



# STATE OF CONNECTICUT

## CONNECTICUT SITING COUNCIL

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May 5, 2016

TO: Parties and Intervenors

FROM: Melanie Bachman, Acting Executive Director *MB*

RE: **PETITION NO. 1218** – PSEG Power Connecticut LLC petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the construction, maintenance, and operation of a new 485 megawatt (MW) dual fuel combined-cycle electric generating facility at the existing Bridgeport Harbor Station located at 1 Atlantic Street, Bridgeport, Connecticut.

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Comments have been received from the Connecticut Department of Energy and Environmental Protection, dated May 4, 2016. A copy of the comments is attached for your review.

MB/MP/lm

c: Council Members



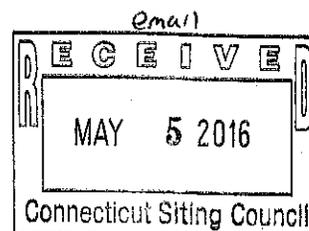
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May 4, 2016

Robert Stein, Chairman  
Connecticut Siting Council  
10 Franklin Square  
New Britain, Connecticut 06051



RE: 485-MW Combined Cycle Natural Gas-fired Generating Plant  
PSEG Power Connecticut, LLC  
Bridgeport, Connecticut  
Petition No. 1218

Dear Chairman Stein:

Staff of this department have reviewed the above-referenced petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need will be required for the proposed 485-MW electric generating facility on the Bridgeport Harbor Station property of PSEG. The combined cycle plant will have dual fuel capability to operate on either natural gas or ultra-low sulfur diesel oil. A field review of the neighborhood surrounding the plant was conducted on April 28 but the plant site itself was not accessed. Based on these efforts, the following comments are offered to the Council for your use in this proceeding.

Site Description

Due to the security measures at the plant site, the April 28, 2016 DEEP field review was confined to the neighborhood around the site. The project site itself consists of the southernmost portion of PSEG's Bridgeport Harbor Station property and is currently occupied by four large fuel oil storage tanks surrounded by a containment berm. A row of red pines are planted atop the western wall of the berm, with the three northernmost pines being dead.

The proposed site is in an industrial area, well buffered from the nearest existing residential uses. The Bridgeport Harbor Station coal-fired plant lies to the north and, due to its massive scale, it visually dominates the area. Directly west of the project site is the 60 Main Street property, currently undergoing demolition. This was the former Remington Shaver factory, ultimately slated to be converted to residential use. The Bridgeport Energy power plant, owned by Emera, sits northwest of the proposed facility, two blocks north of the 60 Main Street property and just west of the main gate to Bridgeport Harbor Station. The Bridgeport Energy plant is modest in scale compared to the Bridgeport Harbor Station plant.

Farther west, across from 60 Main Street, lies the University of Bridgeport campus, with Seaside Park being just beyond that.

The closest existing homes to the proposed plant are cited in the Petition as being 900' west of it. These are three, 3-story homes at 146-148, 154-156 and 162 Main Street, just north of the 60 Main Street property. The first of these, the southernmost, immediately north of 60 Main Street, is vacant and in need of repairing a hole in its roof and assumedly other repairs also. More substantial residential use is found in a broad area northwest of the project site but beginning several blocks distant from it.

The proposed underground 650' long, 345-kV interconnection from the new facility to United Illuminating's Singer Substation will run down Henry Street in a totally industrial environment, though the development of 60 Main Street would place residential use to the south side of Henry Street.

#### Air Permits

PSEG Power Connecticut LLC – Bridgeport Harbor Station (PSEG) submitted Application Nos. 201411158 and 201411160 in November 2014. PSEG is proposing to construct and operate a combined cycle electric generating unit; Unit 5 Combined Cycle Project. The project will include a dual-fired General Electric (GE) Model 7HA.02 combustion turbine with duct burner, one auxiliary boiler, one emergency generator, one fire pump generator, a three cell auxiliary evaporative cooling tower and a fuel tank.

PSEG had submitted this proposed project to ISO-New England for its Forward Capacity Auction #9 in 2015 with the hope that the project might be selected by ISO-New England at that time. The project did not clear the 2015 auction but was selected in the 2016 auction. On March 2, 2016, PSEG submitted an amendment to the original DEEP Air permit applications.

The combined cycle unit would be constructed on a "1 x 1" configuration; that is a single combustion turbine generator (CTG) exhausting to a single supplementary fired Heat Recovery Steam Generator (HRSG). Steam generated in the HRSG will drive a single steam turbine generator (STG). The CTG is capable of producing about 345 MW (gross) when firing natural gas and 347 MW (gross) when fired with Ultra Low Sulfur Diesel (ULSD). The CTG will be equipped with an air intake evaporative cooling system. The CTG will have a Dry Low NOx combustor for natural gas operation and water injection for ULSD. Additionally, emissions will be controlled by a Selective Catalytic Reduction (SCR) system and an Oxidation Catalyst.

The auxiliary boiler will be used to provide steam to the plant when the CTG is either not in operation or is starting up. The emergency generator and the fire pump engines will provide emergency power in the event of a power interruption. The auxiliary evaporative cooling system will handle the cooling loads of all mechanical equipment.

Best Available Control Technology (BACT) Analysis is required for the turbine/duct burner, boiler and emergency engine. BACT for these sources will be satisfied with the above-mentioned control equipment and emission limitations set by the most recent approved BACT determinations.

Two of the most recently approved projects, CPV Towantic located in Oxford (Permit Nos. 144-0023 through 144-0027) and the Pioneer Valley Energy Center located in Westfield, Massachusetts (EPA Final PSD Permit No. 052-042-MA15) are setting the basis for the

greenhouse gas (GHG) BACT. The additional restrictions on the use of ULSD are based solely on the most efficient and clean operating scenario for the equipment. The Department has identified the following conditions under which PSEG will be allowed to use ULSD in the turbine:

1. ISO-NE declares an Energy Emergency and requests the firing of ULSD.
2. The natural gas supply is curtailed by the gas supplier. A curtailment begins when the Permittee receives a communication from the gas supplier stating that natural gas supply will be curtailed, and ends when the Permittee receives a communication from the gas supplier stating that the curtailment has ended.
3. There exists a physical blockage or breakage in the natural gas pipeline.
4. The Permittee is commissioning the combined cycle turbine and, pursuant to the manufacturer's written instructions, the Permittee is required by the manufacturer to fire ULSD during the commissioning process.
5. The firing of ULSD is required for emission testing purposes.
6. Routine maintenance of any equipment that will require the Permittee to fire ULSD.
7. In order to maintain an appropriate turnover of the on-site fuel inventory, the Permittee can fire ULSD when the last delivery of the oil to the tank was more than six months ago.

These restrictions only apply to the turbine while firing ULSD. The remaining equipment in the project is not affected by the restrictions on the use of ULSD.

The construction and operation of the project constitutes a major modification. As such, Prevention of Significant Deterioration (PSD) and Lowest Available Emission Rate (LAER) evaluations will be performed. To comply with the requirements of the non-attainment review, PSEG will be required to obtain 178 tons of NO<sub>x</sub> and 48 tons of volatile organic compound (VOC) offsets.

PSEG has 115 tons of internal NO<sub>x</sub> offsets that were generated from the curtailment on the hours of operation of Unit 2 (Babcock & Wilcox Steam Generator). This leaves 63 tons of NO<sub>x</sub> offsets to be acquired. That quantity of offsets is readily available for purchase.

The supply of available VOC credits is more limited than the NO<sub>x</sub> credits but the necessary quantity of VOC credits should be available.

Throughout the past two years, modeling has been discussed and guidance provided to PSEG. At this time, the technical review of the project is well underway with an expected tentative determination by late summer.

Related to condition #2 above, that of a natural gas supply curtailment, the DEEP Bureau of Energy Technology and Policy is interested in knowing the duration of time that the on-site ULSD supply can support plant operations during such a curtailment. The concern is that the on-site ULSD capacity is sufficient to support plant operations through the duration of any reasonably foreseeable cold snap which would stress gas supplies and availability. Ideally, that Bureau would like to see approximately five day supply of ULSD capacity on-site to support the plant during a prolonged gas supply curtailment.

### Site Remediation

The Petition mentions that site remediation efforts will be undertaken after the removal of the fuel oil storage tanks. Investigation of the extent of contaminated soil cannot be undertaken until the existing tanks are removed. PSEG has submitted a preliminary remedial action plan to DEEP. This plan will be supplemented following the subsurface investigations. Likely sources of soil contamination are operations on the site previous to the construction of the existing tanks, and contaminants in the harbor sediments which were used as fill on the site. During tank removal, any leaks from the tanks would also be identified. Due to the location and proposed future uses of the site, remediation will likely principally rely on rendering areas of contamination inaccessible through the construction of the new plant on top of the contaminated soils. Some limited excavation and removal of soils may also be necessary, especially in any areas of contamination outside of the footprint of the new structure. The use of environmental land use restrictions will regulate the proposed use of the site and any future uses of the site. A demarcation layer marking the location of any areas of contaminated soil, so as to protect it from future disturbance, will be incorporated into the development plan. The goal is to prevent any direct exposure of humans to any contaminated materials.

### Office of Long Island Sound Programs (OLISP) Coastal Regulatory Issues

The existing fuel offloading dock is in need of repair as a result of damage from Hurricane Sandy. This work may be considered to be routine maintenance under the definition of CGS Sec. 22a-363a which defines routine maintenance as "replacement and repair of out-of-water structures including surfaces of docks, piers, wharves and bridges, replacement or repair in any year of up to fifty percent of all pilings approved in accordance with section 22a-361 ...." If the necessary repairs are limited to the elements described in the Petition, this work would require no further review or authorization from DEEP. However, if the necessary repair work turns out to be more substantial than currently envisioned or if pier replacement is necessary, the work would most likely be eligible for approval pursuant to a Certificate of Permission or a General Permit for Coastal Maintenance.

Modification to the stormwater outfall structure, including moving the outfall location within the revetment, will be covered under a Certificate of Permission (COP) from OLISP. That office has been in touch with the applicant on this matter. The COP application to authorize the new discharge pipe will need to include a detailed alternatives analysis demonstrating that the proposed stormwater management design provides the highest level of stormwater treatment feasible given the onsite constraints. The proposal to treat stormwater runoff solely with Vortech units is considered to provide a minimal level of treatment. A treatment train approach, which OLISP advocates, typically results in higher levels of treatment for a wider range of potential pollutants. Additionally, because the stormwater discharge point is within 500' of a tidal wetland, there may be a requirement to retain onsite the volume of runoff generated by the first inch of rain to minimize the impacts of freshwater discharge on the tidal wetland. The inclusion of substantial volumes of new fill in the site development plan appears to offer additional flexibility to incorporate advanced stormwater treatment approaches, including retention, into the proposal.

Regarding the use of retaining walls to contain the fill necessary to raise the plant site elevation to 16' 6", more justification will be necessary to support the compliance of the site development plan with Policy # 16 concerning structural solutions for coastal flood hazard areas.

The compliance justification given on pages 18-20 of Exhibit F for Policy 16 is not sufficient to prove that the use of structural solutions, in the form of the retaining walls, is unavoidable for this site. It may well be that this conclusion can be successfully argued, but justification beyond that given in Exhibit F will be necessary. David Blatt (860-424-3610) or John Gaucher (860-424-3660) of OLISP can be contacted in this regard.

#### Water Permits

No application for a discharge permit for plant wastewaters to the City of Bridgeport municipal wastewater treatment system has yet been received by this department. The Petition speaks of employing an onsite holding tank for collection and ultimately offsite treatment of some of the wastewater streams from the plant. Pending receipt of an inventory of the wastewater discharges which will be directed to the municipal system, we cannot yet say whether these discharges will be handled under a general permit or will require an individual discharge permit.

The project will also require registration under the General Permit for Stormwater and Dewatering Wastewaters from Construction Activities (DEEP-WPED-GP015) to cover activities during the construction interval for the plant. Registration under the General Permit for Stormwaters Associated with Industrial Activities will also be necessary for this project because electric generating plants employing steam for electric power production qualify as an industrial activity under the permit guidance.

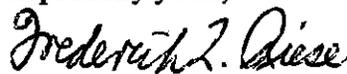
#### Other Issues

The Council should confirm that the proposed plant design is consistent with the latest Federal Emergency Management Agency sea level forecasts and flood standards for the duration of its design life. To the degree possible, the Council should seek assurance that the infrastructure being proposed in this Petition will be available for the duration of its design life.

On another note related to coastal resiliency, the Council should be aware that the Connecticut Department of Housing has received a Natural Disaster Resilience award from the U.S. Department of Housing and Urban Development toward the development of flooding resiliency measures in the project neighborhood of Bridgeport. The project includes: 1) elevating University Avenue to create an access/ egress route that would connect to Park Avenue and provide safe access during significant coastal flooding events, and 2) constructing a flood protection berm from the rail viaduct at Ferry Access Road southward to tie into the high ground of the PSEG plant site and the berm to be constructed as part of the 60 Main Street development.

Thank you for the opportunity to review this petition and to submit these comments to the Council. Should you, other Council members or Council staff have any questions, please feel free to call me at (860) 424-4110.

Respectfully yours,



Frederick L. Riese  
Senior Environmental Analyst

CC: Commissioner Robert Klee