



**INTERNATIONAL LAKE SUPERIOR
BOARD OF CONTROL**



Canada
Mr. Jaymie Gadal, Member
Mr. Rob Caldwell, Secretary

United States
BG Margaret Burcham, Member
Mr. John W. Kangas, Secretary

23 October 2013

MEMORANDUM TO INTERNATIONAL JOINT COMMISSION

Enclosed are the approved minutes of the Board's 19 September 2013 meeting in Burlington, Ontario. Please post to the Board's Website following receipt of the French translation.

Sincerely,

Enclosure

Rob Caldwell
Secretary, Canadian Section

DISTRIBUTION:

Mr. J. Gadal
Mr. B. Beckhoff
Ms. C. Mageau
Board Members
Mr. J. Kangas
Regulation Representatives

INTERNATIONAL LAKE SUPERIOR BOARD OF CONTROL

Minutes of the 19 September 2013 meeting

The International Lake Superior Board of Control met on 19 September 2013 in the Library Guest Lounge at the Canadian Centre for Inland Waters in Burlington, Ontario. Mr. Jaymie Gadal, Canadian Chair, chaired and convened the meeting at 1:00 p.m. The attendees were:

<u>United States</u>		<u>Canada</u>
	Board Members	
COL R. Peterson (Alt.)		Mr. J. Gadal
	Secretaries	
Mr. J. Kangas		Mr. R. Caldwell
	Regulation Representatives	
LTC. R. Ells		Mr. J. Bruxer
Mr. J. Allis (Alt.)		
	Associates	
Mr. K. Kompoltowicz		Mr. R. Stefano
Mr. E. Tauriainen		Mr. J. Deluzio
Mr. P. Schmitgal		Mr. D. Fay
Mr. J. Babb		Mr. G. Walker
Ms. D. Glance		Mr. Jean-Francois Cantin
Dr. M. Colosimo		

Item 1. Approval of Agenda

The agenda was approved.

Item 2. Hydrologic Conditions and Regulation Update

The Board was provided with the following update on hydrologic conditions for lakes Superior, Michigan-Huron, and Erie. Mr. Bruxer presented slides showing recent net basin water supplies, levels and flows (observed and forecasted), precipitation, a drought overview, climate outlooks, and Lakes Superior/Michigan-Huron water balance parameters.

- Water supplies to the Lake Superior basin for the past six months were well above average while supplies to the Lakes Michigan-Huron basin were also above average.
- Lakes Superior and Michigan-Huron levels remain below average, and below levels of last year. Lake Superior has risen significantly and is approaching long-term average. Levels were 9 to 34 cm (4 to 13 in.) below average during the past six months. Lakes Michigan-Huron were 47 to 67 cm (19 to 26 in.) below average. Levels of Lake Superior have been consistently below average since May 2005, while levels of Michigan-Huron have been consistently below average since January 1999.
- Lake Superior outflows were 91% of average over the past six months. Outflows were as specified by Regulation Plan 1977-A, except in August following an unexpected unit outage at Brookfield Renewable Energy Group's plant. The gate setting at the Compensating Works remained at the equivalent of ½ gate open until August (when a 6-gate open setting was prescribed, followed by a 4-gate open setting in September).
- With average supplies, lakes Superior and Michigan-Huron are expected to remain below average through winter. Lake Superior is expected to remain above chart datum while Lakes Michigan-Huron are expected to fall below chart datum this fall.
- The 1900-1986 "standardized departure" data as used in Plan 1977-A show that Lake Superior's level was higher relative to Lakes Michigan-Huron at the beginning of September. Lake Superior was about 0.3 standard deviations below its mean level, while Lakes Michigan-Huron were about 1.5 standard deviations below their mean level.
- Since last year, Lake Superior has received about 10 mm (0.4") more total precipitation than normal.
- According to the NOAA drought monitor, abnormally dry conditions are now absent from most of the Great Lakes basin.

- The NOAA and Environment Canada climatological outlooks for September-November are generally consistent (warmer than normal) for temperature, and precipitation (equal chances of above, below, or normal precipitation)

Mr. Bruxer presented a summary of the expected impacts of the unforeseen BREG unit outage from 6 August to 9 September that resulted in a -200 m³/s deviation from Plan flow in August, which was approved by the IJC as per the Board's recommendation. The impact of this unintentional deviation on water levels of both lakes Superior and Michigan-Huron was no more than 0.6 cm. Furthermore, a sensitivity analysis using the Board's 6-month forecast indicated that the balancing principle within Plan 1977-A will adjust for any differences in water levels resulting from the deviation, such that the effects on water levels can be expected to be negligible within four months. Consequently, it was agreed that the Board will not seek approval from the IJC for an equivalent offsetting deviation, but rather will let the Plan adjust for any impacts over the coming months on its own. A summary slide will be prepared for the IJC Appearance.

Item 3. Flow Verification Measurements

LTC Ells noted that the report for the August 2012 hydropower flow verification measurements at the Compensating Works is still being written. A broader analysis is being prepared that will compare the August 2012 measurements with historic measurements.

Flow measurements were made on model sections in the lower St. Marys River during the reporting period. These measurements are for use in the calibration of hydraulic models and are not related to the power plant or compensating works flow verification programs. The power plant measurement program will continue on a five-year cycle and will next be undertaken in 2015.

Item 4. Hydropower Plant Maintenance & Other Outages

U.S. Government Hydropower Plant

LTC Ells reported that several significant outages have occurred since March, totalling 1144 hours. The main reasons were two ice boom failures and melted slip ring brushes on Unit #1. No major maintenance is scheduled in the next six months.

Brookfield Renewable Energy Group (BREG)

Mr. Stefano reported that a major failure of the brush assembly on Unit G1 resulted in the 6 August to 9 September outage of that unit. He reported that the other two units were inspected, and no issues were found. Some scheduled maintenance outages were noted. Two 10-hour Unit G2 outages are scheduled for 1 and 2 October to facilitate boom and signage work and two 4-week annual inspection outages on Units G1 and G2 will be staggered next spring.

Cloverland Electric Co-op

Mr. Schmitigal reported that several scheduled and unscheduled outages have occurred since March. No major maintenance is scheduled for the next six months. Some further canal work (at the water line) is scheduled for the next three summers.

Hydropower allocations were passed each month, with the exception of BREG's during August. The IJC approved an under-discharge deviation for this unexpected unit outage. BREG's expected to pass its September allocation.

Item 5. Compensating Works

Item 5a. Inspections

Ongoing, routine, monthly inspections of the Compensating Works occurred in the past six months.

Mr. Stefano noted that the 3 September inspection conducted on the Canadian portion by BREG found the Compensating Works facilities to be in good condition.

LTC Ells reported that the 3 September inspection conducted on the U.S. portion jointly by the U.S. Army Corps of Engineers (USACE) Soo Area Office and Cloverland Electric Co-op found the Compensating Works facilities to be in good condition. Mr. Kompoltowicz added that the entities are now using standard inspection/gate movement forms, which are submitted to the Regulation Representatives following every gate movement.

Item 5b. Maintenance: Recent & Planned

Ongoing routine maintenance continued.

It was reported that no obvious damage was indicated on Whitefish Island or elsewhere from the six-gate opening during August, apart from nuisance flooding of some of the recreational trails and observation structures. Though Batchewana First Nation had noted its displeasure at not being notified prior to the gate movements, the Commission stressed that the band should not have constructed recreational trails and observation decks in the floodplain (without at least notifying the IJC) and that the current chief had been reminded of the land-transfer agreement and flood demarcation mapping prepared during the 1990s. The Board has ensured that band staff were added to the flow change notice distribution list, and hope to arrange a tour of the island with band officials in 2014.

Item 6. Peaking and Ponding Update

Mr. Bruxer reported that, due to low levels and outflows in the lower St Marys River early this reporting period, the Board needed to restrict ponding through May, but has not needed to since. No shipping delays due to ponding operations have been reported. The Board continues to include a semi-annual update on peaking and ponding in each progress report to the Commission.

Item 7. Communications

Item 7a. 2013 Meeting with the public – summary

Mr. Caldwell reported that the Board hosted a public teleconference/Webinar on the afternoon of 21 August, making use of a new online format. About 77 people participated, including members of the public, media, government officials, Commissioner Glance, Board Members, staff, and associates. This was a large turnout compared to recent years.

U.S. Alternate Member, COL Bob Peterson, presented information describing the IJC, the Board, the control structures, the regulation plan, and the current and expected water levels. Commissioner Glance provided a summary on the approval and implementation of Plan 2012. The meeting was then opened for public comment, questions, and concerns. The slide presentation given was made available online to callers beforehand, and callers were able to interact with the chairman and other participants.

Stakeholders on lakes Superior and Michigan-Huron both voiced concerns about how the current regulation plan balances the levels of their respective lake, with citizens on Lake Superior concerned over recent gate openings and citizens on Lake Michigan-Huron concerned over the generally-consistent below-average releases over the past decade. Some participants remain concerned about potential impacts due to climate change and variability. There remains significant trepidation surrounding the expected performance of Regulation Plan 2012. Several people continued to express disappointment regarding an IUGLS recommendation that no structures be constructed in the St. Clair River (to restore upstream water levels).

The date of its next meeting with the public will be set by the Board at its spring business meeting. An open-house style meeting tied with the Soo Locks Engineer's Day in June was discussed. The Board may also hold a similar Webinar/teleconference again later in 2014 as well.

The Board continues to issue, at the beginning of each month, news releases informing the public about Lake Superior regulation and water level conditions. The Board provides monthly media releases and hydrologic update information to the Commission to maintain a Board Website. A new site format was launched during Summer 2013, and is available at: <http://ijc.org/en/ilsbc>. Content includes information on Board members and responsibilities as well as news releases, semi-annual reports, meeting minutes, Plan comparisons, regulation updates, and hydrologic data summaries.

Item 7b. Facebook – yes or no?

The Board decided to launch a Facebook page soon. The IJC asked for the Corps to share its social media policy document, and would like more photos from the Board for its own Facebook site and Website.

Item 8. Other Business

Item 8a. Maximum Side-Channel Capacity

Mr. Stefano assured the Board that there have been no physical changes to the plant that would impact their maximum capacity. Mr. Allis added that the recent minor over-discharges from the U.S. hydropower plants were due to the Board's assumption that the U.S. Government Plant's allocation ought to be 405 m³/s when, in fact, they can pass somewhat more than that normally. Therefore, a maximum side-channel capacity of 2320 m³/s will continue to be used by the Board, and the USGP allocation will be established more precisely each month.

Item 8b. Sea Lamprey Control

Mr. Kompoltowicz reported that Ms. Jessica Barber, U.S. Fish and Wildlife Service, again had asked the Corps to shift the customary ½ gate equivalent setting by closing Gates 9 and 10 and opening Gates 15 and 16, in order to attract more lamprey to their traps in the Rapids. She provided a summary of the 2013 trapping campaign. A total of 6200 were caught in traps (including 193 near the Compensating Works), and an estimated 11700 lamprey were in this year's run. 193 individuals were trapped in the Rapids. The Board will work with fishery experts in determining whether it would be appropriate to simply shift the gate settings every May through July to facilitate trapping efforts.

Item 8c. Inventory and Verification of Diversion Intakes/Outfalls

Mr. Caldwell reported that, following audits of the water usage and measurement techniques at the various Canadian facilities and installations on the St. Marys River in Summer 2012, the Board had proposed similar audits of the U.S. side to take place in Summer 2013, but had to postpone these due to availability of staff. The Board now expects to complete the U.S. audits in Summer 2014.

As a result of the Canadian audit, Board staff requested and received revised Essar Algoma Steel usage data extending back to 1980. The Board has also requested revised data for the Canadian Lock, but has yet to receive it. The delay is understood to be the result of resource issues at Parks Canada. The net effect of the Canadian revisions is expected to be less than 10 m³/s (350 cfs), and the Board expects to revise Lake Superior outflow records when all revised data is received and once the U.S. audits are completed. The Canadian Section may work with Parks Canada to seek IJC International Watershed Initiative funding to hire a student to help correct the historical water usage reports for the Canadian Lock facility.

Item 8d. Plan 2012 Implementation

Mr. Caldwell reported that Board staff has been in contact with the IJC's Engineering Advisers regarding Lake Superior Regulation Plan 2012, approved by the IJC as a replacement for Plan 1977-A. The Regulation Representatives and their staff continued to coordinate efforts to make the Study Board's computer code for Plan 2012 operational, and Mr. Bruxer added that the Board is now ready to implement the new plan. The Board sent the IJC a letter on 3 December 2012 to provide comments on the IUGLS report, as per their request dated 30 August 2012. The Board followed this up with a 3 July 2013 letter to seek clarification on a few outstanding technical issues. One issue is the Compensating Works gate opening rate. A recently-approved USACE study to be completed in October (partially funded under the IJC's International Watersheds Initiative (IWI)) may shed more light on appropriate gate opening ramping rates by testing the impacts on fish species in the Rapids of water level changes following gate movements. The Commission responded by letter on 11 September, and provided a draft of the operating conditions for the new Orders. The IJC seeks both Board and power entity comments on the draft operating conditions by 30 September. The Board requested a deviation from Plan-prescribed outflows during October to facilitate the gate opening ramping tests in a letter to the IJC dated 7 August. The IJC approved a deviation on 19 September, though it was stressed by the Board that one may not be necessary.

Side-by-side comparisons of monthly regulation computations have also been initiated and coordinated (commencing July 2013) to prepare a simulation of Plan 2012 releases relative to the actual ones. This comparison will

soon be made available on the Board's Website.

When Plan 2012 is implemented, the Regulation Representatives will adopt an ensemble technique using 100+ years of water supply scenarios to replace the standard technique for water level and outflow forecasting that has been in place for decades. The ensemble forecast has been demonstrated to be more accurate than the old methodology, in that it more closely simulates the true variability in water levels and outflows.

Mr. Fay added that the Regulation Representatives and IJC Engineering Advisers are working on draft directives on peaking and ponding and minor deviation authority to accompany the new Orders. The Board was asked to consider whether deviations should be restored in a manner similar to that of the International St. Lawrence Board of Control, or rather, that Plan 2012 be permitted to adjust for them automatically. The Commission will ask that the Board demonstrate coordination and communication of all proposed deviations with stakeholder groups prior to invoking any deviations, but will leave it up to the Board's discretion to decide when to elevate concerns to the IJC.

Item 8e. Board Role in Adaptive Management

Mr. Allis noted that, in the 3 December 2012 letter to the Commission, further discussion was suggested at a point between submittal of the Task Team report and implementation of the new plan, which is now. Dr. Colosimo responded that the draft Orders end by noting that, "No later than fifteen years after the effective date of this Order or as determined by the Commission, the Commission will conduct a review of the results of regulation under this Supplementary Order." Ms. Glance added that the Commission hopes to have a dialogue with the Boards regarding AM during the October 23 IWI workshop. Mr. Fay noted that the IJC Engineering Advisers were taking recommendations of the report to decide how to create a committee and develop a work plan. It is expected that AM focus may shift in phases due to changing conditions, events, and resources. Board staff will provide a slide on AM for the presentation to the Commission in October.

Item 8f. Publication of Preproject Equation Report

Discussion was held on whether Environment Canada's Mr. Chuck Southam's April 2013 revision of his December 1998 report titled "Notes on the Development of the Lake Superior 1887 Equation" would better be published as a Board report or as a report of the Coordinating Committee of Great Lakes Basic Hydraulic and Hydrologic Data (CCGLBHHD). Since this document is used by people other than the Board, it was suggested that it be published as a CCGLBHHD report. Mr. Tauriainen will raise this suggestion at the CCGLBHHD's Hydraulics Subcommittee meeting in the first week of October.

Item 8g. Compensating Works Gate Ramping Rate Study

Mr. Kompoltowicz reported that IWI funding will assist the Corps in a study on how variations in gate settings might change water levels in the Rapids and impact the potential for stranding of certain fish species and other organisms. This work will be undertaken during the week of the IJC Appearances (21 to 25 October). The IJC approved a deviation to facilitate this work, but it should be possible to undertake this testing without a deviation. It was stressed that proper communication (especially the "why and when") is key.

Item 9. 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 has requested Board reports by 7 October in electronic format.

Item 10. Next Meeting and IJC Appearance

The IJC Great Lakes Boards of Control Appearances have been scheduled for 8:30 to 10:15 a.m. on 24 October (a Thursday in lieu of the typical Wednesday, and the Superior Board is to be the last of the Great Lakes Boards to present). The IJC seeks issue-oriented discussions. An IWI workshop is being held from 2:30 to 4:30 pm on 23 October, where the IJC is seeking strategic initiatives input as per their 25 June letter. The reception is scheduled for 6:30 p.m. that evening. The Spring meeting and 2014 public meeting(s) will be determined at later dates via e-mail. The Spring IJC Appearances in Washington, DC, are scheduled for the week of 28 April 2014.

There being no other business, the meeting adjourned at 4:15 p.m.

INTERNATIONAL LAKE SUPERIOR BOARD OF CONTROL

BOARD MEETING

**19 September 2013
1300-1600 hours**

**Canada Centre for Inland Waters
Room L231
867 Lakeshore Road
Burlington ON L7R 4A6**

Agenda

1. Approval of agenda
2. Hydrologic conditions and regulation update
4. Flow verification measurements
5. Hydropower plant maintenance and other outages
6. Compensating works
 - a. Inspections
 - b. Maintenance: recent and planned
7. Peaking and ponding update
8. Communications
 - a. 2013 Meeting with the public – summary
 - b. Facebook – yes or no?
9. Other business:
 - a. Maximum side-channel capacity
 - b. Sea lamprey control
 - c. Inventory and verification of diversion intakes/outfalls
 - d. Plan 2012 Implementation
 - e. Board role in Adaptive Management
 - f. Publication of preproject equation report
 - g. Compensating Works gate ramping rate study
10. Review semi-annual progress report
11. Next meeting and IJC appearance