



May 16th, 2023

Board of Directors
Big Six Towers, Inc.
c/o Ms. Maria Platis
Metro Management Development, Inc.
General Manager
Big Six Towers, Inc.
60-10 Queens Boulevard
Woodside, NY 11377

Reference: Big Six Towers, Inc. Power Plant Short Term Planning Assessment

Dear Board of Directors,

As recently requested, Waldron Engineering of New York, P.C. (“Waldron”) has completed a review of the short term needs of Big Six Towers with regards to continued operations of the existing power plant. As you know, Waldron completed a study of repowering options for your facility in August, 2022. That study, however, was forward-looking and based upon the premise that the existing power plant had reached the end of its useful life. The primary goal of that study was to identify the best path forward for Big Six Towers in consideration of the capital and operating expenses a new or repowered facility would incur, the costs and potential benefits of interconnecting to the Con Edison electric grid, and the merits of various on-site renewable technologies that could be deployed.

The key drivers of the previous analysis were as follows:

1. The age and inefficiency of the existing power plant, which as noted above was largely a given at the time of the previous analysis. It was generally understood that continued reliance on the existing power plant was untenable.
2. Local Law 38 will result in the inability of Big Six Towers to renew operating licenses for its existing engines, beginning in Year 2025.
3. Local Law 97 as presently implemented will result in operating penalties in the future for Big Six Towers unless energy use and/or emissions reductions are achieved through the next phase of capital investment in the energy infrastructure—investment which is essential to assuring continued supply of energy for the community.

The purpose of the assessment documented in this letter was to take a closer look at the immediate concerns associated with continued operation of the existing power plant. The power plant is the only source of electricity to Big Six Towers and without it the community would be stranded without electrical power for an extended time and/or incur the high cost of renting and operating temporary generators.

A review of data gathered in the previous study, supplemented by recent discussions held with the Big Six Towers Operations team and Foley, Inc. (“Foley CAT”), the maintenance provider for the engines, reveal the following metrics and considerations for the existing plant:

- The existing Model 399 engines within the power plant are 1980’s technology. These engines, once a flagship product for the manufacturer, are no longer manufactured. Also, at this time the engines are no longer permitted for continued use in marine service due to emissions and have generally been decommissioned in that application.
- The cost of spare parts is increasingly difficult to obtain. Waldron has spoken with other engine owners in the New York City area and received similar reports regarding older model engines like those presently installed at Big Six Towers. Parts in some cases have taken four months to obtain, and often must be sourced in secondary markets overseas. In the event of a part failure there is no guarantee a replacement will be available and extended engine downtime could occur.
- The existing engines are beyond their intended useful lives and must be operated at relatively low load to avoid risking damage. One reason for doing so is simply to minimize the dynamic forces on the old equipment; a second reason is that the power plant ventilation system is equally old and is presently incapable of cooling the engine room in the summer.
 - The engines were originally designed for operation in a maximum room temperature of 115°F. Both Big Six Towers Operations and Foley CAT maintenance personnel reported temperatures considerably higher—above 130°F at times.
 - The ventilation system pulls air across the engine block before the generator, which is reverse of how it would preferably be done. This results in poor cooling of the electric generators and the need to keep them at relatively low load if possible to prevent overheating and damage. Even with this operating approach, a generator failure occurred last year.

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- Due to the age of the engines, the challenge with obtaining parts, and the basic wear and tear that has accumulated over 40+ years of service, the cost of maintenance is very high. Based on numbers provided by Big Six Towers Operations, the cost of maintenance per kWh of delivered electricity is over \$0.06/kWh. A maintenance service contract on a new engine, in contrast, would have a market rate closer to \$0.02/kWh.
- Three (3) of the existing engines still burn diesel fuel, which is necessary for frequency and voltage stability of the Big Six Towers electrical system because the natural gas fired engines are not as able to accommodate load swings. Two of the natural gas fired engines were the same make and model as the diesels but were converted to natural gas later and as a result were never optimized for natural gas service. The fuel cost that is incurred to run diesel fuel for system stability is expensive, and using fuel costs that were applied in the previous power plant study, results in a fuel cost per unit of produced electricity of approximately \$0.23/kWh as compared to \$0.09/kWh for new natural gas engines.
- To summarize the economic disadvantages of continued reliance on the existing power plant, as compared to the operation and maintenance costs of new engines, Big Six Towers is presently paying a premium of at least \$300,000 per year in maintenance costs, and a premium of at least \$1,000,000 in fuel costs. As long as the existing power plant remains the sole source of electricity to Big Six Towers, there is no way to avoid paying these cost premiums.

Given the above, in Waldron's opinion there is an urgent need to secure an alternate source of electricity for Big Six Towers. Failure to do so exposes the community to risk of electrical service disruptions that cannot be easily resolved, and that will come with the additional cost of securing and operating temporary / rental generators for an extended period of time.

The recommendations of the previous study Waldron completed to assess the best path forward for Big Six Towers are still generally valid; however, the timeline that remains between today's date and the day when Local Law 38 requires retirement of the power plant—unless special dispensation is achieved—is already a year shorter than when the study was published. Therefore, typical project delivery times combined with the extended lead times for new equipment that exist in the present marketplace may require consideration of a phase approach and/or stopgap measures.

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In Waldron's opinion immediate action is required to minimize the ongoing risk of disruption to the Big Six Towers electricity supply, to reduce the risk of expensive relief measures that would be required in the event of engine failure, and to enable a smooth transition to the new systems required for the future.

Sincerely,
Waldron Engineering of New York, P.C.

A handwritten signature in blue ink that reads "Michael Mark".

Michael Mark, P.E.
Project Manager

cc: Mike Olec, Big Six Towers Power Plant Manager
Dan Weeden, Enervative Consulting