



Date: July 30, 2015

To: THE TRUSTEES

From: THE PRESIDENT and CHIEF EXECUTIVE OFFICER

Subject: **St. Lawrence/FDR Power Project – Massena Substation
Auto-Transformer Replacement Project –
Increase in Authorized Funding and Contract Authorization**

SUMMARY

The Trustees are requested to increase the Capital Expenditure Authorization Request (“CEAR”) for the removal of the existing Massena Substation Auto-Transformers and for site preparation for the new SMIT 765 kV Auto-Transformers (Banks 1 & 2) from the previously authorized amount of \$27.3 million to \$32.4 million. This \$5.1 million increase is required for additional work for engineering and construction services.

The Trustees are also requested to approve an increase of \$1.65 million in the contract authorization for O’Connell Electric Company, Inc. (“OCE”) of Victor, NY to \$7.766 million to fund improvements to the Massena Substation Auto-Transformer Replacement Project.

BACKGROUND

In accordance with the Authority’s Expenditure Authorization Procedures, capital expenditures in excess of \$3 million require the Trustees’ approval. Also, in accordance with the Authority’s Expenditure Authorization Procedures, additional funding that exceeds 25-percent of the originally approved contract amount requires the Trustees’ approval.

At their meeting on December 18, 2012, the Trustees approved a Capital Expenditure Authorization Request and approved an award of a competitively bid contract to SMIT Transformers (PO# 4500226810) to provide six 765 kV/230 kV auto-transformers.

At their meeting on May 22, 2014, the Trustees approved the award of a two-year contract to OCE (4500245184) in the amount of \$5,190,480 for demolition and removal of existing utilities and structures in anticipation of receiving the new 765/230 kV auto-transformers at Massena Substation. A Change Order to OCE in the amount \$927,421 was issued in December 2014 for the cost of additional protection and controls for the auto-transformers and the preparation of temporary storage pads, secondary containment and temporary power for extended storage of the auto-transformers due to deferred construction start as a result of the New York Independent System Operator’s (“NYISO”) denial of the initial outage request.

DISCUSSION

The Massena Auto-Transformer Banks No. 1 and No. 2 consist of seven single-phase auto-transformers, three for each bank and one designated as a spare, to be put into service in the event of a failure. On July 8, 2008, Transformer 2A from Auto-Transformer Bank No. 2 failed and was replaced with the existing spare transformer. A replacement auto-transformer was ordered in 2012 from SMIT. In March 2012, auto-transformer 1X failed which left the

Massena substation with only one autotransformer bank in service and the MM2 line out of service. This event left the Massena Substation without a spare to handle a contingency failure in either of the Auto-Transformer Banks and severely restricted operational conditions.

The Authority's Engineering department attributed both failures to a common mode occurrence of which the remaining auto-transformers are at risk. The auto-transformers are critical long lead time electrical components required for successful operation and function of the substation. A future failure of a single auto-transformer may result in a heavily restricted operational condition of the 765 kV transmission system with both MMS lines out of service. As a result, all six auto-transformers at the Massena Substation are being replaced.

TRC was engaged to develop a civil, electrical substation installation package for the new auto-transformers. During the engineering phase, the existing civil condition of the transformer pads and surrounding containment bays was assessed to determine if the pedestals could accept the new transformers. After completion of the initial design and development of estimates, additional improvements were identified including the installation of a containment liner system, relocation of the Marshalling Cabinets to increase operational and maintenance efficiency, installation of new trenches and cable tray systems, and modifications to SCADA systems and alarm schemes.

The additional construction and engineering includes demolition of the existing marshalling cabinets, design for the three new marshalling cabinets to include 480V system and wiring diagrams for the ATS system, a new design for the tertiary equipment stands and bus supports and a new protection and control engineering package for the alarms, annunciation and SCADA control. The new civil design for the existing transformer pedestals required reinforcement with concrete infill along with leveling transformer foundations to accept the new SMT auto-transformers. Additionally, in order to take advantage of the existing outages and resource availability, aspects of the Switchyard Life Extension and Modernization were incorporated into this project.

In order to maintain the current project schedule and complete the additional improvements by early 2016, Change Orders in the amount of \$1.65 million will be issued to OCE increasing the contract value to \$ 7.766 million. This amount includes \$600,000 for the removal of contaminated stone from the containment pit if deemed necessary and will only be released to OCE if the need arises and will not be reflected in the amended Purchase Order.

Summary of project funding is as follows:

	Change Order (\$000)	Contract Totals (Rounded) (\$000)
Original Contract Award		5,190
Change Order #1	927	
Current Change Order Approval Request	1,648	
Cumulative Change Orders		2,575
Total OCE Contract		7,766

% above authorized		49.6%
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ENGINEERING, PROCUREMENT, CONSTRUCTION, DIRECT and INDIRECT COSTS

The Trustees are requested to approve additional Capital Expenditures for construction and Authority Direct and Indirect costs to continue the design and construction of the Massena Substation as follows:

	Previous Estimate (\$000)	Current Request (\$000)	Current Total Estimate (\$000)
Preliminary Engineering/Licensing	250		250
Engineering/Design	330	2,200	2,530
Procurement	18,060		18,060
Construction/Installation	6,480	2,680	9,160
Authority Direct/Indirect	2,130	250	2,380
	27,250	5,130	32,380

The construction cost includes funds for an increase in contract award to OCE. Future-year funding for design and construction will be included in the Capital Budget request for that year.

FISCAL INFORMATION

Payment 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 Vice President – Project Management, the Vice President – Engineering, the Vice President – Transmission, the Regional Manager – Northern NY, the Vice President – Procurement and the Project Manager recommend that the Trustees authorize an increase of \$5.1 million in Capital Expenditures and an increase in O’Connell Electric Company, Inc.’s contract value to \$7.766 million be approved for the Massena Substation Auto-Transformer Replacement Project as indicated above.

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, \$5.1 million is hereby authorized for increased engineering and construction support for the Massena Substation Auto-Transformer Replacement Project;

<u>Capital</u>	<u>Expenditure Authorization</u>
St. Lawrence/FDR Power Project – Massena Substation Auto-Transformer Replacement Project	
Previous Authorization	\$ 27.3 million
Additional Request	\$ <u>5.1 million</u>
Total Authorization	\$ <u>32.4 million</u>

AND BE IT FURTHER RESOLVED, That an increase in O'Connell Electric Company, Inc.'s contract value to \$7.766 million to fund improvements to the Massena Substation Auto-Transformer Replacement Project as recommended in the foregoing memorandum of the President and Chief Executive Officer is hereby approved;

<u>Contractor</u>	<u>Contract Authorization</u>
O'Connell Electric Company, Inc. Victor, NY (4500245184)	
Total Authorization	\$ <u>7.766 million</u>

AND BE IT FURTHER RESOLVED, That the 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.