

INTERNATIONAL NIAGARA BOARD OF CONTROL

Minutes of the September 20, 2012 Meeting
Lansdowne (Gananoque), ON

Mr. Thompson called the meeting to order at 8:00 in a conference room at the Glen House Resort in Lansdowne (Gananoque), ON. Those in attendance were:

<u>CANADA</u>	<u>UNITED STATES</u>
<u>BOARD MEMBERS</u>	
Mr. A. Thompson, Chair Ms. J. Keyes	COL R. Peterson, Alt. Chair Mr. W. Allerton
<u>SECRETARIES</u>	
Mr. C. Southam	Mr. J. Kangas
<u>WORKING COMMITTEE AND ASSOCIATES</u>	
Mr. J. Bruxer Ms. J. Frain Ms. J. Fooks Dr. F. Seglenieks Mr. D. Fay, IJC	LTC O. Beaudoin Mr. P. Yu Ms. L. Gale Mr. J. Allis LTC R. Ells Ms. C. Fisher Mr. K. Kompoltowicz Dr. M. Colosimo, IJC Ms. D. Glance, IJC

Item 1. Approval of Agenda

The Board approved the agenda after adding two items under Other Business (Encl 1).

Item 2. Update on Lake Erie/Niagara River conditions

Mr. Southam provided the Board with an update on Lake Erie water levels, precipitation and net basin supplies, and Niagara River flows. The combination of an unusually warm winter and below-average water supplies during the reporting period had a dramatic effect on the water level of Lake Erie. Instead of experiencing its annual seasonal cycle, which typically sees water levels of Lake Erie rise during the spring, peak for the year in late June or early July, and then start its annual seasonal decline in late summer/early fall, during 2012 the level of the lake declined throughout the spring and summer. Precipitation was approximately 25% below average for the period March through August 2012. Consistent with the lake's above-average water level conditions

during March and April, the Niagara River flow was above average during these two months. Furthermore, the lack of the usual ice retardation of the flow during March and April, due to warmer than normal temperatures, also contributed to the higher-than-average outflows from Lake Erie. This combination of lower than average water supplies and above average outflows in early spring resulted in lower than average water levels at the beginning of May. The lake's below-average water level conditions from May through August 2012 resulted in below-average Niagara River flows during those months. The level of Lakes Michigan-Huron continued to be well below the long-term average during the reporting period. As a result, inflows to Lake Erie via the Detroit River were about 6% below the long-term average for the six-month period March through August 2012. Currently, the lake is about 21 cm (8 in) below average. The six-month water level forecast prepared at the beginning of September by the U.S. Army Corps of Engineers and Environment Canada indicates that the levels on each of the Great Lakes are likely to remain below average into 2013. New record lows are possible on Lakes Michigan-Huron.

Item 3. Status of the 2011-12 Lake Erie-Niagara River Ice Boom Report

Mr. Southam reported that the latest version of the ice boom report was sent out one day prior to the meeting. Comments received on the draft distributed on 31 August have been incorporated; however, around 10 minor errors had been found in the updated version, which are marked with electronic flags. Mr. Southam asked that any further comments on the report be sent to him by 27 September so that the report can be finalized before the International Joint Commission (IJC) Appearance. Mr. Southam noted that although the Ice Boom report is a Working Committee report, the Board has traditionally asked the IJC Commissioners for their permission to release it to the public. Ms. Keyes asked if an Executive Summary could be added to the report. Mr. Southam noted that the report has a Highlights section at the beginning, which could be expanded. He showed slides related to the 2011-12 ice season. The first slide showed the limited ice cover on the lake during the 2011-12 ice season compared to the significant ice cover during 2010-11. The second slide showed the lack of snow cover on the Lake Erie basin on 6 February 2012. The third slide showed the daily Lake Erie water temperature as recorded at the Buffalo water intake. This slide indicated that the February 2012 monthly average was the 2nd warmest February on record and March, April and May 2012 were the warmest for these three months.

Item 4. Chippawa-Grass Island Pool Operations

Ms. Frain and Mr. Southam summarized the operation and maintenance of the Chippawa-Grass Island Pool (CGIP) Control Structure during the reporting period.

Tolerances for regulation of the CGIP level were suspended on April 24, 2012 for police diving operations. Tolerances were also suspended on July 8 and 9, 2012 due to actions taken to assist the Niagara Falls, ON, Fire Department marine unit in a successful rescue operation.

The project to replace the hydraulic lines on Gates 1-13, which began in 2010, will be completed this year. The hydraulic lines on Gates 14-18 do not need replacing. Several short-term water level gauge outages were reported. OPG is investigating ways to minimize future outages.

Ms. Frain reported that Ontario Power Generation (OPG) has removed the recreational boating warning sign from the Welland River gate. She indicated that OPG has sufficient signage of its own in the area. Mr. Thompson noted that he had received a call about the sign from Transport Canada just prior to the meeting. He will follow-up with Transport Canada.

Ms. Frain reported that OPG has installed a temporary water level gauge on the Maid of the Mist Steamboat Company's dock. OPG has made contact with the new operators of the Maid of the Mist (M-O-M) Pool tour ship and will follow up regarding a partnership to operate a gauge at the test site.

The discussions about the removal of the warning sign and the installation of a temporary water level gauges resulted in questions being raised about the Board's roles and responsibilities with respect to these types of items. It was recommended that an overview on the Board's roles and responsibilities be provided to new members. It was suggested that an electronic information package should be prepared.

Mr. Southam reported that during the evening of June 15, 2012, Mr. Nik Wallenda, a high wire artist, successfully walked across a wire suspended above the Horseshoe Falls section of Niagara Falls. Mr. Wallenda traversed from Terrapin Point on the U.S. side to Table Rock in Canada, beginning at 10:16 p.m. and finishing at 10:41 p.m. Under normal operations, the operators of the INCW would begin to reduce the flow over Niagara Falls from the tourist season day time flow to the night time values during this period. However, the Power Entities collectively elected to maintain the flow over Niagara Falls at a level equal to the normal tourist season day time flow during the entire period of Mr. Wallenda's walk. This was undertaken to mitigate any additional hazards that might be introduced as a result of significantly changing flow conditions in the immediate vicinity of the walk. Transition to tourist season night time flow was initiated immediately following the completion of Mr. Wallenda's walk. Therefore, the Falls flow minimum specified in the 1950 Niagara Treaty was met or exceeded throughout the event. The Board's representatives were advised of the Power Entities' planned action in advance.

Mr. Allerton asked if the Power Entities have a database of rescue operations at Niagara. Ms. Frain indicated that she believes that OPG does maintain a public safety database, and that she would confirm if these events are included.

Item 5. Review discharge measurement programs

a. Welland Canal. Ms. Fooks reported on the Welland Canal measurements taken on May 3, 2012. Measurements were taken for a wide range of flows, and the analysis of the data indicates that the measurements fit the current rating.

b. American Falls. Ms. Fooks reported that measurements were taken in the American Falls channel on May 8 and 9, 2012. The measurements were made using a remote control boat that was tethered to ensure it wasn't lost over the Falls in the event of a failure. Preliminary results indicate that the 2012 measurements fit the current rating.

c. Niagara River. Ms. Fooks reported that flow measurements were taken at the International Railway Bridge section on May 1, 2012. In the past, the US boat had generally reported higher flows than the Canadian boat. This year, the US and Canadian values were approximately the same, with the differences between them being more random. The May measurements fit the proposed updated Buffalo rating equation a bit better than the current rating. The updated rating suggests that flows are 3 or 4% higher than indicated by the current rating. Ms. Fooks isn't sure if there has been a change in the river's cross-sectional area at the measurement section. She is confident that the new method is more accurate and noted that an undetermined moving bed condition could have biased the earlier ADCP measurements. Mr. Kangas asked Ms. Fooks if they take flow measurements only during ice- and weed-free conditions. Ms. Fooks noted that WSC is taking continuous measurements of water levels at the new international water level gauge located near the International Bridge section. She indicated that they will take flow measurements during summer to observe the shift in the flows due to weed growth. They also hope to do flow measurements during ice conditions. Ms. Fooks finished by suggesting that the upper Niagara River may be a good candidate for horizontal ADCP/Index velocity flow measurement technology.

d. New York State Barge Canal. Mr. Allis noted that measurements had also been taken in the New York State Barge Canal as part of the effort to get a better understanding about flows in the system. They found that in May, 2012 the majority of the water that is flowing toward Pendleton Gates (Section "Erie Canal Bridge" – 17 m³/s) is coming from Tonawanda Creek (Section "East Canal Road" - 18 m³/s). The measured flows this spring were compared to similarly measured flows in 2004. They will be going out again in October to complete another set of flow measurements. The general assumption has been that the NYSBC flow is 31 m³/s. Updating the flow value for computational purposes will be discussed further by the INC following additional flow measurements. At this time, measurements are only being taken and reviewed by the USACE.

e. Cableway Section. Mr. Southam noted that the next set of measurements at the Cableway section will take place from October 29 to November 1, 2013. As requested by the Power Entities, the Secretaries will send them a letter providing one-year's advance notice of the measurement schedule.

f. Buffalo Rating Equation Revision Update. Mr. Allis reported that Ms. Nanette Noorbakhsh from the US Army Corps of Engineers - Detroit District is addressing the comments she received on her draft report on the review of the Buffalo rating equation.

Item 6. OPG tunnel status and plant upgrades

Ms. Frain reported on the tunnel status. Work on the invert concrete has been completed. As of September 17, profile restoration has been completed for 10.1 km (6.3 miles). Placement of concrete in the arch portion of the tunnel is completed for 8.9 km (5.5 miles). Contact grouting and the pre-stress grouting have been completed for 8.0 km (5 miles) and for 6.3 km (3.9 miles), respectively. The tunnel is currently expected to be ready for use in December 2013; however, they may be able to advance its in-service date.

Ms. Frain reported that OPG's work to replace the G3 runner and for a generator re-wind that started in April 2012 is expected to be complete by March 2013. The work to remove the Johnson Valves located at the bottom of the penstocks of G7 and G9, replace their functionality with headgates at the top of the penstock, and then install sleeves where the Johnson Valves were removed to improve flow is complete. However, the Index Test for G7 scheduled for May 2012 to compare the unit's performance with that of G9 was postponed because of vibration problems with the unit. OPG is working to resolve the issues with G7, which is currently only being operated on a must-run condition. The report on the full Gibson Test performed on G9 has been forwarded to the New York Power Authority (NYPA) for review and comments. Ms. Frain also reported that OPG has established a new stage-storage rating table for its Pump Generating Station (PGS) reservoir.

Ms. Keyes commented on the need to get the word out about the impact of OPG's new tunnel on levels and flows. COL Peterson agreed and suggested that information on the tunnel project should be added to the Board's website. He noted the need to pro-actively provide information given the potential for negative public reaction if the tunnel is opened under the low water level conditions. Mr. Southam noted that OPG had added information on the tunnel as it relates to the operation of the CGIP to its website at the request of the Board. COL Peterson indicated that he did not feel that simply having a link to the OPG website on the Board's webpage was good enough. Mr. Bruxer asked if the IJC communications people could help. Ms. Glance indicated that she could not commit their time. The Board agreed to raise the issue at the IJC Appearance. COL Peterson closed discussion by indicating that he felt this was an important topic.

Item 7 Falls Recession

Dr. Seglenieks presented a number of slides summarizing two recent rock fall events affecting the crestline of the Horseshoe Falls at Niagara. As part of its activities, the Board monitors the Horseshoe Falls for changes in its crestline that might affect its scenic beauty. Mr. Southam pointed to wording from the IJC's 1953 report to Governments on the Preservation and Enhancement of Niagara Falls that requires enough flow over the Horseshoe Falls to provide an unbroken crestline. A review of satellite images of the Horseshoe Falls for July 2009 and March 2010 available on Google Earth indicated that a portion of the crestline located to the west of the central part or "apex zone" of the Falls had receded. Further investigation using oblique

photographs indicated that the rockfall resulting in the change occurred sometime on August 20 or 21, 2009. While the first rockfall was being investigated, staff of the Maid of the Mist Steamboat Company reported that they suspected that a rockfall had occurred during the evening of July 18, 2012. A review of oblique photographs taken by members of the public and posted to the Internet confirmed that a rockfall had occurred, resulting in a change in the crestline immediately to the west of the area affected by the August 2009 rockfall. Dr. Seglenieks estimated that surface areas of the two rockfalls were 350 m² and 450 m², representing about 30,000 tons of rock. The changes in the crestline are not visible from ground level. There was open discussion questioning the Board's responsibility regarding the recession of the Falls and whether an unbroken crestline must be maintained. It was agreed that the Board's Working Committee should continue to monitor the Falls for changes on an on-going basis, the Board Secretaries should research possible obligations, and that the Board should raise the issue at the IJC Appearance and seek clarification from the IJC.

Item 8. 2012 Meeting with the Public

Mr. Thompson reported that 13 members of the public attended the Board's 2012 annual meeting with the public held during the evening of September 12, 2012 at the Earl W. Brydges Public Library in Niagara Falls, NY. He felt that the venue was good and that the Board's presentation had been well received. There were good questions asked and one gentleman talked in depth about the 1985 ice jam that resulted in flooding in the Lewiston Channel upstream of the NYPA intakes. He believes that ice operations at that time led to the flooding and he asked if he could obtain a copy of NYPA's ice management manual. COL Peterson asked about the availability of the ice manual. Ms. Frain noted that none of their standard operation procedures are available for release, but offered to raise the issue at an up-coming OPG/NYPA meeting. It was suggested that the gentleman should put his request for information in writing. COL Peterson suggested that the Board consider adding FAQ's related to a number of issues such as this and OPG's new tunnel to the Board's website. COL Peterson made an observation that it was difficult for him to determine who was from the public and who was from the Board. He recommended that everyone associated with the Board sit together in one area at future meetings. He also suggested that the people from the public that attended the September 12th meeting be advised about future Board events.

Item 9. Review Semi-Annual Progress Report

The Board reviewed and approved the 119th Semi-Annual Progress Report to the International Joint Commission. The report will be sent to the Commission by the end of day on September 24. An advance copy will be furnished electronically.

Item 10. Other Business

a) **Board Brochure Update.** Mr. Southam noted that the text for the updated brochure needs to be translated into French. Mr. Fay indicated that the IJC should be able to help getting the brochure translated.

b) Niagara Gauges. Mr. Southam reported that there has not been any progress on compiling the list of various water level gauges at Niagara and describing their uses.

c) Removal of Cableway. Mr. Southam reported that the contractor engaged by NYPA on behalf of both Power Entities successfully removed the cableway during the first week of April 2012. The cableway removal was co-funded by NYPA and OPG under the Power Entities' Niagara Joint Works Budget.

d) 1993 Directive. Mr. Southam reported that subsequent to his request for people to review the Directive for any additional anomalies in its wording, staff at the Niagara River Control Centre (NRCC) had recommended a number of changes to clarify the wording related to mean flows, reporting flows under ice conditions, and the exclusion of daily flows during abnormal flow conditions from the monthly calculations. He indicated that the Working Committee had identified the need to review operations with respect to each proposed change before bringing them to the Board's attention.

e) Rationalization of Mail Lists and Protocol. Mr. Southam reported that he and others associated with the Board and its Working Committee had identified the need to rationalize the mailing lists used for the distribution of Working Committee and Board material. Distribution lists have grown with the increased use of email to distribute material. There are numerous products and operational communications. There is a need to review the distribution lists for each product to minimize over-distribution of materials. There is also a need to respect the protocol for the handling and distribution of Board materials and communications between members and associates. For example, Board materials must be maintained separately from a member's or associate's agency materials, and lines of communication between people working on matters handled by the Working Committee should go through the appropriate Committee members, or as a minimum the committee member should be copied on correspondence for information purposes. Ms. Keyes identified the need for a short session on protocols, including information on the handling of files for new members. Ms. Frain asked if it would be possible to establish a password-protected ftp site for the distribution/storage of Board related documents. Mr. Bruxer suggested that the IJC might be able to help establish such a site.

f) Kinetic turbines in the upper Niagara River. Mr. Yu reported that in July 2011 the Federal Energy Regulatory Commission (FERC) had issued preliminary permits to a company named ECOsponsible Inc. for the testing of kinetic turbines in the upper and lower Niagara River. He listed the project's proposed milestones through to the deployment of the Turbine Generating Units (TGU's) in 2015. Ms. Keyes asked what the Board's obligations were with respect to this type of project. Mr. Kangas noted that the IJC has a "Guide to Applications" for projects under the Boundary Waters Treaty. The Board **doesn't** have a regulatory role. Mr. Allerton asked that Mr. Kangas send him a PDF-copy of the guide.

Item 11. Next Board meeting and IJC appearance

The next Board meeting is tentatively scheduled for mid-March, most likely in Chicago, IL. It was suggested that we start the meeting with a review of the composition and responsibilities of the Board, INC, and Working Committee because there has been a significant change in composition. It was also suggested that additional time be allocated for the next meeting if possible or a teleconference be held two weeks in advance of the meeting to help board members prepare.

The Board's Appearance with the IJC is scheduled for the morning of October 16th in Ottawa, with the Reception that evening. Mr. Southam reported that the IJC has asked that the Board use the PowerPoint presentation template that they have developed for its presentation. They feel that the new format, which focuses on issues instead of the traditional summary of conditions and Board activities over the reporting period, will help facilitate greater discussion between the Boards and Commissioners on key issues. The Board identified the need for public information support with respect to the new OPG tunnel and the changes in the Horseshoe Falls as two issues that should be raise for discussion.

The meeting adjourned at 11:25 a.m.

Enclosure 1

INTERNATIONAL NIAGARA BOARD OF CONTROL

MEETING OF 20 SEPTEMBER 2012

Start time: 8:00 am

The Glen House Resort
409 - 1000 Island Parkway, Lansdowne (Gananoque) ON

Draft Agenda

1. Approval of Agenda
2. Update on Lake Erie/Niagara River conditions
3. Status of the 2011-12 Lake Erie-Niagara River Ice Boom report
4. Chippawa-Grass Island Pool operations
5. Review discharge measurements program for the Niagara River and the Welland Canal
6. OPG Tunnel status and plant upgrades/unit testing
7. Falls Recession
8. 2012 Meeting with the Public
9. Review of 119th Semi-Annual Progress Report
10. Other Business
 - a) Board Brochure Update
 - b) Niagara Gauges
 - c) Removal of cableway
 - d) 1993 Directive
 - e) Rationalization of Mailing List and Protocols
 - f) Kinetic Turbines
11. Next Board Meeting and IJC Appearance