



**INTERNATIONAL LAKE SUPERIOR
BOARD OF CONTROL**



Canada
Mr. Jean-François Cantin, Member
Mr. Rob Caldwell, Secretary

United States
BG Mark Toy, Member
Mr. Arun Heer, Secretary

16 October 2017

MEMORANDUM TO INTERNATIONAL JOINT COMMISSION

Enclosed are the approved minutes of the Board's 21 September 2017 meeting in Queenston, Ontario. We will post these to the Board Website as soon as possible.

Sincerely,

A handwritten signature in blue ink that reads "Rob Caldwell".

Enclosure

Rob Caldwell
Secretary, Canadian Section

DISTRIBUTION:

Mr. J-F. Cantin
Ms. S. Lobrichon
Ms. C. Mageau
Board Members
Mr. A. Heer
Regulation Representatives

INTERNATIONAL LAKE SUPERIOR BOARD OF CONTROL

Minutes of the 21 September 2017 meeting

The International Lake Superior Board of Control met on 21 September 2017 in the Beck 1 Boardroom at Ontario Power Generation's Beck Generating Station in Queenston, Ontario. Mr. Jean-François Cantin, Canadian Chair, chaired and convened the meeting at 8:35 a.m. . The attendees were:

<u>United States</u>		<u>Canada</u>
	Board Members	
Mr. S. Durrett (Alt.)		Mr. J-F. Cantin
	Secretaries	
Mr. A. Heer		Mr. R. Caldwell
	Regulation Representatives	
LTC D. Sugrue		Ms. J. Dickhout (Alt.)
Mr. J. Allis (Alt.)		
	Associates/IJC	
Ms. M. Kropfreiter		Mr. R. Stefano
Mr. B. Carmichael		Ms. W. Leger
Mr. D. Hermann		Mr. D. Fay
Mr. P. Schmitigal (by phone)		Ms. J. Frain
Mr. K. Mccune		Mr. G. Walker
Mr. C. Sidick (by phone)		

Item 1. Welcome and Introductions

Chair Cantin initiated a round of introductions.

Item 2. Approval of Agenda and Status of Prior Action Items

The agenda was approved as drafted. Mr. Caldwell noted that all prior action items were promptly completed.

Item 3. Update from Regulation Representatives

Hydrologic Conditions

The Board was provided with the following update on hydrologic conditions for lakes Superior, Michigan-Huron, and Erie. Ms. Dickhout presented slides showing recent net basin water supplies, levels and flows (observed and forecasted), precipitation, and climate outlooks. Highlights included:

- The upper Great Lakes remain well above average and above last year's levels.
- The past six months were wet overall on the upper Great Lakes.
- There was a maximum of about five gates equivalent open at the Compensating Works this summer.

Regulation and Deviation Strategy Update

Ms. Dickhout then provided an update on the Board's 2017 flow deviation strategy. Given significant hydropower maintenance and reduced side-channel capacity had been expected this past spring and summer, on 11 April, the Board requested to deviate from Plan 2012 from April to November and reduce the potential impact of large, fluctuating flows in the St. Marys Rapids. The objective was to spread the excess flow that would have been required each month in the St. Marys Rapids due to side-channel flow capacity limitations over these several months, rather than month-by-month. The Commission approved these deviations on 14 April.

Ms. Dickhout added that there was a modification to the deviation strategy from previous years, in that now consideration is given each month to the net accumulated deficit so that the overall effect of deviations on lake levels is minimized even further. Flows less than those prescribed by Plan 2012 were released in May and June, and these flow decreases were mostly offset by releasing flows higher than Plan 2012 in July and August. The highest gate setting equivalency used this reporting period was around five gates since 5 July, whereas strict adherence to Plan 2012 would have prescribed more variable gate setting and the highest gate setting of six gates

open in May. As a result, generally a more natural release pattern was followed this summer than the Plan would have called for in consideration of the hydropower plant maintenance that occurred.

Mr. Allis and Mr. Caldwell noted that numerous high water complaints are being received each month, with the majority coming from Lake Superior residents. Chair Cantin requested that the Board better communicate gate-setting equivalencies in the Board's public documents.

Item 4. Hydropower

Recent and Expected Maintenance and Other Outages

Brookfield

Mr. Stefano reported that planned unit outages totaled 1,386 hours (38 percent of the reporting period where at least one unit was shut down). Most of these outages were due to regular maintenance and stator core lamination issues (the steel laminations were vibrating and separating with time and resulting in potential ground faults of the units). Unplanned outages during the reporting period totaled 580 hours (16 percent of the reporting period) and were mostly due to a failed stator winding.

A planned outage on Unit G2 is under way since 15 September until later this week. Annual inspections will be undertaken on the other two units between April and June next year.

U.S. Government Hydropower Plant

LTC Sugrue reported 78 unit outages totalling 1,641 hours (45 percent of the reporting period). The significant increase was due to the Protective Relay Project. Minor outages are scheduled through spring for preventative maintenance, dive operations to clean the trash racks, and in support of the Compensating Works gate automation project. A large debris field was removed.

Cloverland Electric Co-op (CEC)

Mr. Schmitgal reported that canal restoration work, which began in the spring of 2015, continued this reporting period beginning on 17 April and lasted through June. Canal restoration work resumed in September through early November of this year. These repairs require flows to be reduced during working hours, resulting in total plant capacity being limited to about 700 m³/s during this period. The canal repairs will continue in 2018 on a similar schedule.

Item 5. Compensating Works

Inspections and Maintenance

Routine monthly maintenance inspections continued to be conducted on the Canadian portion by Brookfield. Monthly inspection observations included public safety features such as fencing and signs, the concrete and masonry structure, gates, and mechanisms, on-site safety equipment such as life jackets and air horns, as well as anything unusual. In addition to the monthly inspections, the annual dam safety inspection was completed by the Regional Dam Safety Engineer and an Independent Consulting Engineer on 10 August. The annual inspection was performed on the Compensating Works structure and the earth dam north of the structure. The inspections found the Compensating Works facilities to be in good condition. No major issues were noted.

Underwater inspection upstream and downstream of Gate #1 and upstream of Gate #2 is being planned for mid-to-late October and is expected to take less than a day. To facilitate the inspection, closure of Gates #1-3 will be required. Closure during this time will not interfere with the gate automation project planned by the Corps (now delayed until Spring 2018) and will take advantage of the high waters overtopping the "fish wall" to minimize impacts on aquatic life.

LTC Sugrue noted that monthly inspections and routine maintenance continued to be conducted on the U.S. portion by the U.S. Army Corps of Engineers (USACE) Soo Area Office. The monthly inspections found the Compensating Works facilities to be in good condition overall. Gate gears have been greased and the padlock access to the

structure has been lubed. Logs and other debris were cleared from both the upstream and downstream sides of the gates.

USACE also furthered progress on an initiative to automate the US gates at the Compensating Works. Construction is now delayed until Spring 2018. Gate settings during mobilization and construction were discussed and will be coordinated between the USACE project team and the Board. This gate-automation progress will offer much-improved flexibility in the amount of gates opened and the rate at which they are opened and closed to maximize benefits to the St. Marys Rapids. Gates #9-10 are already semi-automated and this project will result in the automation of Gates #11-14.

Item 6. GLAM Committee and Superior Board Task Update

Ms. Leger reported that the triennial report approved in March was now translated. The Committee is seeking Board endorsement of its semi-annual progress report, and is also seeking Board approval of its FY18 work plan via e-mail by 24 October.

IWI Gate Movement Study

Mr. Allis reported that the development of a two-dimensional hydrodynamic model that can be used to simulate hydraulic parameters in the St. Marys River, including the rapids area, under various scenarios, is nearing completion. A final report will be made available by the end of 2017.

Ecohydraulic Model Progress

Mr. Cantin asked whether this new model could be used to reassess the 10 cm per hour water level change in the Rapids gate movement limit for the Compensating Works. Ms. Leger noted that this model is in development by Dr. Jean Morin's group at Environment and Climate Change Canada's Quebec office and a report will soon be available. Further work will be necessary but will be undertaken without further IJC funds. A performance indicator will be developed to further assess the gate movement question.

Other Recent and Expected Tasks

Ms. Leger noted that Tier 1 (foundational analyses) is a big focus of the upcoming work plan. Annual reviews of the Superior regulation piece will be included, and, of course, the Lake Ontario regulation piece will be more extensive. A three-pronged approach will be employed, including hydrological conditions summaries, impact assessments (looking at six different interest groups), and preliminary plan simulations (focused primarily on Lake Ontario initially). A performance indicator for Whitefish Island flooding will be developed. 2017's hydrology will be characterized. Some Tier 2 (exploratory investigations) work will include hydroclimate projects, such as a Canadian Precipitation Analysis (CaPA)/multi-variate precipitation estimation (MPE) 30-year hindcast, as well as a water balance model for the Great Lakes. IERM improvements will be made for the St. Marys River. There will also be some St. Lawrence River ecosystem and socioeconomic projects. The plan review working group continues to update the Coordinated Great Lakes Routing and Regulation Model. The maximum side-channel and gate movement studies near completion.

Information management needs are important too and better collaboration and engagement with the Lake Champlain – Richelieu River team as well as the Great Lakes Water Quality Agreement groups is desired. The annual report will serve as a launch pad for the circles of influence initiative.

The full work plan and semi-annual reports will be made available to the Boards by 26 September. Responses are due by 6 October. Final draft reports are due to the IJC by 11 October. The work plan is to be approved via e-mail by 24 October.

Item 7. Communications

2016 Meeting with the Public

Mr. Caldwell reported that the Board hosted a public Webinar on 17 July at noon. A total of about 20 members of the public and media participated, including government officials, Board Members, staff and associates. This was a turnout a bit higher than in recent years. No concerns were received and only questions of a technical nature were asked by attendees.

The date of next year's Webinar will be established at the spring business meeting.

2017 Engineer's Day

Ms. Dickhout presented a few photos from the 30 June event, noting that hundreds of people spoke directly to Board representatives, and almost 9,000 people attended the event. A similar Board presence is planned at next year's event. Ms. Dickhout suggested the creation of some bookmarks to hand out to kids and share the date of the meeting with the public with visitors to further enhance the Board's display.

LTC Sugrue noted that USACE visitors' centers located in Duluth and Sault Ste. Marie each receive about 400,000 to 500,000 visitors annually. Static displays highlighting the Board will be developed for these sites.

Website/Facebook Updates

Ms. Dickhout noted that no major updates have been performed recently, but the sites continue to be maintained. Popularity of recent Facebook posts waned somewhat, but varied depending on the number of "Shares". Monthly updates of hydrological conditions will be provided graphically in the near future. Mr. Fay added that a contract to recreate IJC websites will be let later this year.

Public Feedback

Ms. Dickhout provided a summary of the public comments and feedback received to date. Most were either from anglers related to Rapids flows (i.e., either disruption to fishing or sensitivity to flow in relation to breeding) or riparians (i.e., high lake levels causing erosion concerns and loss of beaches). Several people have asked why deviations from Plan 2012 were undertaken in the past few years, and wanted to know if there'd be any impact on lake levels.

Item 8. Review Semi-Annual Progress Report

Mr. Caldwell requested timely receipt of any additional comments or changes to the draft Semi-Annual Progress Report. He will incorporate changes, update the available data, and distribute advance copies to the IJC prior to its October meeting. Mr. Fay indicated that the IJC would appreciate advance electronic copies of the report by 12 October or so.

Item 9. Other Business

No additional agenda items were added.

Item 10. Upcoming Meetings

IJC Appearances

Mr. Caldwell noted that the Appearances would be on 25 October starting at 8:30 am.

Communications Workshop

A video of a workshop series featured by Alan Alda's Center for Communicating Science was played. A workshop for Board members, staff and associates will be held in Ottawa on the afternoon of 25 October.

Spring Board Meetings

Mr. Caldwell noted that initial indications were that the spring Board meeting would be held on either the weeks of 12 or 19 March, in Buffalo at the federal government building. Board Secretaries will work together to determine a suitable time and date.

Item 11. Action Item Review

Mr. Caldwell noted several major actionable items during this meeting:

- The Secretaries and Regulation Representatives will better communicate gate-setting equivalencies now that partially open gates tend to be employed. Both the actual setting and the full-gate equivalencies will be included in all releases and reports.
- The Secretaries will amend the semi-annual report to include details about the percent of time hydropower outages impacted operations.

- The Secretaries will send an e-mail regarding the Board's approval of the GLAM work plan by 24 October.
- The Regulation Representatives will develop a bookmark for children to hand out at Soo Engineers Day. It will include the date of the next meeting with the public.
- The Corps will develop a static display featuring the Board to be located at its visitors' centers in Duluth and Sault Ste. Marie.
- Canadian Secretary to receive comments on the Semi-Annual Report by 6 October and provide a draft to the IJC by 12 October.
- Board Secretaries to settle on dates for spring Board meeting in Buffalo.

Item 12. Closing Remarks and Adjourn

Mr. Caldwell took the opportunity to thank Ms. Frain for hosting the Boards. Mr. Cantin noted that his first opportunity to chair a meeting was very interesting and he was impressed by the team's innovative approaches and openness in providing answers to perceived problems. IJC Canadian Co-Chair Walker warmly welcomed Mr. Cantin as Canadian Chair.

There being no other business, Mr. Cantin adjourned the meeting early at 11:41 a.m.

**INTERNATIONAL LAKE SUPERIOR BOARD OF CONTROL
Board Meeting, 21 September 2017, 8:30 am to 12:00 pm**

Ontario Power Generation, Beck Generating Station, 14,000 Niagara Parkway, Niagara-on-the-Lake, ON
Beck 1 Boardroom

(Webinar and teleconference info follows)

DRAFT AGENDA

1. Welcome and introductions [Cantin]
0830-0840
2. Approval of agenda and status of prior action items [Caldwell]
0840-0845
3. Update from Regulation Representatives [Dickhout]
0845-0900
 - a. Hydrologic conditions
 - b. Regulation and deviation strategy update
4. Hydropower [Stefano, Schmitigal, LTC Sugrue]
0900-0915
 - a. Recent and expected maintenance and other outages
5. Compensating Works
0915-1000
 - a. Inspections and maintenance [Stefano, LTC Sugrue]
 - b. Gate automation project [Sidick]

Break

6. GLAM Committee and Superior Board task update
1015-1045
 - a. FY2018 work plan [Leger/Heer]
 - b. IWI gate movement study [Allis/Sidick]
 - c. Ecohydraulic model progress [Dickhout/Sidick]
 - d. Other recent and expected tasks [Leger]
7. Communications
1045-1100
 - a. 2017 meeting with the public [Caldwell]
 - b. 2017 Engineer's day [Dickhout]
 - c. Website/Facebook updates [Dickhout]
 - d. Public feedback [Dickhout, Sidick]
8. Review semi-annual progress report [Caldwell]
1100-1115
9. Other business
1115-1130
10. Upcoming meetings [Caldwell]
1130-1140

- a. IJC Appearances - Wed, 25 Oct 1015-1045, GLAM 1045-1130, Ottawa, reception that evening
- b. Spring Board meetings - ?? Mar 2018 0830-1200?, US

11. Action item review [Caldwell]
1140-1155

12. Closing remarks and adjourn [Cantin]
1155-1200

Webex info:

<https://pwgsc-nh.webex.com/pwgsc-nh>

Meeting number: 558 113 705

Meeting password: supboard

Teleconference info:

Call-in toll-free number: 1-877-413-4790

Conference ID: 724 831 7#