



Date: September 27, 2016

To: THE TRUSTEES

From: THE PRESIDENT and CHIEF EXECUTIVE OFFICER

Subject: Procurement (Services) Contract
PV-20 Submarine Cable Replacement Project
Request for Additional Funds and Change Order Authorization

SUMMARY

The Trustees are requested to approve an increase in the funding for the three-year contract with LS Cable & System (4500264592), of South Korea, for the PV-20 Submarine Cable Replacement Project ('PV-20 Project'), in the amount of \$12,000,000 for a total contract amount of \$58,708,461. The requested increase includes a change order in the amount of \$6,170,027.95 for deferral of transition station demolition to 2018, additional Horizontal Directional Drilling ("HDD"), winter storage of the HDD equipment, North American Electric Reliability Corporation ("NERC") Critical Infrastructure Protection ("CIP") security upgrades, and the implementation of an Aquatic Invasive Species Management Plan ("AISMP"), necessitated by site conditions requiring an alternate drilling option and additional permit conditions. Additional funds in the amount of \$5,829,972.05 are being requested should the field work require further modifications. The increase in the authorized amount for the contract is inclusive of the requested Change Order and for additional materials, installation, testing and commissioning services in support of the project, should any additional emergent conditions requiring mitigation arise.

BACKGROUND

In accordance with the Authority's Expenditure Authorization Procedures, Change Orders in excess of \$3 million require the Trustees' approval.

At their September 29, 2015 meeting, the Trustees approved the Capital Expenditure Authorization Request ("CEAR"), estimated at \$68.7 million, and the award of a multi-year contract to LS for the PV-20 Project in the amount \$46,708,461. The CEAR requires no additional funding as a result of this request.

The existing 115kV PV-20 circuit connects NYPA's Plattsburgh Substation in Beekmantown, NY to the Vermont Electric Power Company ("VELCO") Sand Bar Substation in Milton, VT. The circuit is comprised of a combination of 115kV overhead line sections, 115kV fluid-filled submarine cable sections, and 230 kV nitrogen-filled high pressure pipe-type cable section.

The PV-20 transitions to oil filled submarine cables when it reaches the Cumberland Head Transition Station and then continues on the Lake Champlain bottom for approximately 1.7 miles where it emerges at the Grand Isle terminal in Vermont. The submarine cable portion consists of four (1 spare) original 500 kcmil cables installed in 1958, and three additional 1000 kcmil cables installed in 1970. The terminations at either end of the cable are virtually identical.

This project will replace and dispose the existing seven (7) cables with four (4), single core 3553 kcmil XLPE submarine cables (3 phase conductors and 1 spare), to be installed at 230 kV rated insulation and operated at 115 kV, including the replacement of existing terminal structures with new terminal structures.

A memorandum of understanding between NYPA and VELCO was entered into on September 18, 2013 wherein NYPA and VELCO agreed to pursue the Project on a 50%-50% cost basis.

DISCUSSION

The following additional work and contract option were necessitated following the issuance of the contract to LS Cable & System:

- NYPA and VELCO exercised the contract option to defer transition station demolition to 2018 for mitigation strategy in the event of a pre-mature cable failure.
- Horizontal Directional Drilling constructability and “frac-out” concerns were raised by LS’s subcontractor, Caldwell Marine, with respect to the original HDD plan. Frac-out is an undesirable condition where drilling mud is released through fractured bedrock into the surrounding rock and sand and travels toward the surface. In order to eliminate the constructability concerns and reduce the frac-out risk and potential impacts to the environment, an alternate drilling option was developed and accepted by NYPA and VELCO. This resulted in an increased drilling cost as the drill rig has to be placed further inland to avoid interference with existing transmission lines.
- Due to space limitations and to prevent extensive outages, the Cumberland Head Transition Station is being relocated, resulting in additional cost for the increased length of the submarine cables.
- Security requirements were upgraded to be NERC-CIP compliant, resulting in additional engineering, materials and implementation costs.
- The implementation of an Aquatic Invasive Species Management Plan was unforeseen and a condition mandated by the VT 248 permit.

In order to allow sufficient funding, should the field work require further modifications (i.e., Turbidity Monitoring Plan, Storm Water Pollution Prevention Plan, Steel Structures, Additional Oversight), an additional \$5.8 million above the revised contract value is requested.

FISCAL INFORMATION

Payments associated with this project will be made from the Authority’s Capital Fund.

RECOMMENDATION

The Senior Vice President and Chief Engineer – Operations Support Services, the Acting Vice President – Project Management, the Senior Vice President – Transmission, the Vice President – Procurement, and the Project Manager, recommend that the Trustees approve a \$12 million increase to the authorized amount for the contract awarded to LS Cable & System, which includes a change order in the amount of \$6,170,027.95.

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 Guidelines for Procurement Contracts adopted by the Authority and the Authority's Expenditure Authorization Procedures, approval is hereby granted to authorize the increase in the contract awarded to LS Cable & System of South Korea, from approximately \$46,708,461 to \$58,708,461, which includes a change order in the amount of \$6,170,027.95, to fund additional scope, materials, installation, testing and commissioning services in support of the project, as recommended in the foregoing memorandum of the President and Chief Executive Officer.

<u>Contractor</u>	<u>Contract Approval</u>
LS Cable & System South Korea (4500264592)	3 years
Change Order Request	\$ 6,170,027.00
Additional Funding Request	<u>5,829,972.05</u>
Total Request	\$12,000,000.00
Previous Authorization	<u>46,708,461.00</u>
Total Contract Award	<u>\$58,708,461.00</u>

AND BE IT FURTHER RESOLVED, That the Chairman, the Vice Chairman, 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.