

# INTERNATIONAL NIAGARA BOARD OF CONTROL

Minutes of the September 19, 2013 Meeting  
Burlington, ON

Mr. A. Thompson called the meeting to order at 8:30 a.m. in the Superior Room of the Canada Centre for Inland Waters (CCIW) in Burlington, Ontario. Those in attendance were:

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<u>UNITED STATES</u>	<u>CANADA</u>
<u>BOARD MEMBERS</u>	
COL R. Peterson, Alt. Co-Chair Mr. W. Allerton	Mr. A. Thompson, Co-Chair Ms. J. Keyes
<u>SECRETARIES</u>	
Mr. J. Kangas	Mr. C. Southam
<u>WORKING COMMITTEE AND ASSOCIATES</u>	
LTC O. Beaudoin Mr. P. Yu Mr. J. Allis Mr. E. Mendez Mr. E. Tauriainen Mr. K. Kompoltowicz Mr. J. Scungio Mr. G. Cotroneo Ms. Dereth Glance, IJC Dr. M. Colosimo, IJC Mr. J. Babb, IJC	Dr. F. Seglenieks Ms. J. Frain Mr. D. Beach Mr. D. Stevenson Ms. J. Fooks Ms. C. Sykes Mr. G. Walker, IJC Mr. D. Fay, IJC Mr. J.-F. Cantin, IJC

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## **Item 1. Approval of Agenda**

The Board approved the agenda as drafted (Enclosure 1).

## **Item 2. Update on Lake Erie/Niagara River Conditions**

Dr. Seglenieks provided the Board with an update of levels, precipitation and net basin supplies for Lake Erie and the Niagara River. Precipitation over the Lake Erie basin was reported to be 10% above average for the March – August 2013 period. During the same period, the lake's NBS was above average in April, June, July and August and

below average in March and May. The inflow to Lake Erie from Lake Michigan-Huron outflow was below average during the March – August 2013 period. The below-average inflow from upstream combined with Lake Erie's NBS, resulted in below-average NTS for the months of March, May and August, and above average NTS during April, June and July 2013. Overall, Lake Erie's NTS was about 1% below average for March through August 2013. The level of Lake Erie began the reporting period with a March mean level 15 cm (5.9 inches) below its long-term average level for the month, but its August average was 3 cm (1.2 inches) above average. At the time of the meeting, Lake Erie's water level was about 2 cm (0.8 inches) 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 level of Lake Erie was expected to fall back below average on a monthly mean basis by October unless above average water supply conditions are experienced.

### **Item 3. Status of the 2012-13 Lake Erie-Niagara River Ice Boom Report**

Mr. Scungio reported that the draft report has been reviewed by the International Niagara Working Committee (INWC) and their comments have been incorporated. The updated report has been distributed to the Board and its associates for comments. He asked that comments be provided to him as soon as possible as he would like to send the report for printing in early October. Ms. Keyes suggested that some text be added at the start of the report to explain why the Ice Boom is installed. Mr. Scungio agreed to add the text as requested.

### **Item 4. Chippawa-Grass Island Pool Operations**

**a) Operations during Reporting Period and b) Maintenance Issues:** Ms. Frain discussed the operation and maintenance of the Chippawa-Grass Island Pool (CGIP) Control Structure during the reporting period. She summarized the water level gauge outages that occurred during the reporting period, which were primarily due to either communication equipment problems or planned calibration and adjustment work. There were 3 Treaty violations during the reporting period. The first, on March 21 at 4 a.m., occurred as a result of over-closing control gates with heavy lake ice in the Maid-of-the-Mist pool. The second, on April 17 at 8 a.m., occurred due to the failure to account for declining inflow to the CGIP and coincident increase in flow correction. The third, on July 28 at 8 a.m., occurred as a result of a police request for no flow changes to facilitate body recovery in the lower Niagara River. Due to the nature of the first two violations, a special training session was held for control structure operators to help

avoid similar violations in the future. OPG is also training new operators in preparation for future retirements by experienced staff.

Tolerances for regulation of CGIP levels were suspended for three days during the part of March in the current reporting period (i.e., from March 21 to 31) and three days in April for ice conditions, and 1 day in July due to the emergency police request noted above.

OPG's new tunnel was deemed available for commercial operation on March 9, 2013. Gate 1 remains out-of-service in anticipation of rehabilitation work following the completion of the Niagara Tunnel Project. Work to repair hinges and replace seals will be undertaken in the fall of 2013.

Following the failure and subsequent replacement of a flexible hydraulic hose associated with the control system for Gate 13, OPG initiated a program to replace all similar hydraulic hoses on the INCW. The piping and hose assemblies needed were fabricated off site and their installation for all gates was completed between April 1 and May 17, 2013.

Ms. Frain provided an update on the potential issue with the concrete stability of the INCW's bridge supports identified during an inspection of the structure carried out in November 2012. A load restriction has been put into place for vehicles operating on the structure. Consulting engineering firms have been commissioned to provide options for bridge strengthening. Work to determine the most appropriate repair and method of execution are on-going.

**c) Review of Directive:** Dr. Seglenieks reported that the Power Entities were in compliance with Clause 2 a) through d) of the Board's 1993 Directive for operation of the CGIP during the reporting period. Mr. Southam reported that the review of the Board's Directive has not moved forward significantly since the March meeting; however, Dr. Seglenieks in his new role as the INWC's Canadian Co-Chair has been familiarizing himself with the terms of the Directive and will move this effort forward.

#### **Item 5. Review of Discharge Measurement Programs**

**a) Welland Canal and b) Niagara River:** Ms. Fooks reported on the discharge measurement programs in **a)** the Welland Supply Canal and **b)** at the Cableway

Section in the Niagara River. Regularly scheduled measurements are taken in the Welland Supply Canal above Weir 8 to verify the Weir 8 rating, which is used in the determination of flow through the Welland Canal. A second set of ADVN and water level gauging equipment has been installed upstream of the existing ADVN by the St. Lawrence Seaway Corporation. Discharge measurements at the Weir 8 site were conducted during the first week in September 2013 to develop a Weir 8 rating for the new installation. These measurements were in addition to the regularly scheduled measurements in the Welland Supply Canal. Regularly scheduled measurements are planned at the Cableway section in the Niagara River for October 29 through November 1, 2013. In addition, they plan to take additional measurements downstream of the hydroelectric power stations to capture the total river flow for comparison with the sum of the outflows from the Maid-of-the-Mist Pool and the power plants.

**c) Update on Revising the Buffalo Rating Equation:** Mr. Tauriainen provided an update on the revision of the Buffalo rating equation. Regularly scheduled measurements were taken at the International Railway Bridge in 2012. All of the 2012 measured flows were higher than those computed using the 2001 Buffalo rating equation. As a result of reviewing previous discharge measurements made near the International Railway Bridge, a revision of the 2001 Buffalo rating equation is being proposed. A draft report was distributed to members of the INWC in August and some comments have been received. The report is expected to be finalized by the Board's next meeting in the Spring of 2014.

**d) Need for Updating Fort Erie Equation:** Mr. Tauriainen reported that work has started on the review of the Fort Erie rating equation. The Fort Erie rating is related to the Buffalo rating and is used for operational purposes at the INCW to determine the outflow from Lake Erie to the Niagara River and for determining abnormally high or low Niagara River flows for purposes of the Board's 1993 Directive. A draft report should be ready for review by the Coordinating Committee's Hydraulic Subcommittee and the INWC in early 2014.

## **Item 6. OPG Niagara Tunnel Project**

**a) Update on Tunnel Operation:** Ms. Frain reported on the OPG tunnel project. The new tunnel was watered up on March 2 and 3, 2013 and was officially declared to be in-service on March 9, 2013. Testing of the new tunnel's performance relative to its design capacity was carried out by OPG on July 23 and 24, 2013 and confirmed the

total tunnel capacity to be 500 m<sup>3</sup>/s (17,660 cfs)  $\pm$ 2%. The shore area near the intake was returned to the Niagara Parks Commission at the end of August.

**b) Impact on CGIP Fluctuations:** Ms. Frain reported on the impact of the new tunnel on the fluctuation of the CGIP. Although there has been no change in over-all day-to-day operations, there has been some change in the timing of CGIP water use during the day. OPG is still storing water over night, but not necessarily drawing the CGIP down as quickly during the day as before the tunnel was in operation. They will need to observe a longer period of operations before making any conclusions.

### **Item 7. Plant Upgrades and Unit Testing**

**a) OPG:** Ms. Frain reported that Beck 1's Unit G3 was brought back into service on July 12, 2013. An interim rating is being used for the unit and Gibson Testing of the unit is currently planned for May 2014. Gibson Testing for G7, which is also being operated using an interim rating, is scheduled for November 11 to December 6, 2013. Representatives of the International Niagara Committee (INC) and NYPA will be invited to witness a Gibson Test near the end of the test schedule, on or around November 28. Unit G10 is expected to begin upgrades in June 2015.

**b) NYPA:** Mr. Mendez reported that NYPA has completed the full upgrade of Unit 11 of its pump-storage generating station. The unit is slated to come back on line on September 20, 2013; however they are experiencing some start-up issues with the unit. Representatives of the INC and OPG do not need to witness the testing of the upgraded unit as the amount of water entering or leaving the NYPA reservoir is based on change in its storage, not flow through the pump-storage generating station units.

### **Item 8. 2013 Meeting with the Public**

The Board's 2013 annual meeting with the public is scheduled for the evening of September 19<sup>th</sup> in the Mori Room of the Niagara-on-the-Lake (ON) Community Centre. In addition to the face-to-face meeting, this will be the first time that the Board has offered a webinar/teleconference option for participants.

### **Item 9. Review Semi-Annual Progress Report**

The Board reviewed, revised and approved the 121st Semi-Annual Progress Report to the International Joint Commission. An advance electronically copy will be sent to the Commission once the report's text is updated.

## **Item 10. Other Business**

**a) American Falls Bridges and Cleveland Windmill Project:** Mr. Yu provided information on the American Falls Bridges Restoration/Replacement Project. With the continual deterioration of two of the American Falls bridges over the last several years, New York State Parks (NYSP) has worked with consultants to evaluate their existing structure conditions and possible rehabilitation and replacement alternatives. The two pedestrian bridges in question are the ones crossing the American Falls Channel (BIN 5522000 from Prospect Park to Green Island and BIN 5522010 from Green Island to Goat Island). NYSP has requested that the New York State Department of Transportation assist them through project scoping, design and construction to either rehabilitate the structures to a like-new condition or replace them. The project is currently in the planning and scoping phase with the final design and construction phases scheduled for the Spring of 2017. The IJC and the Board may be asked to review the project's plans, which could include rehabilitating the existing bridges, relocating the bridges with portions of the old bridge structure removed or left in place, and the need to cofferdam each bridge pier and/or the entire river channel during construction. The options considered could have a temporary or permanent impact on flow in the American Falls channel. It was noted that the American Falls channel was completely cofferdammed in 1969 for about 5 months.

Mr. Yu described the plans for a windmill project in Lake Erie near Cleveland, OH. The proponents plan to install 1000 wind turbines, starting with six demonstration units 9 to 14 km (7 to 9 miles) off shore in approximately 18 m (60 ft) of water. Although construction of the foundations for the turbines wouldn't have a significant effect on Lake Erie's water level and hence the lake's outflow, they might have an impact on ice conditions.

Mr. Yu also informed the Board that the Maid of the Mist Steamboat Company is building a winter storage facility for its boats on the US side of the Maid-of-the-Mist Pool at the old Schoellkopfe power plant location. The USACE Buffalo District reviewed the design and determined that there were no transboundary impacts. The construction was approved by the US Department of State, but halted pending a legal challenge. The legal challenge has since been thrown out and the project is on track to be finished by the end of the tour boat season. Lastly, Mr. Yu noted that there is talk about a

proposal to install a power transmission line under Lake Erie between Ontario and Pennsylvania, although he did not have further details at the time of the meeting.

**b) Falls Recession & International Boundary Location:** Dr. Seglenieks reported that based on a photograph taken on August 19, 2013 no significant changes in the Horseshoe Falls crestline were observed during the reporting period. Dr. Seglenieks showed plots of the recession rates over time observed since the late 1600s along three lines drawn through the Canadian Flank (west), Apex (centre) and American Flank (east) of the Horseshoe Falls and since the mid-1800s for the centreline of the American Falls. The plots indicated a consistent rate of recession over time before 1920s along the Canadian Flank; however, this has slowed considerably since that time. There has been much more recession along the Horseshoe Falls' centre line, with slower, but still considerable retreat since the 1950s. There has been little recession along the US flank since the mid-1700s and similarly with the American Falls which has shown virtually no change since the 1950s. Dr. Seglenieks showed a brief video posted on the Internet by a private citizen showing the crestline in detail taken using a camera mounted on an unmanned aerial vehicle. He indicated that it would cost approximately \$5000 to have the entire crestline filmed in a similar way by a contractor.

Dr. Seglenieks showed a number of USGS maps of Niagara Falls. He noted that although the 1980 and 1995 maps have the International Border in the correct location; the American Flank of the Horseshoe Falls is drawn too far upstream (i.e., to the east). As a result, it appears that 1/3 of Horseshoe Falls crest is inside United States. At least one website dedicated to facts about Niagara shows one of these USGS maps and states that about 1/3 of the Horseshoe Falls crestline is in the United States. This led to a public inquiry about this statement and the location of the international border at Niagara. Dr. Seglenieks noted that the current USGS map has both the border and the crestline correctly positioned, but the Niagara County (US) border does not correspond to the international border. Its placement would put large section of the crest of the Horseshoe Falls with its territory. Dr. Seglenieks wanted to make the Board members aware of this public interest topic in case they are asked about it at the Board's public open house or elsewhere.

**c) Temporary gauge at MOM:** Ms. Frain reported that Ontario Power Generation installed a temporary water level gauge at the Maid-of-the-Mist dockage area last year.

The gauge was reinstalled in April 19, 2013 following the ice season. Once sufficient data is acquired and assessed, the case for installing a permanent water level gauge in the vicinity of this location, to act as an alternative for the Ontario Power Generating Station tailwater gauge and backup for the Ashland Avenue gauge, will be further investigated. Ms. Frain noted that the new tour boat company has indicated they will support this effort.

**d) Website Update and FAQs:** Mr. Southam noted that Board's new website is ready to be launched by the IJC, and he asked and received the Board's approval to have the IJC do so. Mr. Southam noted he had distributed a list of preliminary questions for the Board's FAQ page. Many of the general questions about the IJC, Orders of Approval, etc. and their organization are based on the St. Lawrence Board's FAQ page. As such, there are already vetted answers available for them. Questions related to the Niagara Board (e.g. the Board's 1993 Directive and the Lake Erie-Niagara River Ice Boom) will require answers and Mr. Southam asked for everyone's help preparing them. He also asked people to provide any comments they have on the questions distributed and to suggest addition questions that should be added.

**e) OPG Welland River Information session for NPCA Board:** Ms. Frain reported that she attended a meeting at the Niagara Peninsula Conservation Authority (NPCA) to provide a presentation on OPG operations and the Welland River for the NPCA Board. She noted that there are a number of myths related to this issue. The meeting went well, and although the members of the public weren't allowed to ask questions, the Welland River Flood Committee provided written questions that were addressed. Ms. Frain noted that the NPCA facility might be a suitable venue for a Niagara Board public open house.

**f) Relationship between CGIP and Welland River:** Mr. Beach provided a brief summary of the issue and provided an update on the current status, next steps and expected outcome of the review. He highlighted the following points: 1) the INBC through its 1993 Directive regulates water levels in the CGIP to meet the terms of the 1950 International Niagara Treaty; 2) water levels in the CGIP are controlled to optimize hydro power generation and ensure the scenic spectacle of Niagara Falls; 3) the Niagara and Welland rivers have been designated an Area of Concern (AOC) in cooperation with the IJC under Great Lakes Water Quality Agreement; 4) the Welland River ecosystem is degraded; 5) there is concern that water level fluctuations in the CGIP are impacting the Welland River ecosystem; and 6) flooding in the Welland River



watershed is an ongoing issue due to its flat topography. Mr. Beach is currently reviewing existing engineering and biological reports and analysing available Niagara River water level data. He intends to determine the status of other ecosystem rehabilitation initiatives and coordinate with them. The expected outcome of the work is to establish the current state of knowledge of the relationship between the Niagara and Welland Rivers and identify potential information gaps and the need for additional study.

**Item 11. Next Board Meeting and IJC Appearance**

The Board's Fall Appearance with the IJC is scheduled for the morning of October 24, with the Reception being held during evening of the 23rd. There is also a special IWI workshop being held during the afternoon of the October 23, with Board Chairs and Members invited to attend. The next Board meeting is tentatively scheduled for the last week of March 2014 in a U.S. location to be determined at a later date.

The meeting adjourned at 11:45 a.m.

# INTERNATIONAL NIAGARA BOARD OF CONTROL

MEETING OF SEPTEMBER 19, 2013

Start time: 8:30 am

Superior Room  
Canada Centre for Inland Waters (CCIW)  
867 Lakeshore Road, Burlington, Ontario.

## Approved Agenda

1. Approval of Agenda
2. Update on Lake Erie/Niagara River conditions
3. Status of the 2012-13 Lake Erie-Niagara River Ice Boom report
4. Chippawa-Grass Island Pool update
  - a) Operations during reporting period
  - b) Maintenance issues
  - c) Review of Directive
5. Review Discharge Measurements Program for the Niagara River and the Welland Canal
  - a) Welland Canal
  - b) Niagara River
  - c) Update on revising the Buffalo rating equation
  - d) Need for updating Fort Erie equation
6. OPG Niagara Tunnel Project
  - a) Update on tunnel operation
  - b) Impact on CGIP fluctuations
7. Plant Upgrades and Unit Testing
  - a) OPG
  - b) NYPA
8. 2013 Meeting with the Public
9. Review of 121st Semi-Annual Progress Report
10. Other Business
  - a) American Falls Bridges and Cleveland Windmill Project
  - b) Falls Recession & International Boundary Location
  - c) Temporary gauge at MOM
  - d) Website update and FAQs
  - e) OPG Welland River information session for NPCA Board
  - f) Relationship between CGIP and Welland River
11. Next Board Meeting and IJC Appearance