

# LAKE OF THE WOODS CONTROL BOARD

## POLICIES

### 1. **Operation of Hydraulic Generating Stations on the English and Winnipeg Rivers**

#### *Introduction*

The Lake of the Woods Control Board has statutory jurisdiction to regulate and control the flow of the waters of the Winnipeg River between its junction with the English River and the Lake of the Woods, and also the flow of water in the English River between its junction with the Winnipeg River and Lac Seul.

In order to clarify responsibility for the operation of the generating stations on the English River and the Winnipeg River in recognition of these legislated responsibilities, the Lake of the Woods Control Board has established the following policies concerning such operation.

#### 1A. **Operation of Hydraulic Generating Stations at the Outlets of Lac Seul and Lake of the Woods**

This policy pertains to the control of flows which are authorized by the Board from Lac Seul and Lake of the Woods.

##### (a) *Policy Statement*

The Lake of the Woods Control Board authorizes discharges from Lac Seul and Lake of the Woods. Ontario Power Generation (hereinafter OPG), which operates a generating station and the control dam at Ear Falls, and ACH Limited Partnership / AbitibiBowater Inc. (hereinafter ACH), which operates the generating stations and control structures at Kenora, must operate at the flows authorized by the Board. However, the flows authorized may be subject to some flexibilities as outlined below in Section (e) of this Policy.

##### (b) *Information from Dam Operators*

It is the responsibility of OPG and ACH to keep the Secretariat advised at all times of any situation, current or planned, which may either restrict, or make it desirable (if possible) to restrict, the full range of outflow options available to the Board at the Ear Falls and Kenora outlet works. Normally this information will be provided by the OPG and ACH Specific Interest Group Representatives.

##### (c) *Information from Others*

Prior to the Board making a Regulation Decision, there will be an opportunity for all First Nation Advisors, Specific Interest Group Representatives and Resource Agency Advisors to provide the Board with any information and recommendations they feel are relevant to the current situation. At Regulation Meetings, Advisors and Representatives may present their position directly to the Board or, if unable to attend, may provide their information and recommendations in writing in advance to the Secretariat, to be conveyed on their behalf at the meeting. Prior to a Regulation Consultation leading to a Regulation

Decision, the Secretariat will solicit this input from each Advisor and Representative and will then convey the input obtained to the participants in the Regulation Consultation.

(d) ***Implementation of Authorized Flows***

Following a Regulation Decision at a Regulation Meeting or by Regulation Consultation, the Secretariat will inform the ACH and/or OPG Representatives of the Regulation Decision. The information conveyed will define both the authorized outflow and the effective date. When the Regulation Decision includes a regulation strategy under which the Secretariat engineers are authorized to direct other changes as appropriate, the Secretariat will notify the appropriate party of changes in authorized flow and effective date as required.

On the effective date of the change, OPG will make the necessary changes to discharge the authorized flow from Lac Seul through its Ear Falls generating station and/or the control dam. Similarly, ACH will adjust the flow released from Lake of the Woods through its generating stations and associated control dams at Kenora.

The OPG and/or ACH Representatives will immediately notify the Secretariat of any problems in implementing the decision as specified by the Board.

(e) ***Flexibilities Available in Discharging Authorized Flows***

In general, the Board intends that uniform discharges be released from the control dams and/or the generating stations at the outlets of the lakes. However, OPG and ACH may wish to smooth out their log operations and also may wish to exercise peaking and ponding operations for economic purposes. The Board also recognizes difficulties encountered in log operations during the winter time. The following guidelines are therefore established by the Board to provide some flexibility and are applicable to discharges from both Lac Seul and Lake of the Woods. In these guidelines, "authorized flow" shall mean average flow rate from the lakes.

- (i) At those times when the outflow from Lake of the Woods must be approved by the International Lake of the Woods Control Board, any of the flexibilities noted below must also be approved by the International Lake of the Woods Control Board.
- (ii) With approval in advance from the Board or the Secretariat engineers (on behalf of the Board), authorized flow may be achieved gradually from the effective date on. In no case should it take longer than three days (five days in the December through March period) to arrive at the authorized flow. This measure is intended to provide some flexibility in log operations at the control dams and in electricity generation at the generating stations. The granting of flexibility will depend on how rapidly outflow changes must be made and with consideration of the need to inform the public as to when to expect changes.
- (iii) To permit peaking and ponding operations at the generating stations, variations from the authorized flow on a day to day basis is permitted. The average daily flow shall not deviate from the authorized flow by more than  $30 \text{ m}^3/\text{s}$  for an authorized flow up to  $140 \text{ m}^3/\text{s}$ ,  $60 \text{ m}^3/\text{s}$  for an authorized flow above  $140 \text{ m}^3/\text{s}$  but

less than 280 m<sup>3</sup>/s and the lesser of 80 m<sup>3</sup>/s or 20 percent for an authorized flow above 280 m<sup>3</sup>/s.

- (iv) No restriction is imposed on hour-to-hour flow variations as long as the average daily flow limitation in paragraph (iii) is observed.
- (v) Except in emergency, deviation from the guidelines in paragraphs (iii) and (iv) is not permitted except with prior approval of the Executive Engineer.
- (vi) In emergency situations, such as during severe thunder storms when the energy supply situation in Northwestern Ontario may become critical, OPG is permitted to draw temporarily more from Lac Seul than those limits allowed in (iii) above, provided that the Executive Engineer is notified by OPG of its energy situation and of its action taken as soon as practicable, and that condition (vii), below, is met.
- (vii) OPG and ACH shall endeavour to control the flow deviations permitted herein so that the volume of water actually discharged in a period of one week (two weeks in the December through March period) from Lac Seul and Lake of the Woods, respectively, will be equal to the volume of water that would have been discharged had exactly the authorized flow been discharged for every day of the one week period (two weeks in the December through March period).
- (viii) The Board retains the right to set aside any of the flexibilities granted herein at any time, without formal amendment of these Policies.

#### **1B. Operation of Hydraulic Generating Stations Below the Outlets of Lac Seul and Lake of the Woods**

This policy pertains to the operation of Ontario Power Generation (OPG) generating stations on the English River and Winnipeg River below the outlets of the lakes.

##### **(a) *Policy Statement***

The Lake of the Woods Control Board has the responsibility for ensuring that the operation by OPG of the Manitou Falls Generating Station (GS), Caribou Falls GS and Whitedog Falls GS takes into consideration known factors relating to interests other than power. The Board must be satisfied that adequate procedures and communication channels exist between OPG and Manitoba Hydro to ensure that operating problems can be worked out between the power entities and, specifically, that Manitoba Hydro will receive advance warning of significant flow changes as a result of OPG operations of the Caribou Falls and Whitedog Falls generating stations.

##### **(b) *Information from Ontario Power Generation***

It is the responsibility of OPG to keep the Secretariat advised at all times of any situation, current or planned, which may either restrict, or make it desirable (if possible) to restrict, the range of operations at these plants, in that such restrictions may impact on other interests or on the releases to be made upstream at Ear Falls and/or Kenora. Normally this information will be provided by the OPG Representative to the Board.

(c) ***Operation and Implementation of Flow Changes***

OPG practises peaking operations at its generating stations on the English River and Winnipeg River as part of the economic operation of its electricity system.

Operation of Manitou Falls GS, Caribou Falls GS and Whitedog Falls GS in the "normal" flow range do not usually result in complaints from either upstream or downstream interests. However, at both high and low flows in the English River, tourist outfitter camps upstream and downstream of Manitou Falls GS can be negatively impacted by operations there. Specifically, high flows may result in flooding on Pakwash Lake due to the river constriction at Upper Manitou Falls, making it important to minimize backwater effects from the forebay. At low English River flows and/or high flows in the Chukuni River, navigation of Snake Falls (where the Chukuni River enters Pakwash Lake) may become dangerous, making it important to hold Pakwash Lake at its normal upper limit. Under these circumstances, OPG and the Board may coordinate operations with the Ontario Ministry of Natural Resources, which controls flows in the Chukuni River at the Snowshoe Dam above Pakwash Lake. At Whitedog Falls GS, upstream interests can be negatively impacted during periods of excessive flow. As well, severe flow fluctuations may be caused downstream along the Winnipeg River by the combined operation of the Caribou Falls and Whitedog Falls generating stations.

(d) ***Communication***

The Board requires OPG to advise the Executive Engineer of any unusual operation of Manitou Falls, Caribou Falls and Whitedog Falls generating stations.

An occasional oversight in effectively carrying out a standing instruction regarding communication between OPG and Manitoba Hydro would lead to Manitoba Hydro not being informed in advance of large flow changes. This warning is necessary to allow Manitoba Hydro to make appropriate plans for coping with the flow changes.

There are regular daily communications between the OPG Northwest Control Centre and the System Control Centre of Manitoba Hydro. Other than dealing with day to day or hour to hour energy transactions and information exchanges regarding the respective electricity systems, there are specific communications related to fluctuations of flow from Caribou Falls GS and Whitedog Falls GS. In addition, OPG and Manitoba Hydro maintain a forum where decisions and negotiations are conducted relative to matters of mutual concern.

## **2. Public Advisories**

### ***Introduction***

This policy pertains to changes in authorized discharges for Lac Seul and Lake of the Woods, including those times when the outflow of Lake of the Woods must be approved by the International Lake of the Woods Control Board.

(a) ***Policy Statement***

The Lake of the Woods Control Board regularly makes information on lake levels and outflows available to the public through its Recorded Message Service and its Internet

Web Site, both of which are maintained by the Secretariat. Whenever changes in authorized discharge from Lac Seul or Lake of the Woods are to be made, the Secretariat will arrange for the Recorded Message Service and the Notice Board on the Web Site to be promptly updated with the new information. Whenever lake levels are changing significantly, or are expected to change significantly, and/or whenever authorized changes in outflow from either lake could result in major changes in downstream levels or conditions, the Secretariat will issue a news release in addition to updating the above two services. In addition, the public and the media may contact the Secretariat at any time for further information.

(b) ***Recorded Message Service and Web Site Notice Board***

The recorded message and notice board normally provide the current level and trend, and the current outflow, for both lakes. When outflow changes are to be made, the recorded message and notice board will announce the changes and their effective date(s). When significant changes or impacts are occurring or expected, there may be an advisory and reference in a qualitative and/or quantitative sense to downstream level and flow conditions. The following examples of recorded messages or notice board entries illustrate the intention:

(i) *Wintertime flow increase - Lake of the Woods*

The outflow from Lake of the Woods will be increased in small steps over 3 days commencing January 15 from 400 m<sup>3</sup>/s to 550 m<sup>3</sup>/s. This will result in gradually increasing levels, and the possibility of weakened ice cover. Caution is advised.

(ii) *Summertime flow changes - Lake of the Woods and Lac Seul*

The outflow from Lake of the Woods was reduced on Friday, July 31st from 300 m<sup>3</sup>/s to 250 m<sup>3</sup>/s. Downstream levels will fall slightly. Effective the same date, the outflow from Lac Seul was increased from 100 m<sup>3</sup>/s to 150 m<sup>3</sup>/s.

(iii) *Springtime flow increases - Lake of the Woods*

The outflow will be increased from 1000 m<sup>3</sup>/s to 1200 m<sup>3</sup>/s today, June 10. As a result the level of the Winnipeg River will rise about 80 cm below the Norman Dam, about 50 cm at the Highway 17 Bypass, and about 35 cm at Minaki. Persons in the area are advised that flow conditions could be hazardous and that property should be moved a safe distance from the water's edge.

(iv) *Springtime flow decrease - Lac Seul*

The present discharge of 350 m<sup>3</sup>/s will be reduced to 200 m<sup>3</sup>/s by Wednesday, June 25, after which there will be no more spill though the log sluices. Downstream levels will stabilize at or near the normal summertime levels.

(c) ***Internet Web Site***

In addition to the relatively brief information about water level and flow changes carried in the Recorded Message and on the Web Site Notice Board, much more extensive level and flow data for the basin will be maintained on the Web Site. The Web Site will also

carry information and planning advisories for the public regarding shoreline hazard lands, intended for those planning to build docks, boathouses or other structures.

(d) ***News Releases***

A news release will be prepared whenever, in the judgement of the Secretariat engineers, one is required in accordance with the above policy. The news release will be issued to newspapers and radio stations located throughout the basin, and in Winnipeg and Thunder Bay, as appropriate and according to established procedure. The news release will normally also be posted on the web site notice board. The Secretariat engineers and/or Board Members will respond to media enquiries and participate in interviews when requested to do so.

Examples (i) and (iii), above, would qualify for a news release. Whenever possible, notice should be given in advance.

3. **Flow and Level Data Related to Water Control Facilities**

***Introduction***

To fulfil its regulatory mandate, the Board requires timely and accurate level and flow data for the waters under its control. This policy defines the data collection and computation duties that the Board may require of the owners and operators of water control facilities.

(a) ***Policy Statement***

At water control sites, it is necessary that discharge data be computed and provided to the Board. To compute the discharge, forebay and tailwater level data at one or more locations will typically be required, as well as data on control settings. The forebay and tailwater levels, and possibly additional water level data at other sites, will also be required to ensure that certain operational requirements are met.

The Board has the authority to determine what data is reasonably required. It also has the authority to require that this data be collected, recorded, computed and provided as necessary by the owners and operators of the facilities that physically control the waters under the Board's jurisdiction.

(b) ***Standards***

The owners and operators of each control facility will provide water level and flow data, and related information, as specified in each case by the Board. Requirements may vary from site to site and operator to operator, but will generally be in accordance with the following. The data will comply with the SI system.

(i) ***Water Level***

Levels will be measured to an accuracy of +/- 0.005 m, and reported to 0.001 m, referenced to a datum approved by the Board. At generating stations, forebay and tailwater levels will be collected at least hourly to produce the daily average, maximum and minimum levels. Where lake levels are required, the preferred sampling frequency will be hourly, at a number of sites to be approved by the

Board, but in any case the minimum requirement will be one (damped) spot reading per day.

(ii) *Water Flow*

Turbine flows will be computed by the facility operators using set procedures and unit discharge ratings that have been approved by the Board. Daily average discharge will be computed using hourly (or more frequent) data and, when peaking, daily maximum and minimum flows will also be computed.

Sluice flows will be computed by the facility operators using set procedures and sluice discharge ratings that have been approved by the Board. Daily average discharge will be computed using hourly (or more frequent) data and, when flow changes occur, daily maximum and minimum flows will also be computed.

Leakage of water through sluice stop-logs and through non-generating turbines is very difficult to assess but may lead to significant errors in flow records, which in turn may adversely affect Board operations and hydrologic studies of the basin. All dam owners and operators will attempt to minimize leakage by obtaining the best seal possible when placing stop-logs, and by closing head gates when turbines are not running. All flows reported will include an estimate of leakage, based on a procedure acceptable to the Board. When leakage appears to be excessive or the leakage estimates being used are in question, the Board reserves the right to require that actual leakage measurements be conducted by qualified personnel, at the dam owner's expense.

(iii) *Records*

Complete records will be kept, not only of levels and flows, but of all information required to determine levels and compute flows. For levels, this will include datum information and adjustments. For turbine flows, this will include energy, headgate settings and the like, on a per unit basis. For sluice flow, this will include stop log counts and sizes or gate settings and the like, on a per sluice basis. Records will preferably be kept in electronic form, with appropriate backup.

(c) ***Reporting***

Information will be provided to the Board on a daily basis Monday to Friday. As a minimum, this will consist of daily average, maximum and minimum levels, and daily average flows, with daily maximum and minimum flows when changes occur. Depending on circumstances (such as peaking), hourly data and other data related to the computation of levels and flows may also be required. Also depending on circumstances, data may be required several times during any given day. Data will be transmitted to the Board in machine-readable electronic form, but may be transmitted by fax or verbally for short durations when the standard electronic transmission is not possible.

(d) ***Maintenance***

All data collection and reporting systems must be regularly maintained to ensure the reliability and accuracy of data. Regular inspections must be made to confirm settings and status of equipment. Periodic surveying to confirm gauge datums, and periodic flow

meterings to confirm ratings, may be required. Any failures must be immediately reported to the Board, along with a plan of action to remedy the situation. In general, all repairs must be carried out in a timely fashion. While as much flexibility as possible will be granted by the Board to effect a repair, the degree of urgency and thus the nature of the response required by the owners and operators will depend on the site and on the hydrologic circumstances at the time.

(e) ***Audits***

To ensure that acceptably accurate data is being provided, the Board may at any time conduct a review of data collection, computation and record keeping procedures. As a result of such an audit, or for any other reason, the Board reserves the right to require changes to be made in an owner's or operator's procedures.

(f) ***Costs***

All costs associated with data collection programs, including those for setting up or changing procedures to Board specifications, and for conducting ratings, maintenance and repairs as required by the Board, shall be borne by the facility owners and operators.