NEW YORK STATE BOARD ON ELECTRIC
GENERATION SITING AND THE ENVIRONMENT

At a session of the New York State Board on Electric Generation Siting and the Environment held in the Cities of New York and Albany on January 12, 2017, by a unanimous vote of its five members present

BOARD MEMBERS PRESENT:

AUDREY ZIBELMAN, Chair
New York State Public Service Commission

D. Scott Bassinson, Alternate for
Basil Seggos, Commissioner
New York State Department of Environmental Conservation

Elizabeth L. Lewis-Michl, Alternate for
Howard A. Zucker, M.D., J.D., Commissioner
New York State Department of Health

John B. Rhodes, Alternate for
Richard L. Kauffman, Chair
New York State Energy Research and Development Authority

Vincent Ravaschiere, Alternate for
Howard Zemsky, Commissioner
New York State Department of Economic Development

CASE 15-F-0040 – Petition of PSEG Power New York LLC for a Modification of its Certificate of Environmental Compatibility and Public Need for the Bethlehem Energy Center, dated February 28, 2002.

ORDER GRANTING AMENDMENT OF CERTIFICATE
OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED
SUBJECT TO CONDITIONS

(Issued and Effective January 12, 2017)

BY THE BOARD:

INTRODUCTION

In a petition filed on January 20, 2015, and supplemented on February 17, 2015 and November 9, 2016, PSEG

Power New York LLC (PSEGNY) seeks an amendment of the certificate of environmental compatibility and public need (Certificate) granted to it by the New York State Board on Electric Generation Siting and the Environment (Siting Board) in Case 97-F-2162.[1] In accordance with former Article X of the Public Service Law (PSL), the Certificate authorized PSEG Power New York, Inc.[2] to construct and operate the Bethlehem Energy Center in the Town of Bethlehem, Albany County located at 380 River Road, subject to certain Certificate conditions.[3] The Bethlehem Energy Center, a 750 megawatt (MW) dual-fuel fired electric generating facility, commenced commercial operation on July 1, 2005.

The requested amendment would authorize hardware and software changes (collectively the "Upgrades") to the existing gas turbines to increase operational efficiency and facility output. In this Order, the requested amendment is granted,[4] subject to the conditions discussed in more detail below, including the imposition of a Near-field sound testing protocol to ensure ongoing compliance with the noise design and mitigation requirements of the original Certificate and the

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[1] Case 97-F-2162, PSEG Power New York, Inc., Opinion and Order Granting Certificate of Environmental Compatibility and Public Need Subject to Conditions (issued February 28, 2002).

[2] PSEGNY notes that, on May 6, 2009, it advised the Siting Board of the change in the Certificate Holder's form from a corporation to a limited liability company.

[3] Among the Certificate conditions were several regarding operation and maintenance, including VI. D., E., and F. concerning avoiding, minimizing, mitigating and monitoring operational noise impacts.

[4] The legislation establishing expired Article X states that it would continue to apply to facilities receiving Certificates under that article. See, 1992 N.Y. Session Law Ch. 519, §16.

application of certain construction control measures and plans identified in the petition and supplements.

THE PETITION

In the petition, PSEGNY asserts that no significant adverse impacts to the environment or to public health and safety would result from the proposed construction or as a result of the installation of the Upgrades.[5] PSEGNY also states that the efficiency increases that result from the Upgrades will not affect existing federal Clean Air Act Title V permit conditions or emission limits.[6] Regarding procedure, in the petition PSEGNY submits that the proposed amendment to its Certificate is a "modification" not likely to result in any significant increase in any environmental impact of such facility or a substantial change in the location of all or a portion of such facility, so no hearing before the Siting Board is required before approval can be considered.[7]

The petition goes on to describe the limited effects that construction and operation of the Bethlehem Energy Center,

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[5] See, petition, Exhibits 15 and 25.

[6] The Department of Environmental Conservation (DEC) sent PSEGNY a Notice of Complete Application for Title V air permits on August 15, 2016. The comment deadline was September 16, 2016. DEC issued the final Title V permit effective December 1, 2016.

[7] Because PSL §165(5) specifies that certain amendments may be authorized only after a hearing, amendments that require a hearing are called "revisions" whereas amendments that may be authorized without a hearing are called "modifications." Consistent with the statutory provision, "revision" is defined in 16 NYCRR §1000.2(ak), in pertinent part, as "[a]n amendment of an application or Certificate proposing or authorizing a change in the major electric generating facility likely to result in any significant increase in any environmental impact of such facility or a substantial change in the location of all or a portion of such facility as determined by the Board…."

as modified, will have on the environment. Since the modifications are internal to the facility, PSEGNY states there will be no changes to the facility's footprint, no external site impacts to waters, wetlands or scenic resources. The Upgrades, according to PSEGNY, will be scheduled to occur to the three combustion turbine units in phases during regularly scheduled maintenance shutdowns. There will be no significant increases in construction period traffic since, according to PSEGNY, the Upgrades will be done by contractor crews in activities similar to routine maintenance or replacement of similar existing components.

Specifically, according to the petition, the proposed Upgrades involve modifications to components of the facility's three General Electric ("GE") 7FA.03 natural gas-fired combustion turbines, unit numbers 1, 2, and 3. The modifications are to internal component parts of the "Hot Gas Path" which will be replaced with new Advanced Gas Path ("AGP") parts, which PSEGNY states are made with better materials and improved design that enhances aerodynamics and cooling efficiency. Software improvements further enable the units' operational efficiency to be increased and allow emission limits to be met at all operating loads, and improved power output at higher load levels. Additional modification to the "Hot Gas Path" components including buckets, shrouds and nozzles, which will be replaced with parts designed to operate at higher temperatures.[8] Improved metallurgy and design of these components, according to PSEGNY, allows higher operating temperatures to be reached. Changes to associated structural

[8] Buckets induce rotation of the turbine shaft when exhaust gases exert pressure. Shrouds surround the buckets and provide seals to limit exhaust gas passage or leakage. Nozzles convey exhaust gas passage through the series of buckets.

elements including combustion liners and flow sleeves will, PSEGNY states, provide further operational improvements. Other minor modifications proposed include replacement of boiler feedwater recirculation valves, upgrades to spray nozzles, additional heat transfer capability of the cooling system heat exchangers, and the addition of sensors, controls and instrumentation on system components. System control will also reportedly require upgrades to software, to gain the full benefit of the proposed mechanical and design improvements.

The Upgrades, PSEGNY states, will enable the facility to run at increased efficiency during both periods of peak firing – during times of peak demand – and allow extended "turndown" operation at periods of low demand, when the facility would ordinarily be shut down. This enhancement, according to PSEGNY, should allow the combustion turbines to achieve compliance with emission limits at a wide range of conditions, and reduce the number of unit shut-downs and cold-starts, while also reducing mechanical "wear and tear." Fine-tuning of facility operations can, according to PSEGNY, effectively boost output at periods of high demand and the petition indicates that the Upgrades could increase each gas turbine's electrical output by 7.2% from 165 MW up to 177 MW. The output for each gas turbine is expected to increase by about 12 MW or 36 MW for the entire facility. The steam turbine is not affected by the Upgrade. While the gas turbines will become more efficient at turning the electric generators, PSEGNY notes that the nameplate capacity rating of the electric generators will not change as a result of the Upgrades.

On February 17, 2015, at the request of Department of Public Service Staff (DPS Staff), PSEGNY filed a supplement to its petition. The supplemental information included electrical system effects; preliminary design drawings, including parking,

materials handling and laydown area figures to demonstrate that sufficient area was available for staging construction of the Upgrades without compromising access and operational needs; and an explanation of the location of transmission facilities upgrades needed to accommodate the increased facility's output, located beyond the point of interconnection of the generating facility (and thus not considered part of the generating facility).[9]

Finally, also at the request of DPS Staff, on November 9, 2016, PSEGNY filed an additional supplement which included an AGP Upgrade Nearfield Sound Levels Measurement Protocol ("The Near-field Sound Protocol"). The Near-field Sound Protocol includes several provisions for specifying and reporting operational noise measurement methods, locations, instrumentation and scheduling; and analysis and reporting of results, to confirm that there will be no material increase in noise between the pre- and post-upgraded sound levels.

NOTICE

PSEGNY served its petition and supplements on those required to be served, pursuant to 16 NYCRR §1000.16(b).[10] Moreover, PSEGNY gave notice of its petition as required by 16 NYCRR §1000.16(b)(5). The notice was published between January 14 and 26, 2015 twice in each of the following newspapers: Bethlehem Spotlight Newspaper, the Albany Times Union, The Troy Record, and The Ravena News Herald. The notice described the petition and stated, as required by 16 NYCRR §1000.16(b)(5)(iv), that any comments on the petition must be

[9] PSEGNY has applied for the 2015 class year allocation as determined by the New York Independent System Operator.

[10] The regulations enacted by the Public Service Commission (Commission) for Article 10 expressly replaced the expired Article X's regulations. See, Case 12-F-0036, Siting Board Resolution (issued July 12, 2012), p. 2.

received by the Secretary to the Siting Board no later than 30 days after the date on which the notice was given. The deadline for the receipt of comments was February 25, 2015. No comments were received.

In regards to the supplements, a Notice Inviting Comments (Notice) was issued by the Secretary to the Siting Board on November 10, 2016. That Notice requested comments on the petition and related filings that included a draft noise protocol intended to survey noise at the facility during pre- and post-upgraded operations. The deadline for comments pursuant to the Secretary's Notice was November 23, 2016. No comments were received.

LEGAL AUTHORITY

Bethlehem Energy Center's Certificate was issued under former Article X of the PSL and remains subject to it for the purposes of the petition presented here [1992 N.Y. Session Law Ch. 519, §16]. The applicable findings requirements for the Siting Board's decision are set forth in former Article X PSL Section 168(2). Article X empowers the Siting Board to grant or deny PSEGNY's petition, or to certify the facility upon such terms, conditions, limitations or modifications to the proposed construction or operation of the proposed facility as are necessary to meet the Article X requirements. Article 10 of the PSL does not apply to the instant request because the nameplate capacity rating of the electric generators will not change as a result of the Upgrades. The nameplate capacity of the Bethlehem Energy Center's would have to be proposed to increase by more than 25 MWs for Article 10 to become applicable to the proposal. Under Article 10, "nameplate" is defined as "a manufacturer's designation, generally as affixed to the generator unit, which states the total output of such generating facility as

originally designed according to the manufacturer's original design specifications" [PSL §160(7)]. The Upgrades contemplated here consist of replacements of other components and not the equipment that actually generates the electricity (which establishes the nameplate rating).

Notwithstanding the foregoing, the regulations enacted by the Siting Board for Article 10 expressly replaced the former Article X regulations and are applicable to Article X amendments. Specifically, Section 1000.16 of the Article 10 regulations governs amendments of certificates issued under Article X. Section 1000.16(a) requires, as an initial step, a determination of whether a proposed amendment is a revision. A revision is defined as "an amendment of an application or Certificate proposing or authorizing a change in the facility likely to result in any material increase in any environmental impact of the facility or a substantial change in the location of all or a portion of such facility as determined by the Board."[11] To determine whether a material increase in any environmental impact of the Bethlehem Energy Center will occur in connection with a proposed amendment, the criteria for determining significance set forth in 6 NYCRR § 617.7(c) (regulations governing the State Environmental Quality Review Act) apply.[12] The criteria set forth in 6 NYCRR § 617.7(c) directs agencies to compare the impacts that may be reasonably expected to result from a proposed action against a set of criteria set forth in that section. Those criteria are intended to be illustrative, not exhaustive, but are indicators of significant adverse impacts on the environment.

[11] 16 NYCRR §1000.2(ak).

[12] 16 NYCRR § 1000.16(a).

DISCUSSION AND CONCLUSION

The Siting Board finds that the proposed Upgrades consist of the replacement of existing parts with similar (but improved) parts and a software upgrade; there will be no increase in air emissions, water use, or waste generation; there will be no changes to the "footprint" or external structures that constitute the facility; and additional traffic associated with the Upgrades will be limited as it will be performed simultaneously with a previously scheduled maintenance outage, when other contractors will already be working at the facility. The Siting Board further finds that the application of the criteria in 6 NYCRR § 617.7(c) to these facts would not trigger a further environmental review as it is not likely that the Upgrades would result in material or significant increases in environmental impacts from construction and operation. The Siting Board therefore finds that the Upgrades represent a "modification" and not a "revision" such that a hearing before the Siting Board is not required and is also unnecessary before approval can be granted here.

Under former Article X, the Siting Board determined that PSEGNY met the statutory requirements to obtain a Certificate. The Order granting Bethlehem Energy Center's original Certificate found, subject to certain conditions, that the facility met the necessary findings under PSL §168(2) and that the evidentiary record supported approval subject to conditions to which PSEGNY agreed to be bound. For the facility to obtain a Certificate the Siting Board determined:

- That the facility is reasonably consistent with the policies and long-range planning objectives and strategies of the most recent state energy plan, or that the facility was selected pursuant to an approved procurement process.[13]

[13] PSL §168(2)(a).

- The nature of the probable environmental impacts, specifying predictable adverse and beneficial effects on (a) the normal environment and ecology, (b) public health and safety, (c) aesthetics, scenic, historic, and recreational values, (d) forest and parks, (e) air and water quality, and (f) fish and other marine life and wildlife.[14]

- That the facility minimizes adverse environmental impacts, considering (a) the state of available technology, (b) the nature and economics of reasonable alternatives required to be considered under PSL §164(1)(b), and (c) the interest of the State in aesthetics, preservation of historic sites, forest and parks, fish and wildlife, viable agricultural lands, and other pertinent considerations.[15]
- That the facility is compatible with public health and safety.[16]

- That the facility will not discharge any effluent in contravention of DEC standards or, where no classification has been made of the receiving waters, that it will not discharge effluent unduly injurious to fish and wildlife, the industrial development of the State, and the public health and public enjoyment of the receiving waters.[17]

- That the facility will not emit any air pollutants in contravention of applicable air emission control requirements or air quality standards.[18]

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[14] PSL §168(2)(b).

[15] PSL §168(2)(c)(i).

[16] PSL §168(2)(c)(ii).

[17] PSL §168(2)(c)(iii).

[18] PSL §168(2)(c)(iv).

- That the facility will control the runoff and leachate from any solid waste disposal facility.[19]
- That the facility will control the disposal of any hazardous waste.[20]
- That the facility will operate in compliance with applicable state and local laws and associated regulations, except that the Siting Board may refuse to apply specific local laws, ordinances, regulations, or requirements it regards as unduly restrictive.[21]
- That the construction and operation of the facility is in the public interest, considering its environmental impacts and the reasonable alternatives considered under PSL §164(1)(b).[22]

A generating facility that operates more efficiently while meeting all emissions and performance criteria is in the public interest. Here, the proposed improvements in the facility's efficiency are not expected to result in any material changes in environmental conditions at the facility's site or in the surrounding environment due to construction and operation of the proposed Upgrades. Application of reasonable control measures on contractor activities and construction methods, including disposal of solid waste, staging activities at previously disturbed sites, and maintenance of existing site conditions, will minimize environmental impacts of construction activities. No hazardous wastes will be generated as a result of construction or operation of the improved facility. Thus,

[19] PSL §168(2)(c)(v).

[20] PSL §168(2)(c)(vi).

[21] PSL §168(2)(d).

[22] PSL §168(2)(e).

approval of the requested amendment will be conditioned upon PSEGNY adhering to all construction control measures identified in the petition and supplements. Further, because overall air emissions will still be within permit limits and applicable air quality standards, there will not be any material increase in air quality impacts. DEC has issued air permits for the proposed facility Upgrades, including limitations as appropriate to maintain emissions within identified limits.

The only operational aspect of the proposed Upgrades that requires additional consideration here is potential operational noise level increases due to the additional output of the facility. The previously granted Certificate for the Bethlehem Energy Center issued in 2002 contained several conditions related to noise design and mitigation requirements, including for facility construction, operation, and maintenance activities (VI. D. (design and construction standards), VI. E (noise limit at receptor locations), and VI. F (post-construction monitoring and compliance)). DPS Staff advises that measurements to be made pursuant to the Near-field Sound Protocol filed by PSEGNY on November 9, 2016 should be used to document the before- and after-upgraded conditions, and confirm ongoing compliance with the previously approved Certificate conditions.

While increases in noise levels are not expected to be material, in the event that there are adverse noise changes due to increases in the facility's output or proposed Upgrades, PSEGNY would have to identify if such changes may result in substantial changes at sound sensitive receptor locations, and if so, to develop noise reduction or mitigation measures to limit the extent and level of noise increases pursuant to the Near-Field Sound Protocol. The results of the Near-field Sound Protocol testing may or may not need to be used to demonstrate

compliance with the original Certificate conditions that established operational criteria for minimizing public complaints, avoiding tonal noise, and achieving compliance with provisions of local ordinances. In the event that the previously approved Certificate criteria are exceeded, however, additional testing and mitigation to achieve compliance may need to be undertaken to minimize these potential impacts.

To ensure that noise impacts remain consistent with the previously approved Certificate conditions, PSEGNY will be required to implement the Near-field Sound Protocol, as generally described above, and report all results to confirm that no material increase in environmental noise impacts occurred or will occur following the Upgrades and demonstrate ongoing compliance with noise level limits established in the previously approved Certificate conditions, issued on February 28, 2002.

Therefore, since the necessary statutory findings for granting a Certificate have already been made and there are not expected to be any material environmental impacts as a result of the requested amendment, the Siting Board approves PSEGNY's petition, subject to the conditions discussed above.

The New York State Board on
Generation Siting and the
Environment orders:

1. The Certificate of Environmental Compatibility and Public Need previously granted to PSEG Power New York LLC (Certificate Holder), in Case 97-F-2162, is amended at Condition I. A. to allow the Certificate Holder to construct and operate the Upgrades described in its January 20, 2015 petition and the body of this Order based upon the following conditions.

2. Except as modified above, Condition I. A and all other Certificate conditions in Case 97-F-2162 remain in full force and effect.

3. The Near-field sound testing protocol is adopted and the Certificate Holder is required to comply with its provisions.

4. The Certificate Holder shall apply such construction control measures and plans as identified in the January 20, 2015 petition and supplements dated February 17, 2015 and November 9, 2016.

5. The Certificate Holder shall file, within 15 days after the date of issuance of this Order, a written acceptance of the Certificate, as amended, pursuant to 16 NYCRR §1000.16(a).

6. This proceeding is continued.

By the New York State Board
on Electric Generation Siting
and the Environment,

(SIGNED) KATHLEEN H. BURGESS
Secretary