

July 29, 2014

MEMORANDUM TO THE TRUSTEES

FROM THE PRESIDENT and CHIEF EXECUTIVE OFFICER

SUBJECT: Niagara Power Project – Lewiston Pump Generating Plant Life Extension and Modernization Program – Increase in Expenditure Authorization and Release of Remaining Pump Turbine Units

SUMMARY

The Trustees are requested to increase the expenditure authorization limit for the Niagara Power Project's Lewiston Pump Generating Plant ("LPGP") Life Extension and Modernization Program ("LEM Program") from the previous authorized capital expenditure amount of \$252.44 million to \$300 million. The Trustees are also requested to approve the release of the remaining six pump turbines to Mitsubishi-Hitachi Power Systems of America, Ltd. ("MHPSA") of Basking Ridge, NJ.

This additional \$47.456 million, which is included as part of the original Capital Expenditure Authorization Request, will be utilized to release long-lead time equipment for the remaining units to be overhauled. The major equipment releases required include new: turbines, head covers, wicket gates, generator rotor poles and stator coils, unit control systems, static excitation systems and associated unit auxiliary equipment in order to maintain the schedule.

The total estimated cost of the LPGP LEM Program will remain unchanged at \$460 million.

BACKGROUND

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

At their June 29, 2010 meeting, the Trustees approved the Capital Expenditure Authorization Request ("CEAR") for the LPGP LEM Program, estimated at \$460 million, to renew the generation assets of LPGP, and were advised that the LEM Program would commence and require about ten years to complete. The Trustees also authorized capital expenditures in the amount of \$131 million and the award of a ten-year contract to Hitachi Power Systems America, Ltd ("Hitachi"), in the amount of \$174 million, to replace 12 pump turbine runners including equipment overhauls. At that time, Hitachi was only released to proceed with the first six pump turbines at a value of \$76 million.

At their November 9, 2012 meeting, the Trustees approved an increase in capital expenditures from \$131 million to \$252.544 million for the release of long-lead time equipment and to fund the rehabilitation work up to the sixth unit.

On February 3, 2014, Mitsubishi Heavy Industries, Ltd. and Hitachi, Ltd. announced a new joint venture between the two organizations, Mitsubishi-Hitachi Power Systems of America, Ltd. (“MHPSA”), which will be responsible for completing this ten-year contract.

The remaining six turbines will be released to MHPSA over the next three to five years in an effort to expedite its fabrication and delivery to support the LPGP LEM schedule. Additionally, there have been recent issues regarding “insolvency proceedings” for MHPSA’s subcontractor, Litostroj, located in Slovenia, which successfully fabricated the first five turbine runner components. MHPSA is presently utilizing two new foundries for the sixth runner components due to the financial issues at Litostroj. Therefore, the intent is to mitigate this global sourcing risk by expediting the remaining six runner components at capable foundries to ensure quality, maintain schedule and to reduce material escalation costs.

DISCUSSION

The objective of the LPGP LEM Program is to replace and/or rehabilitate aging generation equipment, most of which dates to 1961. A secondary objective is to increase pump and turbine efficiency, increase pump flows, increase turbine output and increase the smooth operating range of the pump turbines. These improvements to the pump turbine design would allow for improved operating efficiency, increases in the amount of production re-timed to peak demand periods, and an increase in the peaking capacity of the overall Niagara Power Project. The modest increase in the plant’s pumping capacity as a result of the new pump turbines required the Authority to file an application with the Federal Energy Regulatory Commission (“FERC”) for a non-capacity license amendment which was granted in April 2012.

The current status of the work related to the LEM Program is as follows;

- Five new GSU’s, including one spare unit, associated high voltage terminations, and relay protection equipment have been installed.
- The first unit overhaul, Unit 11, was completed in September 2013. The unit vibration adjustments, rotor pole jumper replacement, shaft re-alignment and performance testing to be completed by August 9, 2014.
- The second unit overhaul, Unit 5, was completed in May 2014.
- The third unit overhaul, Unit 7, will commence in August 2014.
- The pump turbine runners and associated long-lead equipment for the next four units to be overhauled are in various stages of manufacturing.
- Units 3 through 12 will be completed in approximately seven to eight months each, with the last unit to be completed in the winter of 2020.

The total value of the contracts awarded, to date, amount to approximately \$300 million and the total amount released is approximately \$130 million. Costs associated with the LPGP LEM Program also include Engineering, Project Management, Plant support, site modifications,

performance testing and unit auxiliary equipment. Therefore, in order to allow for the orderly execution of the LEM Program as planned and to start the fabrication of the remaining six runners, it is necessary, at this time, to commit the additional requested funding to execute the activities through the 6th unit which is scheduled to be completed in February 2017. The remaining fund balance will be requested accordingly, in order to complete the LEM Program as currently scheduled.

Engineering, Procurement, Construction, Direct and Indirect Costs

The Trustees are also requested to approve expenditures for engineering, procurement, construction and Authority direct and indirect costs to continue the orderly planning, design and implementation of the work as follows:

	Current Total Estimate (\$000)	Current Request (\$000)	Balance to be Authorized (\$000)
Preliminary Engineering/Licensing	1,195	0	0
Engineering and Design	12,783	2,196	900
Procurement/Materials	153,813	23,210	47,960
Construction	253,799	18,586	101,527
Authority Direct/Indirect	38,410	3,464	9,613
	460,000	47,456	160,000

Future year funding will be included in the Capital Budget requests for those years.

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 Acting Vice President – Project Management, the Vice President – Engineering, the Acting Vice President – Procurement, the Project Manager and the Regional Manager of Western NY recommend that that the Trustees authorize additional capital expenditures in the amount of \$47.456 million and approve the release of the remaining six pump turbines to Mitsubishi-Hitachi Power Systems of America, Ltd. (“MHPSA”) for the Niagara Power Project’s Lewiston Pump Generating Plant (“LPGP”) Life Extension and Modernization Program (“LEM Program”).

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, capital expenditures in the amount of \$47.456 million and the release of the remaining six pump turbines to Mitsubishi-Hitachi Power Systems of America, Ltd. ("MHPSA") of Basking Ridge, NJ, are hereby approved for the Niagara Power Project's Lewiston Pump Generating Plant ("LPGP") Life Extension and Modernization Program ("LEM Program"), as recommended in the foregoing memorandum of the President and Chief Executive Officer;

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.