

## **Appendix E**

### **Proposed Work Plan to Assess Flow Required over North Bala Dam to Maintain Utilization of Existing Walleye Spawning Habitat Immediately Downstream of Dam**

## Appendix E

# Proposed Work Plan to Assess Flow Required over North Bala Dam to Maintain Utilization of Existing Walleye Spawning Habitat Immediately Downstream of Dam

As discussed in Section 6.2.5.2, the diversion of flow through the proposed generating station could potentially have an adverse effect on existing walleye spawning habitat downstream from the North Bala Dam due to reduced flow resulting from the diversion of up to 96 m<sup>3</sup>/s through the powerhouse. In order to determine the amount of flow required to provide adequate flow velocity in the area to facilitate walleye spawning, SREL is proposing to implement the following work plan.

The plan involves field verification of hydraulic variables (flow velocity, vector and water depth) under a range of flow conditions from the North Bala Dam. The field investigation will take place following the spring freshet, when outflow from Lake Muskoka can be put entirely through the South Bala Dam, allowing a range of flows to be assessed at North Bala Dam, without adversely affecting outflow from the lake.

The proposed steps in the work plan are as follows:

- MNR installs all stop logs in the North Bala Dam until the only flow through the dam is due to leakage (~ 1 m<sup>3</sup>/s)
- The field crew (consisting of a technician and biologist from Hatch Energy and possibly MNR and/or DFO staff) will assess hydraulic conditions in the existing spawning area. This will involve recording spot water depth and flow velocity measurements at several points throughout the spawning area by boat.
- MNR will then progressively open up the North Bala Dam to release additional flow in increments of 5 m<sup>3</sup>/s (or less, if feasible). Hydraulic measurements will be assessed at each flow rate.

Measurements will be made up to the maximum flow achievable without causing a drop in Lake Muskoka.

Following the field investigation, the hydraulic data will be reviewed to determine the lowest flow rate where suitable velocity was provided in the spawning area to facilitate walleye spawning. This velocity range will be determined in consultation with MNR and DFO. The first option for SREL will be to provide the required flows through the dam so as to facilitate continued utilization for spawning. However, it is recognized that spilling beyond a certain volume may potentially have a significant impact on the economics of the project.

SREL will then conduct an economic and operational feasibility assessment to determine if the required flow can be provided for the duration of the spawning period (which will be determined in consultation with MNR and DFO) without adversely affecting the economic viability of the proposed project, while ensuring that water management plan requirements are met and adequate flows are provided in the south channel at the same time to maintain existing walleye spawning habitats in that channel.

Provided it is determined to be feasible to provide the required flow over the North Dam, this will be written into the Dam Operating Plan and will become a legal requirement under the Muskoka River Water Management Plan. In this manner, no adverse effects on existing walleye spawning habitat downstream from the North Bala Dam would be anticipated to occur.

However, if it is determined that the required flow is not feasible (i.e., has an unacceptable adverse effect on project economics or cannot be provided without adversely affecting water management on Lake Muskoka or provision of suitable flows over the South Dam), SREL will enter into discussion with MNR and DFO to assess additional mitigation options. Mitigation will be required to the satisfaction of MNR and DFO. This mitigation would involve the development of a satisfactory compensation plan to offset any HADD determined. The provision of adequate flows over the dams during the walleye spawning season is the preferred option of SREL at this point and the secondary option of provision of compensation in the south channel is considered as a “last resort”.

No design modifications to the proposed facility would be required for either option. Only operational modifications related to controlling of flows would be required.



4342 Queen Street, Suite 500  
Niagara Falls, Ontario, Canada L2E 7J7  
Tel 905 374 5200 ♦ Fax 905 374 1157