

July 29, 2014

**MEMORANDUM TO THE TRUSTEES**

**FROM THE PRESIDENT and CHIEF EXECUTIVE OFFICER**

**SUBJECT: Small Clean Power Plants –  
Combustion Turbine Control Systems Upgrade –  
Capital Expenditure Authorization Request**

**SUMMARY**

The Trustees are requested to authorize a capital expenditure in the amount of \$11 million for the purchase and installation of new control systems to upgrade the existing eleven LM6000 Combustion Turbine Power Generators (“Combustion Turbines”) at each of the Authority’s Small Clean Power Plants (“SCPPs”) located in New York City and Brentwood, Long Island.

The Authority intends to procure the control systems through its current contract with GE Packaged Power (Contract No. 4600002573) (the “GE Packaged Power Value Contract” or the “Contract”), which was approved by the Trustees on September 24, 2012. The Contract is currently capped with a compensation limit of \$40 million and is valid through December 31, 2017. Trustee approval is sought to issue a change order to the Contract, extending its term for two years, through December 21, 2019, and increasing the current contract compensation limit by \$11 million for a total aggregate contract value of \$51 million.

**BACKGROUND**

Section 2879 of the Public Authorities Law and the Authority’s Guidelines for Procurement Contracts require the Trustees’ approval for extending a “Services” contract that was previously approved by the Trustees, for a cumulative term of more than one year. In addition, the Authority’s Expenditure Authorization Procedures requires the Trustees’ approval for capital expenditures in excess of \$3 million as well as any cumulative change order in excess of \$3 million.

In 1999, the Authority was tasked to meet an ‘urgent need’ for new electric power generation in the metro-New York area. The Authority’s eleven Combustion Turbines were purchased and installed at each of the Authority’s SCPPs in 2000. In the interest of time, the Combustion Turbines were purchased from General Electric’s stock “as equipped.” Four Combustion Turbines shipped with a Woodward Netcon control system made by Woodward Controls Inc. and seven turbines shipped with the GE Mark VI control system made by General Electric Company. The past thirteen years of operating the Combustion Turbines have enabled the Authority to compare and contrast the performance and reliability of both control systems. The Woodward Netcon control system has proven to be far more reliable than the GE Mark VI control system. Woodward Controls Inc. is now a wholly-owned subsidiary of General Electric Company and its products are sold through General Electric Company.

Both the existing Woodward Netcon control system and the existing GE Mark VI control system are at the end of their product support cycle. In 2012, the manufacturers for both products provided the Authority with a notice of intent to render the aging systems obsolete, and the Authority began planning and engineering the required upgrades. Presently, the existing Woodward Netcon control system installed on the four Combustion Turbines located in the Bronx is obsolete. A time-line to total obsolescence provided for the GE Mark VI system sets forth a phased approach to obsolescence that begins in 2015.

In 2013, the Authority's four Combustion Turbines located in the Bronx were selected by The Consolidated Edison Company as "Black-Start" units intended to have the ability to restart the electrical system for New York City without reliance on the electrical grid following a hypothetical regional blackout. The technical requirements of the Black-Start Project mandate engineering and software upgrades to the control systems of the 'Black Start' units that are presently using the obsolete Woodward Netcon control system.

The Authority's engineers and operators have determined that a systematic migration of all eleven Combustion Turbines over to a standardized control system platform will enable the Authority to avoid unplanned outages, reduce outage durations, and improve operational reliability of the Combustion Turbines while routine maintenance and repairs are made. Aligning of the Combustion Turbine Control System Upgrade Project with the requirements of the Back-Start Project exhibits both prudent engineering principles and cost-effectiveness.

## DISCUSSION

After a comprehensive review of the past performance of both aging control systems, consultation with other utility owner/operators, and an examination of migration proposals, the Authority's engineers and operators selected the Woodward Micro-Net Plus control system as the new standardized platform. This control system is fully supported by the General Electric Aero Division (the original equipment manufacturer of the LM6000 Combustion Turbines), based out of Houston, TX, the location of the Authority's repair center for the LM6000 Combustion Turbines, which are maintained and serviced under the current GE Packaged Power Value Contract.

The Authority's engineers evaluated alternative solutions, and concluded that upgrading the Combustion Turbines with the Woodward Micro-Net Plus is the only viable solution that also preserves the warranty provided under the GE Packaged Power Value Contract for the support of the LM6000 Combustion Turbines. Since GE Packaged Power is the proprietary owner of the source codes and other pertinent information necessary to safely operate the LM6000 Combustion Turbines, the replacement of the control systems will be planned, designed, purchased and installed under the current GE Packaged Power Value Contract as a single source procurement. An increase of \$11M to the compensation limit of \$40M currently applicable to the GE Packaged Power Value Contract is required to purchase and install the Woodward Micro-Net Plus, bringing the total compensation limit of the GE Packaged Power Value Contract to \$51M.

The project will progress based on the following phased approach:

2012 – Began the evaluation and selection process for a new Combustion Turbine control system platform

2013 – Specified, designed, planned, and scheduled the installation of the new Combustion Turbine control system platform

2014 – Preliminary funding approval for the Combustion Turbine Control System Upgrade Project; and replacement of the obsolete control systems for the four Combustion Turbines located in the Bronx to support the Black-Start Project

2015 to 2019 – Replacement of the aging control systems for the remaining seven Combustion Turbines located in New York City and Brentwood, Long Island

#### FISCAL INFORMATION

Funding for the Combustion Turbine Control System Upgrade Project is included as a component of the Southeast New York (“SENY”) ten-year capital budget plan and the Authority’s overarching capital budget. The new Woodward Micro-Net Plus control system will be designed, purchased and installed through a change order to the existing GE Packaged Power Value Contract. Payments associated with this project will be made from the Authority’s Capital Fund.

#### RECOMMENDATION

The Senior Vice President – Power Generation, the Acting Vice President – Procurement, the Regional Manager – Southeast New York and the Director – Operations of the Small Clean Power Plants recommend that the Trustees authorize (i) the capital expenditure in the amount of \$11 million; and (ii) a change order to the existing GE Packaged Power Value Contract (#4600002573) extending its term for two years, through December 31, 2019, and increasing the current contract compensation limit by \$11 million for a total aggregate contract value of \$51 million for the Small Clean Power Plant Combustion Turbine Control System Upgrade Project.

For the reasons stated, I recommend the approval of the above-requested action by adoption of the resolution below.

Gil C. Quiniones  
President and Chief Executive Officer

**RESOLUTION**

RESOLVED, That pursuant to the Authority’s Expenditure Authorization Procedures, approval is hereby granted to authorize capital expenditures in the amount of \$11 million for the Small Clean Power Plants (“SCPPs”) Mark VI – CT Controls Upgrade project as recommended in the forgoing memorandum of the President and Chief Executive Officer; and be it further

RESOLVED, That pursuant to the Guidelines for the Procurement Contracts Expenditure Authorization Procedures adopted by the Authority, a change order to the GE Packaged Power Value Contract (**Contract No. 4600002573**) is hereby approved extending its term for the period of time indicated, and increasing its amount for the purpose listed therein as recommended in the forgoing memorandum of the President and Chief Executive Officer;

<b><u>Contractor</u></b>	<b><u>Approval</u></b>
<b>GE Packaged Power</b>	<b>\$40 Million – Original Amount</b>
<b>Houston, TX</b>	<b><u>\$11 Million – Requested Increase</u></b>
<b>Contract No. 4600002573</b>	<b><u>\$51 Million</u> – Adjusted Amount</b>
	<b>December 31, 2019 – Revised Project Completion Date</b>

AND BE IT FURTHER RESOLVED, That the Chairman, the Vice Chair, the President and Chief Executive Officer, the Chief Operating Officer and all other officers of the Authority are, and each of them hereby is, authorized on behalf of the Authority to do any and all things and take any and all actions and execute and deliver any and all agreements, certificates and

other documents to effectuate the foregoing resolution, subject to the approval of the form thereof by the Executive Vice President and General Counsel.