clear at a higher bid price, this will likely drive up the clearing price for the PJM capacity market. Essentially, this means that the nuclear units will receive more capacity revenue than they would have absent the MOPR. The only reason the price is being driven up is because these units are receiving a subsidy, allegedly because of their fuel diversity, resilience, air quality or other environmental attributes. Therefore, if FERC imposes a MOPR and if the units clear, the Board should calculate the increase in capacity revenues earned by the nuclear units due to the higher clearing price and deduct that amount from the ZEC subsidy. Otherwise, ratepayers will pay these units a subsidy and a higher capacity price—all for the same attributes. If the MOPR causes the units to fail to clear the PJM capacity auction, then this issue is likely moot, as the plants may shut down anyway.

FERC is also considering PJM's Energy Price Formation proposals. At this time, it is unclear what the result of FERC's action will be, but it is likely that the nuclear units will see increased energy revenue from the Energy Price Formation resolution. To the extent any of that increase is based upon the units' fuel diversity, resilience, air quality, or other environmental attributes, those increased revenues should be deducted from the ZEC subsidy.

MOPR and Energy Price Formation, however, are not the only mechanisms at the federal market level that will increase the nuclear units' revenues. PJM is currently considering additional payments to units based upon their resiliency attributes. Three to four PJM stakeholder task forces are actively considering these issues and PJM will likely file at FERC for additional market revenues for units providing these attributes. Similarly, PJM is looking at fuel security issues. While fuel diversity is not an issue per se, PJM will look at fuel diversity as a component of fuel security. Therefore, the nuclear units may receive additional revenues for this attribute. Thus, the nuclear power plant will receive market revenues from PJM and subsidies from New Jersey for the same attribute, with New Jersey ratepayers making the double payment.

These changes, however, are unlikely to be a straight subsidy based upon megawatts produced by the units. Rather, they are likely to be market changes designed to produce higher market revenues for generation units exhibiting favored attributes. To the extent PJM amends its tariff to address any of these issues, the Board should determine the value of the higher revenues earned by the nuclear units and deduct that from the ZEC subsidy. This is extremely important in protecting ratepayers and ensuring that the "selected nuclear power plant shall not receive double-payment." N.J.S.A. 48:3-87.5(i)(3).

As noted initially, these will be very complicated calculations to make, requiring significant market information and modelling. The Board should ensure that it has sufficient time to make these calculations and vet them with all interested parties, including Rate Counsel, PJM and the PJM Independent Market Monitor ("IMM"). It is critical to include PJM and the PJM IMM, as much of the information needed will be from the PJM markets. The Board should require that each unit provide the Board with all market revenues received regardless of which specific market, PJM or otherwise. This should not be just raw data, but a breakdown of each revenue source and the amount earned from that revenue source. It is then incumbent on the Board and the other interested parties to determine the amount the units would have earned absent RGGI, MOPR or any other PJM tariff changes designed to increase revenue for units providing fuel diversity, resilience, air quality, or other environmental attributes. Because ZEC payments are due within 90 days of the end of the energy year (August 29), the Board should begin the process as early as possible to ensure all parties have sufficient time to properly calculate the subsidy. Rate Counsel suggests that the analysis begin with 10 months of actual market revenues and with two months of projected data, to be submitted on April 1st of each year. A true-up could be submitted by June 15th. While still a tight timeframe, this should give all parties sufficient time to perform appropriate calculations.

Definition of full or near full capacity

The ZEC legislation requires that a "selected nuclear power plant shall annually certify to the board that it will continue operations at full or near full capacity for the duration of the period of its eligibility to receive ZECs, except with respect to nuclear power plant shutdowns for necessary maintenance and refueling." N.J.S.A. 48:3-87.55(h)(3).

The Board's April 18, 2019 Order finding the Salem 1, Salem 2, and Hope Creek units eligible to receive ZECs (the "ZEC Order"[1]) is unclear as to the total energy production relied upon by the Board to grant the ZEC subsidies, finding only that "the Ranking Team has determined that the total combined number of megawatt-hours of electricity produced in Energy Year 2017 by the three eligible nuclear power plants does not exceed 40 percent (40%) of the total number of megawatt-hours of electricity distributed by the electric public utilities in Energy Year 2017." (ZEC Order, p. 10).

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[1] I/M/O 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; and Application for Zero Emission Certificates of Salem 1 Nuclear Power Plant, Docket No. EO18121338; and Application for Zero Emission Certificates of Salem 2 Nuclear Power Plant, Docket No. EO18121339; and Application for Zero Emission Certificates of Hope Creek Nuclear Power Plant, Docket No. EO18121337 (April 18, 2019).

For nuclear units, the energy production (MWh) is a more meaningful metric since the units are designed to run as continuously as possible over the course of the year. In public filings, the nuclear power units' owners provided the following information:

Unit	Reported Generation[2]	Capacity Factor
Salem Unit #1	10,177,507 MWh	97.9%
Salem Unit # 2	8,717,600 MWh	84.6%
Hope Creek	9,546,684 MWh	88.8%

As noted above, the ZEC Order is unclear as to the total energy production relied upon by the Board to grant the ZEC subsidies. In order to ensure that the energy production at full capacity is accurately calculated, the Board should take an average of the net megawatt-hours generated for the last three years for each unit. This should ensure that no changes were made in contemplation of future subsidies and also account for periodic fueling outages that will lower the amount of energy generated. Once the total megawatts-hours that represents production at full capacity is calculated, energy production at near-full capacity should be considered a number within 10% of that number. There should be no exceptions other than those provided in the statute for maintenance and refueling allowed. Anything less should be deemed a failure of the units to meet this statutory requirement to receive subsidies.

Process for Additional Eligibility Periods

The Board's ZEC Order provides ZEC subsidies to the nuclear units for a period of three years, to end May 31, 2022. If the nuclear power plants' owners wish to continue to receive subsidies, they must demonstrate to the Board their eligibility for those subsidies. The Act provides:

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[2] See 2018 EIA-923 and 2018 PSEG 10-K.
https://www.ezodproxy.com/pseg/2019/ar/images/PSEG_10K2018.pdf

> No later than 13 months prior to the conclusion of the initial eligibility period established pursuant to paragraph (1) of this subsection, and no later than 13 months prior to the conclusion of each three energy year eligibility period thereafter, a nuclear power plant may demonstrate its eligibility to the board and the board may certify the nuclear power plant's eligibility to receive ZECs for additional eligibility periods of three energy years, consistent with the provisions of this act.
>
> N.J.S.A. 48:3-87.5(h)(2)

The statute makes clear that it is incumbent upon the nuclear power plant owner to demonstrate eligibility to receive a ZEC subsidy for an additional three years. This requires the nuclear units to provide sufficient information that each individual unit is eligible for a subsidy. The Board has already created a process to make this determination. The only difference in this instance is that the Board has better control over the timing of the process. The Board should require the nuclear power plant owners who choose to continue to receive ZEC subsidies to submit an application with at least the same information as was filed for the initial ZEC subsidy. In an effort to save time, the Board could require a revised application that provides answers to discovery submitted in the prior ZEC proceeding. This updated application will provide the baseline data needed to determine if any of the units are in fact eligible for a three-year ZEC subsidy. Relevant parties should be permitted to intervene, serve discovery and ultimately file comments with the Board. To the extent there are disputed facts, the Board will need to conduct an evidentiary hearing to resolve those disputes.

As for timing, the statute requires the Board to complete the process for determining eligibility for another three-year period no later than April 1, 2021. To provide all parties sufficient time to review any request for additional subsidies, the Board should require any applications to be filed no later than November 1, 2020. At its October 2020 agenda, the Board can open a new docket for applicants to request an additional eligibility period and provide a date in November for interventions. The process should allow for the full participation of all interested parties.

Modification of per Kilowatt Charge

The ZEC Act requires the Board to review the $0.004 per kilowatt hour charge initially established to fund the ZEC subsidies. Specifically, the Act states, "Notwithstanding the provisions of paragraph (a) of this subsection, and **to ensure that the ZEC program remains affordable to New Jersey retail distribution customers**, the Board may, in its discretion, reduce the per kilowatt-hour charge imposed [for the first eligibility period] provided that the board determines the reduced charge will nonetheless be sufficient to achieve the State's air quality and other environmental objectives by preventing the retirement of the [eligible] nuclear power plants." N.J.S.A. 59:3-87.5(j)(3)(a) (emphasis added). The Board, therefore, may lower—but not raise—the level of the ZEC subsidy if a continued subsidy is deemed needed.

The Board has a mandate to ensure that rates are just and reasonable. N.J.S.A. 48:2-21(b) (which obligates the BPU to ensure that any rates it approves are "just and reasonable") and N.J.S.A. 48:3-1 (which prohibits utilities from charging rates that are unjust or unreasonable). Indeed, our New Jersey Constitution requires that rates be just and reasonable. In re Proposed Increased Intrastate Industrial Sand Rates, 66 N.J. 12, 23-24 (1974). Therefore, the rate imposed on ratepayers to support any subsidy must be just and reasonable. In order to determine the reasonableness of the rate, the Board must take into account all other rate increases faced by New Jersey's ratepayers. For example, ratepayers are facing increases to help pay for offshore wind, solar, energy efficiency and resiliency programs. As ratepayers are not an endless source of capital, affordability needs to be a major consideration in this process.

In setting the rate, the Board needs to take into consideration the actual needs of the nuclear power plants. Significantly, that analysis was never done when the initial $0.004 per kilowatt hour rate was set. The Board did not conduct any analysis to see if the subsidy rate was the appropriate amount. Therefore, there should be no presumption that the $0.004 per kilowatt-hour rate is in fact the correct rate. Rather, the Board must conduct an independent analysis of the actual need for "emissions avoidance benefits" of each nuclear power plant to determine the proper rate, if any, of subsidy.

This analysis was conducted by the Board's expert regarding the initial eligibility period, Levitan & Associates. Thus, the revised application materials and subsequent discovery should provide sufficient data to make this determination. Specifically, the Board should look at each unit's actual and projected revenues as compared to that unit's avoidable costs. To the extent the units are profitable, no subsidy is needed. To the extent the Board determines, based on actual data from each individual unit, that a subsidy is in fact needed, the Board should limit that subsidy to the amount actually needed. The Board has an obligation to ensure that rates are just and reasonable and that the ZEC subsidies are affordable for New Jersey's ratepayers. It can only meet this mandate with an analysis of each unit's actual revenues and costs and a determination of actual need.[3]

To achieve its mandate, the Board should have a transparent process. Rate Counsel, the IMM and to the extent possible, PJM should all have the ability to review, probe and comment

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[3] Although the section of the ZEC statute discussing the potential reduction of the subsidy rate in subsequent eligibility periods states that the new rate should be based on need, i.e., sufficient to prevent retirement of eligible nuclear power plants, elsewhere the statute claims that the ZEC subsidy represents "the fuel diversity, air quality, and other environmental attributes of one megawatt-hour of electricity generated by an eligible nuclear power plant." N.J.S.A. 48:3-87.4. To the extent the Board looks beyond need, the Board must create a process to closely examine how to calculate the environmental, and fuel diversity attributes, including how it should be calculated and the true avoidance value properly attributable to these power plants.

on the revenue and cost data provided by the applicants. All data provided should be certified and the source of the data clearly indicated. This data should be provided as part of the initial application for an additional subsidy, and subject to the same process outlined previously. To the extent any data is public, that data should be provided to all interested parties, and all parties should be permitted to participate in the process.

Study of ZEC Subsidies

By May 23, 2028, the Board must submit a written report evaluating the efficacy of the ZEC subsidies. Specifically, the Board shall evaluate the ZEC's "effect on the premature retirement of nuclear power plants, its effect on the air quality and environment in the State, and its contribution to a more reliable energy supply by assuring fuel diversity. The study shall also evaluate the program's benefits and costs to ratepayers." N.J.S.A. 48:3-87.6(a). To effectuate this study, the Board will require significant information regarding both the actual revenue and costs of the nuclear units and what those revenues and costs would be absent any subsidies.

The Board should review the full books of each of the nuclear power units receiving a subsidy to determine exactly how the subsidy was used and whether the unit would have been profitable absent the subsidy. The Board should obtain sufficient information to calculate the Return on Equity earned by each unit with the subsidy and what it would have been absent the subsidy. Moreover, the Board should obtain information on all capital improvements made at each of the nuclear units that received a subsidy to determine if those improvements were necessary or optional and whether they would have been made absent a subsidy.

With regard to the cost benefit analysis, the Board must go beyond the simple cost of the subsidies, and look to any additional costs to ratepayers and the State. Assuming the subsidies actually kept the nuclear power plants operational (in other words that the plants would not have operated absent the subsidy), the Board should consider the market impact of keeping those plants operational. The Board's analysis must consider the full cost in order to be meaningful.

Dry Cask Storage

The ZEC Act requires the owner of a nuclear power plant receiving a ZEC subsidy to within two years conduct a study and issue a written report to determine the optimal use of dry cask storage. In doing so, the owner should consider environmental impacts, worker safety and cost impacts. N.J.S.A. 48:3-87.5(m). The Board should provide the nuclear power plant owners with some guidance on what is expected by those studies. Rate Counsel will not weigh in on the merits of dry cask storage or what methodology is appropriate. Rate Counsel does offer the following as recommendations to guide the study.

The study should also determine what, if any alternatives exist and address the same considerations for such alternatives. The goal should be safe, cost-effective storage. Of particular importance to the State should be the proven ability to properly store spent nuclear fuel. This is not a time for innovation. The process chosen should be proven. Whatever storage process is used should be built and maintained by qualified contractors with a strong history of properly protecting spent nuclear fuel.

Conclusion

The ZEC subsidies will have a major impact on ratepayers for the next three years. Before they are continued for another three years, the Board must take a hard look at whether they are in fact needed and whether they are actually achieving the goals set forth in the legislation. This requires a full review of all the relevant data by all interested parties. It requires the Board to conduct a full and thorough analysis and to make a reasoned decision as to whether the nuclear power plants will continue without any subsidy. If the Board finds an additional subsidy is warranted, the Board needs to determine how much of a subsidy to provide. Again, this will require a detailed and thorough analysis with the involvement of all parties. The Board not only has the right, but has the constitutional and statutory duty to make sure that any subsidy paid to the nuclear power plants is just and reasonable and not unduly burdensome. That review was not done previously, but must be done before additional subsidies are allowed.