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October 7, 2016

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS
ON THE
ENVIRONMENTAL NOTIFICATION FORM

PROJECT NAME	: MMWEC Simple Cycle Gas Turbine Project
PROJECT MUNICIPALITY	: Peabody
PROJECT WATERSHED	: North Coastal
EEA NUMBER	: 15578
PROJECT PROPONENT	: Massachusetts Municipal Wholesale Electric Company
DATE NOTICED IN MONITOR	: September 7, 2016

Pursuant to the Massachusetts Environmental Policy Act (M.G. L. c. 30, ss. 61-62I) and Section 11.06 of the MEPA regulations (301 CMR 11.00), I hereby determine that this project **does not require** an Environmental Impact Report (EIR).

Project Description

As described in the Environmental Notification Form (ENF), the project consists of the construction and operation of a fast-start, dual fuel-fired simple-cycle electric generating turbine within the Peabody Municipal Light Plant (PMLP) Waters River Station site. The project will include a single Pratt & Whitney FT4000 combustion turbine, or comparable unit, with an approximate net nominal capacity of 60 megawatts (MW). The turbine will operate as a fast-start (10 minutes to full-load) reserve unit that will only be dispatched during peaking periods or system emergencies. The project will be limited to 1,250 hours of operation per year, with a maximum of 250 hours per year on ultra-low sulfur distillate (ULSD) over a 12-month rolling period. The Proponent intends to start up and operate the turbine using natural gas, unless natural gas is unavailable, in which case ULSD will be used. The

Proponent indicated that a typical peaking unit operates less than 100 hours per year; or less than 1.4% of the time.

Natural gas will be provided to the turbine via the existing connection available on-site. A natural gas compressor will be installed to increase natural gas pressure and the turbine will interconnect with the regional high voltage transmission system via the existing PLMP-owned switchyard located in the northwestern corner of the project site. A new emissions stack, approximately 90 feet tall, will be constructed. An existing 115,000-gallon fuel oil storage tank will be decommissioned and removed and will be replaced by a new 200,000-gallon ULSD storage tank. A new 10,000-gallon tank will be installed to hold 19% aqueous ammonia. The project will not require stream condenser cooling; air-cooled fin fan coolers will be used for ancillary equipment cooling.

Project Site

The 4.0-acre project site currently contains two simple-cycle electric generation units (68 MW total), a 115-kilovolt (kV) substation, three aboveground fuel oil storage tanks (115,000 gallon capacity each) and associated emissions stacks (Waters River Station). The project site is bounded by an abandoned railroad spur to the south; a New England Power (National Grid) transmission right-of-way (ROW) and the Waters River to the north; a trailer storage yard to the east; and an abandoned Boston & Main ROW to the west. The turbine will be located on an approximately 26,000 square foot (sf) (0.6-acre) portion in the northeast corner of the Waters River Station property.

The project site is not located in the 100-year or 500-year flood zone according to the most recent Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM). The project site does not contain any mapped rare or endangered species habitat and is not located in an Area of Critical Environmental Concern (ACEC).

Jurisdiction and Permitting

The project is undergoing MEPA review pursuant to 301 CMR 11.03(7)(b)(2) because it requires a State Agency Action and includes the expansion of an existing electric generating facility by 25 or more MW. The project will require a Non-Major Comprehensive Air Plan Approval/Title V Operating Permit Modification from the Massachusetts Department of Environmental Protection (MassDEP) and an Aboveground Fuel Oil Storage Tank Approval from the Department of Public Utilities (DPU). The project will require an Order of Conditions from the Peabody Conservation Commission, or in the case of an appeal, a Superseding Order of Conditions from MassDEP.

Because the Proponent is considered an Agency in accordance with 301 CMR 11.02, MEPA jurisdiction is broad in scope and extends to all aspects of the project that may cause Damage to the Environment, as defined in the MEPA regulations.

Environmental Impacts and Mitigation

Potential environmental impacts are associated with the creation of 21,780 additional square feet of impervious area (2.4 acres total), construction of a 90-foot tall emissions stack, approximately 13,611 gallons per day (gpd) of additional water use (16,247 gpd total), 1,507 gpd of wastewater generation, and increased air emissions (6.2 tons per year (tpy) of Oxides of Nitrogen (NO_x); 8.2 tpy of carbon

monoxide (CO); 1.8 tpy of volatile organic compounds (VOC); 0.6 tpy of Sulfur Dioxide (SO_2); 6.0 tpy of Particulate Matter (PM_{10} and $PM_{2.5}$); 0.00025 tpy of Lead; and 49,887 tpy of Carbon Dioxide (equivalent) (CO_2e).

Measures to avoid, minimize and mitigate environmental impacts include: incorporation of selective catalytic reduction (SCR) and oxidation catalyst systems to reduce NO_x, CO, and VOC emissions in accordance with MassDEP Best Available Control Technology (BACT) requirements; participation in the Regional Greenhouse Gas Initiative (RGGI) through the acquisition of RGGI allowances; construction of a stormwater management system consistent with the stormwater management standards of the Wetlands Regulations (310 CMR 10.00); containment systems for aboveground storage tanks; and shielding or baffles to control noise pollution.

Review of the ENF

The ENF described existing and proposed conditions and included site plans depicting the layout of the proposed facility and the existing turbines and storage tanks on-site. The ENF identified the relationship of the project to environmental and cultural resources. The ENF also identified the location of off-site infrastructure critical to the project, including transmission lines and gas pipelines.

The Proponent considered off-site and on-site project alternatives, including varying technologies and fuels. As noted in the ENF, the Proponent preferred to expand capacity at an existing power station located in the ISO-NE region to capitalize on the technical, financial and environmental benefits compared to use of a greenfield site. The Proponent evaluated six properties with good access to existing natural gas and electrical transmission lines based upon the following criteria: proximity to load center (i.e., the City of Boston); available space; zoning; surrounding land use; and proximity to sensitive receptors. The ENF described each potential site and consistency with evaluation criteria. Off-site locations considered are located in Tiverton, Rhode Island; and Fall River, Rochester, Plymouth (two locations), Massachusetts. Upon completion of this evaluation the Waters River Station site was selected as the Preferred Alternative.

The Waters River Station site is currently served by natural gas, electric transmission, and water utilities sufficient to meet the demand of an expanded generation facility. Furthermore, the Waters River Station site is zoned for power generation uses and compatible with adjacent uses. On-site turbine configuration alternatives are limited, as the turbine is proposed in the only sufficient open space on the property. This location maximizes distance to residences and other sensitive receptors, and given its topography, allows of placement of the emissions stack in a manner that will result in the least amount of visual changes from off-site vantage points.

The Proponent considered use of combined-cycle technology, but determined that it was not a cost-effective technology to meet the intermittent peak-load capacity needs of a peaking unit due to longer start-up and shut-down times. Alternative turbine fuels were considered, but natural gas as the primary fuel was deemed superior to meet air quality requirements. The use of a dual-fueled combustion turbine was selected over a reciprocating engine peaking unit as it will allow for operation during times of natural gas shortage.

Air Quality

The Proponent will obtain Air Plan Approval from MassDEP. This process will include a review of air and noise emissions to ensure compliance with applicable regulations, including consistency with BACT requirements. Data presented in the ENF identified the following changes in air emissions (in tons per day (tpd)) based upon a worst-case scenario of 24 hours of ULSD operations:

	Existing	**Change**	**Total**
Particulate Matter	0.63	0.23	0.86
Carbon Monoxide	1.69	0.27	1.96
Sulfur Dioxide	0.50	0.01	0.51
VOCs	0.59	0.04	0.63
Oxides of Nitrogen	2.26	0.19	2.45
Lead	0.0001	0.0001	0.0002
Hazardous Air Pollutants	0.0048	0.0027	0.0075
Carbon Dioxide	1,580	1,200	2,780

The Proponent provided supplemental information on September 22, 2016 confirming that air emissions under natural gas and ULSD conditions will not exceed a MEPA Air Quality threshold (301 CMR 11.03(8)(b)).[1] Total annual air emissions were calculated based upon maximum permitting thresholds for gas and ULSD operations (1,000 hours per year and 250 hours per year, respectively) and startup/shutdown cycles (200 on natural gas, 50 on ULSD). These data are summarized below:

	New Turbine Emissions (tpy)
Particulate Matter (PM_{10} and $PM_{2.5}$)	6.0 (each)
Carbon Monoxide[2]	8.2
Sulfur Dioxide	0.6
VOCs	1.8
Oxides of Nitrogen	6.2
Lead	0.00025
Carbon Dioxide	49,887

The aforementioned supplemental information also included the results of a preliminary BACT analysis comparing the proposed project to MassDEP BACT Policy levels. These data indicate that the project, as presented in the ENF, will comply with all parameters of the MassDEP BACT Policy. Compliance will be achieved through the use of the SCR, oxidation catalyst, turbine design and balance of plant considerations. The Proponent indicated that given the anticipated gas and ULSD annual hour restrictions, the project is expected to be below the $PM_{2.5}$ threshold of 10 tpy and therefore the air permit modification would not be subject to the federal Prevention of Significant Deterioration (PSD) regulations and permitting process. The Proponent should confirm this conclusion with MassDEP during Comprehensive Plan Approval review. The Proponent should review the MassDEP comment letter for additional guidance and data collection requirements prior to submission of the Comprehensive Plan Approval application.

[1] Email from George Lipka, Tetra Tech, dated September 22, 2016.

[2] For CO, worst-case annual emissions are based on 1,250 hours per year of natural gas firing and 250 startup/shutdown cycles on gas.

The recent Massachusetts Supreme Judicial Court decision (Kain v. Department of Environmental Protection, 474 Mass. 278 (2016)) ("Kain") held that Section 3(d) of the Global Warming Solutions Act (GWSA) required MassDEP to "promulgate regulations that address multiple sources or categories of sources of greenhouse gas emissions, impose a limit on emissions that may be released, limit the aggregate emissions released from each group of regulated source or categories of sources, set emission limits for each year, and set limits that decline on an annual basis." MassDEP is in the process of identifying sources and categories of sources, and developing appropriate draft regulations pursuant to the Kain decision. MassDEP has publicly stated that it intends to put these draft regulations out for public comment by the end of this calendar year. I remind the Proponent that the project will be required to comply with any GHG emissions reductions required by these implementing regulations, as applicable.

Wetlands and Stormwater

The project site is located proximate to the Waters River and is situated within the North Shore Coastal Zone. Wetland resource areas associated with the Waters River include salt marsh and Riverfront Area. Based upon information presented in the ENF, no direct alteration of wetland resource areas is anticipated in conjunction with the project. However, the project is located within the 100-foot buffer zone to salt marsh. While not currently contemplated as part of the project, some adjustments to transmission structures presently located in the Riverfront Area may be necessary if required by National Grid subsequent to their review of interconnection plans. The Proponent will finalize wetland resource area mapping and proceed with review by the Peabody Conservation Commission in accordance with the Wetlands Protection Act. The project is not expected to have adverse effects on coastal resources areas or uses.

Climate Change Adaptation

As noted earlier, the project site is proximate to the Waters River. While the project site is not mapped within the 100 or 500-year floodplain, given its purpose as a critical piece of infrastructure during storm events, measures to support adaptation and provide resiliency to anticipated effects of climate change should be incorporated into the project. As a tidal river, the Waters River may be susceptible to an increased flood elevation due to rising sea level and increased storm intensity. The new turbine will be located at a lower elevation within the project site which will help mitigate visual impacts of the emissions stack. I strongly encourage the Proponent to consider raising the grade of the 0.6-acre turbine site, or providing an alternative method of protection, to mitigate and/or adapt to potential climate change impacts.

Water and Wastewater

Water for the project will be provided from the City of Peabody via existing on-site infrastructure. The limited amount of wastewater generated by the turbine will be collected in an on-site holding tank and pumped out and disposed of in accordance with applicable regulations as needed.

Historic Resources

The Waters River Plant has been designated by the City of Peabody as a historic site. The Proponent submitted a Project Notification Form (PNF) to the Massachusetts Historical Commission (MHC). Correspondence provided by the Proponent from MHC indicates that the project is unlikely to affect significant historic or archaeological resources.

Hazardous Materials

The ENF identified release tracking numbers (RTNs) associated with hazardous materials conditions now, or formerly, regulated under the Massachusetts Contingency Plan (MCP) on or adjacent to the site. The ENF indicated that the project site does not contain any Activity and Use Limitations (AUL), but the MassDEP comment letter identified an AUL on lot 83A 1A1. The ENF noted that the AUL is not associated with the subject property. The ENF noted three RTNs on-site: RTN 3-0022566, RTN 3-0010854, and RTN 3-0004300. Two of these RTNs have completed a Response Action Outcome (RAO), while another achieved a determination of No Further Action from MassDEP. Fuel and ammonia storage tanks will be constructed with containment berms to limit any potential environmental impacts. The Proponent should review the MassDEP comment letter for additional guidance on MCP compliance.

Construction

In February 2017 the Proponent intends to participate in and clear the Independent Systems Operator (ISO) New England Forward Capacity Auction for a commitment period commencing in 2020. Commercial operation of the turbine is anticipated in June 2020. The project will be constructed in one phase.

The Proponent should implement and maintain erosion and sedimentation control measures, as appropriate. All activities should be managed in accordance with applicable MassDEP Solid Waste and Air Pollution Control regulations pursuant to M.G.L. c.40, §54. I encourage the Proponent to require contractors to use construction equipment with engines manufactured to Tier 4 federal emissions standards or retrofitted with the best available after-engine emission control technology, such as oxidation catalysts or diesel particulate filters. The Proponent should also implement a program to minimize excessive idling during the construction period.

Conclusion

The ENF has sufficiently defined the nature and general elements of the project for the purposes of MEPA review and demonstrated that the project's environmental impacts will be avoided, minimized and/or mitigated to the extent practicable. Based on review of the ENF and comments received, and in consultation with State Agencies, I have determined that no further MEPA review is required.

October 7, 2016
Date

Matthew A. Beaton

Comments Received:

9/27/2016 Massachusetts Department of Environmental Protection – Northeast Regional Office (MassDEP/NERO)

MAB/HSJ/hsj

Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

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Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Matthew A. Beaton
Secretary

Martin Suuberg
Commissioner

September 27, 2016

Matthew A. Beaton, Secretary
Executive Office of
Energy & Environmental Affairs
100 Cambridge Street
Boston MA, 02114

RE: Peabody
MMWEC Simple Cycle Gas Turbine Project
58-R Pulaski Street
EEA # 15578 (previously EEA #7778)

Attn: MEPA Unit

Dear Secretary Beaton:

The Massachusetts Department of Environmental Protection Northeast Regional Office (MassDEP-NERO) has reviewed the Environmental Notification Form (ENF) submitted by the Massachusetts Municipal Wholesale Electric Company (MMWEC) to construct a dual fuel-fired simple-cycle electricity generating unit (Pratt & Whitney FT 4000 combustion turbine or comparable unit) with a net nominal capacity of 60 MW, a 90-foot stack, and an electric-powered natural gas compressor adjacent to the existing Waters River Station generating units on 0.6 acres of a 4.0 acre site, in Peabody (EEA #15578). The power generating unit will use natural gas as a primary fuel with ultra-low sulfur distillate as a backup fuel. One of the 115,000 gallon fuel oil storage tanks will be replaced with a larger, 200,000 gallon tank, and a new, 10,000 gallon aqueous ammonia storage tank will be installed.

An ENF for a gas turbine generating facility was reviewed in 1989 for the Peabody Municipal Light Plant at Pulaski Street, Peabody. The existing facility includes two simple-cycle electricity generating units totaling 68 megawatts and an 115kV substation. MassDEP provides the following comments.

Air Quality

MassDEP, Bureau of Air and Waste submits these comments in anticipation of a Comprehensive Plan Approval (CPA) application expected from the proponent under 310 CMR 7.02. These comments, while general in content, are submitted to facilitate a technically complete CPA application. MassDEP notes that it may not take action on the CPA Application until the MEPA process has concluded.

1. The proposed project should employ the most effective available sound suppression and/or noise abatement systems for sound-emitting equipment. The proposed project, when combined with the existing facility equipment, should comply with MassDEP's noise regulation and policy with a reasonable margin of safety.

2. The proposed project involves modification of a major stationary source. The change in facility-wide particulate matter (PM) emissions as a result of the modification is stated as 0.23 tons per day. The ENF does not explain or document the basis for determination of the change in PM emissions due to construction of the proposed project. Assuming a 24-hour day, and potential operation of up to 1250 hours per year for the proposed project as stated by MMWEC in the ENF, the change in PM emissions may be interpreted as amounting to 12 tons per year. Lacking speciation of the PM and further assuming that all of the PM is PM with an aerodynamic diameter of 2.5 microns or less ($PM_{2.5}$), the change in PM emissions may be interpreted as exceeding the $PM_{2.5}$ significant emission rate threshold of 10 tons per year. This would subject the modification to the federal Prevention of Significant Deterioration (PSD) regulations and permitting process.

3. The proponent shall be required to conduct an air dispersion modeling analysis to determine compliance with the National Ambient Air Quality Standards (NAAQS) and an air toxics analysis. The analyses shall address emissions from the existing facility in combination with the emissions expected from the proposed project.

4. The aqueous ammonia storage and transfer equipment shall be designed to prevent or contain and minimize fugitive emissions of ammonia during transfer operations or in the event of an accidental release. The proponent shall analyze potential health impacts of a worst case accidental release scenario of ammonia emissions to the ambient air in addition to the air toxics analysis referenced above.

5. The proponent shall comply with all applicable Federal Regulations under 40 CFR Part 60, Standards of Performance for New Stationary Sources and the Acid Rain Program under 40 CFR Parts 72, 73, and 75.

6. The proponent is required to submit an Acid Rain Permit application under 40 CFR Part 72 and comply with the monitoring requirements under 40 CFR Part 75.

7. The proponent is required to submit an Emission Control Plan application in accordance with 310 CMR 7.70, Massachusetts Carbon Dioxide (CO_2) Budget Trading Program.

8. The proponent is required to submit a Significant Modification application to its Air Quality Operating Permit pursuant to 310 CMR 7.00: Appendix C.

9. The proponent shall also comply with 310 CMR 7.01 (general "do not create a condition of air pollution"), 310 CMR 7.02 (plan approval and BACT), 310 CMR 7.06 (visible emissions), 310 CMR 7.09 (dust, odor, construction and demolition), 310 CMR 7.10 (noise), 310 CMR 7.12 (source registration), 310 CMR 7.13 (stack testing), 310 CMR 7.15

(asbestos - if asbestos removal will be required as part of construction), and 310 CMR 7.71 (reporting of greenhouse gas emissions).

Wetlands

According to the ENF, the project would be sited within approximately 1,500 square feet of buffer zone to salt marsh associated with the Waters River. Consequently, the proponent will need to submit a Notice of Intent (NOI) to the Peabody Conservation Commission and MassDEP for buffer zone impacts. At the time of the MEPA review, an NOI had not been submitted.

Massachusetts Contingency Plan (MCP)/M.G.L. c.21E

Contaminated Soil and Groundwater: The ENF indicates that the project has been regulated under the MCP/MGL c21E, Release Tracking Numbers RTN 3-0029192, 3-0023105, 3-0022566, 3-002803, 3-0010854, 3-004300, 3-0022802, 3-0022486, 3-0017331, 3-0013969, and 3-0000410. There is an Activity and Use Limitation for Lot 83A 1A1, restricting this site to industrial and commercial use only. As the proponent is aware, excavating, removing and/or disposing of contaminated soil, pumping of contaminated groundwater, or working in contaminated media must be done under the provisions of MGL c.21E (and, potentially, c.21C) and OSHA. If permits and approvals under these provisions are not obtained beforehand, considerable delays in the project can occur. The project proponent cannot manage contaminated media without prior submittal of appropriate plans to MassDEP, which describe the proposed contaminated soil and groundwater handling and disposal approach, and health and safety precautions. If contamination at the site is known or suspected, the appropriate tests should be conducted well in advance of the start of construction and professional environmental consulting services should be readily available to provide technical guidance to facilitate any necessary permits. If dewatering activities are to occur at a site with contaminated groundwater, or in proximity to contaminated groundwater where dewatering can draw in the contamination, a plan must be in place to properly manage the groundwater and ensure site conditions are not exacerbated by these activities. Dust and/or vapor monitoring and controls are often necessary for large-scale projects in contaminated areas. The need to conduct real-time air monitoring for contaminated dust and to implement dust suppression must be determined prior to excavation of soils, especially those contaminated with compounds such as metals and PCBs. An evaluation of contaminant concentrations in soil should be completed to determine the concentration of contaminated dust that could pose a risk to health of on-site workers and nearby human receptors. If this dust concentration, or action level, is reached during excavation, dust suppression should be implemented as needed, or earthwork should be halted.

Potential Indoor Air Impacts: Parties constructing and/or renovating buildings in contaminated areas should consider whether chemical or petroleum vapors in subsurface soils and/or groundwater could impact the indoor air quality of the buildings. All relevant site data, such as contaminant concentrations in soil and groundwater, depth to groundwater, and soil gas concentrations should be evaluated to determine the potential for indoor air impacts to existing or proposed building structures. Particular attention should be paid to the vapor intrusion pathway for sites with elevated levels of chlorinated volatile organic compounds such as tetrachloroethylene (PCE) and trichloroethylene (TCE). MassDEP has additional information about the vapor intrusion pathway on its website at http://www.mass.gov/dep/cleanup/laws/vifs.htm.

New Structures and Utilities: Construction activities conducted at a disposal site shall not prevent or impede the implementation of likely assessment or remedial response actions at the site. Construction of structures at a contaminated site may be conducted as a Release Abatement Measure if assessment and remedial activities prescribed at 310 CMR 40.0442(3) are completed within and adjacent to the footprint of the proposed structure prior to or concurrent with the construction activities. Excavation of contaminated soils to construct clean utility corridors should be conducted for all new utility installations.

The MassDEP Northeast Regional Office appreciates the opportunity to comment on this proposed project. Please contact Cosmo.Buttaro@state.ma.us at (978) 694-3281 or Edward.Braczyk@state.ma.us at (978) 694-3289 for further information on the air quality issues. If you have any general questions regarding these comments, please contact Nancy.Baker@state.ma.us , MEPA Review Coordinator at (978) 694-3338.

Sincerely,

This final document copy is being provided to you electronically by the Department of Environmental Protection. A signed copy of this document is on file at the DEP office listed on the letterhead.

John D. Viola
Deputy Regional Director

cc: Brona Simon, Massachusetts Historical Commission
Susan Ruch, Rachel Freed, Ed Braczyk, Cosmo Buttaro, MassDEP-NERO