

**Petition No. 812**  
**Connecticut Jet Power LLC (CJP)**  
**Greenwich, CT**  
**Staff Report**  
**July 3, 2007**

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On May 15, 2007, Connecticut Jet Power, LLC (CJP) submitted a petition (Petition) to the Connecticut Siting Council (Council) for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed installation and operation of two additional electric generating units of approximately 20 megawatts (MW) each at its existing Cos Cob facility in Greenwich, Connecticut. On June 13, 2007, Council members Barbara Currier Bell and Brian Emerick and Derek Phelps and Christina Lepage of Council staff met with CJP and NRG representatives Andrew Lord, Ray Long, Tom Walker, Jonathan J. Milley and Nick Galotti at the Cos Cob facility.

CJP is a wholly owned subsidiary of NRG Energy, Inc. (NRG). NRG is a power generation company with an approximately 25,000 MW portfolio. NRG is headquartered in Princeton, New Jersey and owns and operates power-generating facilities in the Northeast and through the United States.

The proposed combustion turbines would increase the power output to help meet the demand for electrical energy and reserves in the region by providing quick-start capacity in southwest Connecticut. The Independent System Operator – New England, the Connecticut Energy Advisory Board and the Connecticut Department of Public Utility Control have recognized the need for installation of additional fast-start capacity in Connecticut.

The Cos Cob facility is located within 1,000 feet of the Cos Cob Harbor in an area zoned as Waterfront Business. The facility was constructed by the Connecticut Light and Power Company (CL&P) in 1969 and was purchased by CJP in 1998. The facility is situated within the existing CL&P Cos Cob 115 kV substation on a 0.94 acre parcel that is owned by CL&P but for which NRG has an exclusive easement within the substation.

The existing facility is currently comprised of three Pratt & Whitney FT4-A9 LF CTs (known as units 10, 11, 12), which are fueled with aviation grade No. 55 kerosene. Fuel is trucked to the site and stored in a 296,000 gallon storage tank located on the property. The three existing units have a nominal generating capacity of 20 MW each for a total of 60 MW. The units are quick-start capable and can begin generating electricity within ten minutes.

CJP proposes the installation of two additional combustion turbines to the existing Cos Cob facility. The new units would also be Pratt & Whitney FT4-A9 engines with a nominal rating of 20 MW each (Units 13 and 14). The proposed units would be installed in the area between the existing units that is currently used for the existing control enclosures and fuel forwarding equipment. The control enclosures would be relocated to the south of their respective units and the fuel forwarding equipment would be relocated near the fuel oil storage tank.

Both the existing and proposed control equipment would be upgraded from a relay based system to a programmable logic control system to enhance plant reliability. A new air start compressor and air receivers would be installed to supply starting air for all five units.

Modification of the existing electrical interconnection would be required to accommodate the additional generation. The existing 13.8 kV/115 kV 75 MVA generator step up transformer would be replaced with a new 13.8 kV/115 kV 125 MVA transformer that would connect all five generators to CL&P's 115 KV transmission system. The existing 13.8 kV tube bus would be replaced with a higher duty bus from the units to the proposed new transformer.

The facility would be re-configured to run on ultra-low sulfur fuel to reduce sulfur dioxide emissions from the facility by 97%, including the existing equipment and the additional two turbines. The annual sulfur emissions from the Cos Cob facility would be reduced from the current 1,100 pounds (with three units using jet fuel) to 75 pounds (with five units using ultra low sulfur fuel).

The two proposed units would use water-injection to control nitrogen oxide (NO<sub>x</sub>) emissions. This technology requires de-mineralized water, which would be provided through a portable water treatment system. The water treatment system would require a new two-inch water line (to be installed by the local water company), an approximately 10,000 gallon de-mineralized water storage tank and a water injection skid, which would be located within an enclosure adjacent to the turbines. The proposed units would have NO<sub>x</sub> emission rates that are 70% less than the emission rates of the existing units. Total NO<sub>x</sub> emissions from the facility would be 24.9 tons per year, which is below the major source threshold.

The facility would be designed to meet Best Available Control Technology standards for SO<sub>2</sub>, NO<sub>x</sub>, carbon monoxide, volatile organic compounds and particulates. The proposed project is designed to meet applicable state and federal air quality requirements and the terms of the Permit to Construct and Operate. CJP applied to the Connecticut Department of Environmental Protection for the Permit to Construct and Operate on March 23, 2007. The site currently has a Title V Operating Permit from the DEP. The permit expired on October 16, 2005; however, CJP submitted a timely permit renewal application to the DEP so the permit is deemed to still be in effect. CJP would be required to submit a request to revise the Title V Permit within 12 months of commencement of operations of the proposed project.

Visual impact to the surrounding community would be reduced with the addition of new year-round foliage plantings and a new fence. The existing facility buildings would be repainted a softer more neutral color and the protruding filter housing on Unit 10 would be replaced with a less obtrusive filter housing that would match the other units. The existing fuel tank located at the rear of the facility would also be repainted a less prominent color. Prior to performing this work, CJP would consult with the Town of Greenwich's consulting engineers, who are designing a new town park adjacent to the substation property.

A sound attenuation barrier would be installed adjacent to the neighboring driveway on the western, eastern and northern boundaries of the facility to reduce the overall sound level by a minimum of five decibels (db) at the nearest neighboring buildings, with the additional turbines.

Adjacent land uses to the proposed site include an office building to the west, town property to the east (the former Cos Cob power plant) that will be converted to a town park, a railroad station to the north and a condominium complex to the south.

The existing units have run, on average, approximately 60 hours per year. Sound generated by the facility is limited to the hours of operation. The modified facility would continue to provide peaking electrical resources to southwestern Connecticut and, therefore, the number of hours that the facility runs annually is not expected to increase.

Construction of the proposed project is expected to begin in Fall 2007 and be completed in May 2008.

In a letter dated May 24, 2007, the Town of Greenwich Planning and Zoning – Land Use Department provided recommendations to the applicants of the proposed project. Recommendations included:

- Noise attenuation barriers should be placed along all four property lines and be as high as possible (at least 10 feet) along the property lines of the office building and the condominiums. An additional barrier should be built abutting the town's property to the east.
- If a noise barrier is not possible along the street, then solid fencing should be installed and moved back as far as possible from the roadway toward the equipment to provide visual screening and added security. The height of the barrier should be at least equal to the height of the inlet filter housings (24 feet).
- Provide an acoustical engineer's report to support the assertion that "the overall sound level will actually be reduced by 5 decibels."
- Fill existing gaps in landscaping along the western boundary of the site. Two new extra tall plants should be located opposite, and at the height of, the tower assemblies for the units to screen the towers above the sound barrier.
- Paint colors throughout the entire site should be a uniform battleship grey.
- A maintenance plan should be provided to ensure the efficiency and safety of the plant operation.
- Soil and erosion controls should be used during construction, especially along the road and catch basins (including hay bales) to prevent toxic chemicals from flowing into the town storm water system.
- Temporary use of the town's property for parking and vehicle access should be reviewed and approved by the property departments.
- DEP Voluntary Remediation Program should be contacted to determine whether or not the site should be sampled and remediated.

NRG would accept the recommendations of the Town of Greenwich with three modifications:

- NRG would install 12-foot sound walls along the western and eastern boundaries of the site. A sound barrier along the southern boundary of the property would not provide meaningful sound attenuation. A sound barrier located closer to the southern end of the turbines would provide better sound attenuation but a continuous barrier is not possible due to existing and proposed equipment on the property. NRG would make every effort to incorporate sound barriers into the design to reduce sound levels from the southern end of the turbines.
- Along the northern boundary of the site, NRG originally thought that a noise barrier would not be feasible. However, after further analysis and engineering, NRG has determined that a 12-foot sound attenuation wall could be constructed along this boundary.
- The town letter recommended that the facilities at the site be painted a uniform battleship grey; however, at a meeting with the Planning and Zoning Commission, NRG agreed to paint the facilities a neutral earth tone to improve the appearance.

In an email dated July 25, 2007, Diane Fox, Town Planner for the Town of Greenwich, states that she is satisfied with an interim report from NRG's acoustical engineer. NRG stated that they would provide the Town of Greenwich with the final report prior to the filing final detailed plans or issuance of the building permit. Also, the town agrees that the color of the equipment, sound barrier and walls should be a shade of grey, not necessarily "battleship grey" and the final color would be submitted to the town for discussion prior to installation.