

This CONFIDENTIAL application is for the Zero Emission Certificate (“ZEC”) program. It is intended to allow any eligible nuclear power plant to apply for credits that may be issued in the State of New Jersey.

New Jersey Board of Public Utilities  
August 12, 2020

# Zero Emission Certificate Application<sup>1</sup>

## I. Generation Applicant Information

Unit identification (name and/or designation): \_\_\_\_\_

Unit location: \_\_\_\_\_

Organization(s) that own(s) the nuclear power plant: \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

Federal Nuclear Generator I.D. Number and License Number: \_\_\_\_\_

Federal Tax I.D. Number \_\_\_\_\_

New Jersey Tax Identification Number \_\_\_\_\_

*\* If the nuclear power plant is owned by multiple organizations, make note in this section and provide all relevant information on a supplemental page.*

### Primary Contact for Application

Title \_\_\_\_\_

Company Name \_\_\_\_\_

Daytime Phone Number \_\_\_\_\_ Email \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

### Authorized Applicant Representative (with ability to enter into agreements)

Name \_\_\_\_\_

Title \_\_\_\_\_

Phone \_\_\_\_\_

Email \_\_\_\_\_

<sup>1</sup> The application must be completed by all owners of the applicant Unit. The application must also include an index of each item or document, with a brief description thereof, including the date.

*General Instructions:*

- *Calculate all requests for information past or future from the date of application.*
- *Unless noted otherwise herein, information should be presented on an annual basis rather than averaged or aggregated over the time period indicated.*
- *Represent all costs in nominal dollars.*
- *Provide copies of all workbooks, with all formulae intact, which are used to generate the attachments provided in applications.*
- *Energy year refers to the New Jersey Energy Year, which starts every June and extends for 12 months.*

## **II. Generation Asset Information and Operation**

1. Unit vintage and year applicant Unit was commissioned.
2. Total number of reactor units housed at the Unit.
3. Total Unit capacity/total Unit size per PJM rules (MW).
4. Description of the ownership of the Unit and/or statutory authority of the applicant.
5. Certification that all equipment located at or servicing the nuclear power Unit are as stringent as the standards and emission limits in N.J.A.C. 7:27 et seq.
6. A certified copy of the Unit's federal operating license demonstrating that the Unit is licensed to operate through 2030 or later.
7. Annual average energy produced by the Unit over each of the past ten (10) energy years and projected annual generation for the next five (5) energy years (MWh).
8. Annual average capacity and generation provided by the Unit into the energy and capacity markets over the past ten (10) energy years and projected annual capacity and generation for the next five (5) energy years (MW & MWh).
9. A list of the incidents, by hours, over the past ten (10) years when an energy bid from the Unit was not accepted into PJM markets. Be prepared to provide documentation upon request.
10. Explanation of whether receipt of the ZECs will have any impact on the Unit's participation in the wholesale markets. If so, how? (Response must be both quantitative and qualitative and include discussion of anticipated impact on the BGS auction and a comparison of costs and benefits.) For Units currently receiving ZECs, explain and show how receipt has impacted the Unit's participation in wholesale markets.
11. Total annual Unit run-time over the past ten (10) years (hours). Please provide full-year hours online and explain any significant deviation from the five-year average of hours online.
  - a. Identify all maintenance and refueling outages on an energy year basis over the past ten (10) years (hours).
12. All planned maintenance and refueling outages for the Unit over the next five (5) years.
13. Plant personnel count for application year and ten (10) years previous (annual).

### **III. Zero Emission Credit Justification - Financial**

#### GENERAL

1. Current net book value of the Unit at the time of application. Explain how the initial book value was determined and provide annual year-end gross and net book values through 2019.
2. Provide current and historical financial statements conducted by the Unit's owner/operator for each Unit for the past ten (10) years and the next five (5) years, including supporting workbooks and input assumptions. Include line items for:
  - a. Energy revenues
  - b. Capacity revenues
  - c. Variable operation and maintenance expenses
  - d. Fixed operation and maintenance expenses
  - e. Overhead and other non-operating expenses
  - f. Capital expenditures
  - g. Cost of capital
  - h. Cost of operational and market risks
3. Provide any internal analyses or presentations of past or projected financial performance of the Unit.
4. Provide a list of federal forms SEC 10-K, 10-Q, and other documents provided to the Securities and Exchange Commission ("SEC") for the past ten (10) years; list and highlight references to the applicant Unit.
5. Shareholder payout over the past ten (10) years attributed to the Unit and operator.

#### COSTS

6. Provide certified costs over the past ten (10) energy years, including, but not limited to: operation and maintenance expenses; fuel expenses; spent fuel expenditures; non-fuel capital expenditures; long-term fuel storage costs; other capital costs, including uranium fuel pricing for the Unit; and all overhead costs, including any overhead costs allocated to or from other entities outside the direct plant operations.
7. Provide certified cost projections over the next five (5) energy years, including all inputs and adjustments. Cost projections should include but may not be limited to: operation and maintenance expenses; investments; fuel expenses; spent fuel expenditures; non-fuel capital expenditures; long-term fuel storage costs; other capital costs, including uranium fuel pricing for the Unit; all other expenses, including, but not limited to, fully allocated overhead costs; and the projected costs of operational and market risks. Provide supporting documentation.
8. Provide current cost of capital, as well as required cost of capital for each of the next five (5) years, plus a detailed accounting of how the cost of capital was determined.

## REVENUES/INCOME

9. Identify and describe any obligations/commitments under which the Unit has operated in the past ten (10) years and/or currently operates regarding the current New Jersey Basic Generation Service (“BGS”) and any PJM markets, including any Reliability Must Run contracts, the duration of such obligations and/or commitments, and supporting documentation and calculations.
10. Provide a list of all active and anticipated contracts for capacity and/or energy supply by the Unit outside of the BGS and PJM markets. Include capacity and/or energy contracted, type of market, length of obligation, and customer. Be prepared to provide documentation upon request.
11. Provide the annual average Unit bid price in the annual Base Residual Auction (“BRA”) over the past ten (10) years (\$/MW), including all capacity auction bids by year, as well as any cost data submitted to PJM and the PJM Independent Market Monitor as part of a unit-specific review process.
12. Provide a list of historical revenues received by the Unit over the past ten (10) years, including, but not limited to, capacity and energy payments received from PJM, revenues from hedges, and ancillary revenues. Indicate all revenue sources.
13. Provide all revenue projections with accompanying revenue sources over the next five (5) years, including, but not limited to, revenues related to:
  - a. Unit-specific hedges to mitigate market exposure of the Unit;
  - b. Capacity market revenues at the locational clearing price for the Unit in the Base Residual Auction regardless of whether the Unit cleared in the PJM capacity market auction;
  - c. Energy market revenues, including relevant underlying fuel price forecasts and relevant PJM forward power market curves; and
  - d. Contracts outside the PJM markets.
14. Please state all of the assumptions used in the revenue projections.
  - a. Include forecasts of locational PJM capacity and energy market prices for the Unit.
  - b. Include and itemize expected revenues from PJM capacity and energy markets, ancillary services markets, and reserves markets.
  - c. Show the underlying load forecasts and forecasts of the entry and exit of resources in the PJM market.
  - d. Explain how forecast revenues account for the impact of the Federal Energy Regulatory Commission’s (“FERC’s”) decision on PJM’s Operating Reserve Demand Curve proposal.
  - e. Account for and explain changed capacity revenue expected to result from the FERC capacity market Minimum Offer Price Rule decisions on State Subsidies.
  - f. Include all citations and worksheets used for the calculations in Excel form.
  - g. Be prepared to provide additional documentation upon request.
15. Provide a certification that the nuclear power Unit does not receive any direct or indirect payment or credit under 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, despite its reasonable best efforts to obtain any such payment or credit, for its fuel diversity, resilience, air quality, or other environmental attributes that will eliminate the need for the nuclear power plant to retire.

16. Provide a detailed list and description of any subsidies or grants **received** for the Unit from federal sources, state sources, or other governmental agency for the applicant Unit in the past ten (10) years. Include the monetary amount received, exemptions for capacity bidding, and/or tax incentives. Be prepared to provide documentation upon request.
17. Provide a list and description of any subsidies or grants **anticipated** for the Unit from federal sources, state sources, or any other governmental agency for the applicant Unit. Include the monetary amount received, exemptions for capacity bidding, and/or tax incentives. Be prepared to provide documentation upon request.

## RISKS

18. Provide estimated costs of operational risks and market risks for the Unit:
  - a. Provide a detailed explanation, including supporting workbooks, of how the costs of operational risks and market risks were calculated for energy years 2023–2025; and
  - b. Explain how the cost of operational risks and market risks would be avoided by ceasing operations.
  - c. Previous ZEC recipients should provide an update of the costs of operational and market risks.
19. Provide the estimated risk-adjusted cost of capital for the Unit:
  - a. Provide a detailed explanation, including supporting workbooks, of how the risk-adjusted cost of capital was calculated for energy years 2023–2025; and
  - b. Provide the methodology used to determine the risk-adjusted cost of capital, along with supporting documentation and industry benchmarks it deems appropriate, and juxtapose this against the original cost of capital.
20. For Units that participated in the initial eligibility period, to the extent that the applicant has made any changes in the methodology or results related to calculating either (a) the costs of operational risks and market risks or (b) the risk-adjusted cost of capital, please provide an explanation of those changes.

## CASH FLOW ANALYSIS

21. Provide all presentations, transcripts, and similar information made by the applicant to investors, equity analysts, and rating agencies for the past ten (10) years regarding the Unit.
22. For Units that participated in the initial eligibility period, provide a comparison analysis of projected cash flows at the time of the last application vs. the actual cash flows for the time the Unit received ZECs. Include in this analysis an explanation of the extent to which the costs of market and operational risks anticipated in the initial eligibility period were actually incurred or not incurred and, if incurred, how these costs impacted cash flow metrics. Provide all backup documentation.
23. Provide an explanation of whether the applicant has reported (a) the costs of operational and market risks or (b) the risk-adjusted cost of capital in any of the applicant's audited financial statements in the past ten (10) years. If so, provide the applicable financial statements.
24. Provide projected earnings over the next five (5) years and explain assumptions used in the projection, including regarding taxes, depreciation, interest, and any other relevant values.

25. Provide a projection of subsidy requirements (\$/year) by Unit and MWh produced, in each of the next five (5) years, to maintain minimum revenue requirements required to fully cover all costs. Provide scenarios including and excluding either (a) the costs of operational and market risks or (b) the risk-adjusted cost of capital.
26. Provide any analyses that estimate the total net benefit (after costs) of entering into unit-specific hedges for each year from 2017–2021.

## **IV. Zero Emission Credit Justification - Environmental**

1. Provide an explanation, including any studies and relevant data, related to how the Unit makes a significant and material contribution to air quality in New Jersey by minimizing harmful emissions that (a) result from electricity consumed in New Jersey or (b) adversely affect the citizens of New Jersey, and an explanation as to how a retirement would significantly and negatively impact New Jersey's ability to comply with State air emissions reduction requirements. Include air dispersion modeling results and supporting files.
2. Provide a detailed description, including any studies and relevant data, of the greenhouse gas ("GHG") emissions avoided by this Unit's operation ten (10) years prior to and projected five (5) years beyond the application date. Identify the emission sources that will be displaced by continued operation of the Unit.
3. If applicable, discuss how the Unit's production of electricity generation will support the BPU's Renewable Portfolio Standards ("RPS") requirements, State of New Jersey Energy Master Plan goals, and cost-effective transition to a carbon-neutral supply.
4. Project what generation assets would fulfill the State of New Jersey's capacity and energy requirements if the Unit were to shut down. Include consideration of future federal and New Jersey energy policies, including, but not limited to, offshore wind, solar, electrification, energy efficiency, and future load forecasts. Include assumptions, supporting data, and source information for this analysis.
  - a. If the retirement of the Unit is projected to increase in-state greenhouse gas emissions from New Jersey generators, provide a breakdown in MWh of the projected replacement generation (presented separately for each type of generation) and a breakdown in million metric tons of the projected increased emissions.
5. Provide a list of all submissions of data and documentation provided by the applicant and related to the Unit and its surrounding property to the U.S. Environmental Protection Agency ("EPA"), including permits, permit violations, enforcement actions, outstanding environmental compliance requirements, and remedial actions planned, ongoing, and completed over the past ten (10) years to demonstrate that all standards and requirements are being met. Be prepared to provide documentation upon request.
6. Provide a list of all submissions of data and documentation provided by the applicant and related to the Unit and its surrounding property to the New Jersey Department of Environmental Protection ("NJDEP"), including permits, permit violations, enforcement actions, outstanding environmental compliance requirements, and remedial actions planned, ongoing, and completed over the past ten (10) years to demonstrate that all standards and requirements are being met. Be prepared to provide documentation upon request.
7. Describe the practices of the Unit regarding nuclear waste disposal and storage. Also describe the Unit's remaining on-site capacity for dry storage and include a relevant schedule of license or permit renewals.



## **V. Impact of the Unit's Deactivation**

1. Indicate the remaining useful life of the generating Unit.
2. Provide information on any planned license extension requests for the Unit, including any financial modeling done in association with such planning.
3. Estimate the costs that would be incurred by the applicant to shut down the Unit. What costs would be funded by the Unit's decommissioning funds, and what costs would be funded by the applicant?
4. Demonstrate the impact on ownership and applicant's earnings during each of the next five (5) years, assuming that the Unit shuts down. Include any financial impact(s) to the parent organization.
5. Explain the avoided costs to the applicant if the Unit is deactivated. Please include the costs associated with fuel, salary, O&M, capital improvement projects, permitting, and the costs of all other relevant factors involved. Provide backup documentation.
6. Provide results from internal or commissioned dispatch modeling of the impact of the Unit's retirement scenarios.
  - Include all assessments of avoided emissions, based on differential (with and without each Unit claimed for ZECs) scenario modeling
  - Include all work papers and modeling inputs and outputs
  - If no such modeling has been conducted, include an explanation and computation of avoided emissions from retention of the Unit.
7. Describe the status of decommissioning funds for the Unit as of the date of the application, include decommissioning status reports filed with the Nuclear Regulatory Commission ("NRC"), and identify any shortfall of decommissioning funds resulting from early retirement of the Unit.

## **VI. Supplemental Submissions with the Application**

Please provide the following:

1. A certification that the nuclear power generation Unit will cease operations within three (3) years unless the nuclear power plant experiences a material financial change. This certification must specify the necessary steps required to cease the nuclear power plant's operations. Also:
  - a. Identify and describe all of the applicant's commitments and obligations to the NRC that would be required in advance of a unit shutdown.
  - b. Indicate the earliest date that the applicant could access decommissioning trust funds for the Unit.
  - c. Indicate the earliest date that the applicant could realistically shut down the Unit per NRC, PJM, or other commitments and obligations.
2. A spreadsheet showing the estimated average rate impacts of the applicant Unit receiving ZECs to New Jersey customers across all rate classes.
3. Explanation of how receipt of the ZECs will not lead to New Jersey ratepayers "double paying" for capacity, i.e., 1) paying ZEC-eligible Units for the environmental attributes while 2) not retaining the benefit of their capacity requirement, and therefore paying other units to fulfill New Jersey's PJM capacity commitment.
4. Documentation and analysis on the impact on the Unit of FERC's Minimum Offer Price Rule decisions on State Subsidies.
5. Comparison of the expected benefits of a Fixed Resource Requirement scenario with the expected benefits of ZECs.
6. A list of all data provided by the Applicant and related to the Unit to the FERC and NRC over the past ten (10) years. Be prepared to provide documentation upon request.
7. A list of all filings or submissions by the applicant relating to the Unit with the NRC over the past ten (10) years, including relating to all currently applicable or pending NRC approvals (i.e., plant expansions, site approvals, licenses, etc.). Be prepared to provide documentation upon request.
8. A list of any NRC enforcement or legal actions taken or filed against the Unit from ten (10) years prior to the application to present. Be prepared to provide documentation upon request.
9. An updated version of the data specific to the Unit provided to the Nuclear Energy Institute ("NEI") and the Electric Utility Cost Group ("EUCG") when responding to their latest survey.
10. A list of all audits performed by internal employees, commissioned, or performed by any governmental agency on the Unit over the past ten (10) years. Be prepared to provide documents upon request.
11. Certification of accuracy of application by applicant Company Officer.