

18-MONTH OUTLOOK:

An Assessment of the Reliability of the Ontario Electricity System

From July 2007 to December 2008



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Executive Summary

Ontario's supply-demand picture over the next 18 months indicates that under Normal Weather conditions, with all of the planned resource additions, sufficient resources will be available within Ontario to meet expected requirements during most of the period.

As in past summers, Ontario may need to rely on power from neighbouring jurisdictions on some occasions this summer, particularly if extreme weather occurs or if equipment performance is below normal. Current plans for generator outages may need to be revised for periods when reserves are below required levels. It is expected that some generator owners will reschedule their outages in response to this Outlook, and subsequent Outlook reports will incorporate the impact of those scheduling changes. If extreme weather occurs and equipment performance is worse than normal, the IESO may need to implement measures such as the Emergency Load Reduction Program and emergency purchases to maintain reliability.

More than 2,300 MW of new supply is expected to come into service over the next 18 months. The new supply includes over 1,500 MW of new gas-fired generation, and over 700 MW of new wind generation and would represent the highest amount of additional capacity in an 18-Month Outlook period since 2002. The majority of this new capacity is identified to come into service during the last three months of the study period.

Delays have been reported to the in-service date of the Goreway gas-fired generating station that reduce available generation by 485 MW throughout the summer of 2007 and by 860 MW in the latter half of 2008.

The Ontario transmission system is expected to be adequate to supply the 2007 and 2008 demand under forecast conditions.

For the summer forecast conditions without Goreway GS in service, the projected power flows over the Trafalgar, Claireville and Cherrywood autotransformers, are approaching but not exceeding the maximum station capability. The Claireville autotransformers are the heaviest loaded of the three.

The electricity demand growth experienced in Ontario in the last decade has resulted in a number of area loads reaching or exceeding the continuous capability of the existing transformer stations during contingencies. To address this problem and provide additional transformer capacity for future load growth Hydro One and other distributors have initiated plans to build new transformer stations and replace existing transformers where necessary. Eleven new and upgraded load supply transformer stations will be placed in service during the timeframe of this Outlook and shortly after.

A high-voltage shunt capacitor at Richview TS suffered significant damage at the beginning of 2007. As a result of its subsequent investigation, Hydro One imposed temporary restrictions on the use of high voltage shunt capacitors across the province pending remedial actions. Permanent or temporary actions are now complete for all capacitors except the damaged Richview capacitor. With most of the shunt capacitors available, the Independent Electricity System Operator (IESO) expects to be able to supply power demands and maintain adequate system voltages over the period of this Outlook.

The forecast for peak demand is similar to the previous Outlook. The forecast for energy demand is lower due to a combination of lower industrial demand and increased levels of conservation. Conservation and demand response programs of the Ontario Power Authority (OPA) and local distribution companies continue to gain traction and will grow moving forward. This Outlook includes the anticipated effects of those conservation and demand response programs.

Weather corrected energy demand for 2006 was 152.3 terawatt hours (TWh), a drop of 1.6% from 2005. Energy demand is expected to grow 0.9% to 153.7 TWh in 2007.

The following table summarizes the peak demands for the upcoming seasons under the Seasonal Normal and Extreme weather scenarios. These peaks are for the Firm Resource scenario and represent demand prior to the impacts of targeted conservation. This is comparable to the same table in the previous Outlooks. Details on demand under the two scenarios are included in Tables A3 and A4 and in the Ontario Demand Forecast document.

Season	Seasonal Normal Weather Peak (MW)	Extreme Weather Peak (MW)
Summer 2007	25,773	27,585
Winter 2007-08	24,745	25,548
Summer 2008	26,028	27,840

The IESO regularly assesses the adequacy and reliability of Ontario's power system. This 18-Month Outlook provides the IESO assessment of the reliability of the power system from July, 2007 to December, 2008 utilizing the most up to date forecast information and taking into account experience gained from past operations.

The 18-Month Outlook is intended for operational planning purposes, and for the scheduling of generator outage plans. To avoid unacceptably low reserves, it is important to the overall operational planning process that participants adjust their maintenance activities to periods where available resources exceed requirements.

- End of Section -

Caution and Disclaimer

The contents of these materials are for discussion and information purposes and are provided “as is” without representation or warranty of any kind, including without limitation, accuracy, completeness or fitness for any particular purpose. The Independent Electricity System Operator (IESO) assumes no responsibility to you or any third party for the consequences of any errors or omissions. The IESO may revise these materials at any time in its sole discretion without notice to you. Although every effort will be made by the IESO to update these materials to incorporate any such revisions it is up to you to ensure you are using the most recent version

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Table of Contents

Executive Summary	iii
Table of Contents	vii
List of Tables	viii
List of Figures	viii
1.0 Introduction	1
2.0 Updates to This Outlook	3
2.1 Changes to Demand Forecast	3
2.2 Updates to Resources	3
2.3 Updates to Transmission Outlook	4
3.0 Historical Review	5
3.1 Hourly Resource Contributions at Time of Weekday Peak	5
3.2 Weather and Demand Historical Review	6
4.0 Demand Forecast	7
5.0 Resource Adequacy Assessment	9
5.1 Planned Resource Scenario with Normal and Extreme Weather	9
5.2 Firm Resource Scenario with Normal and Extreme Weather	12
5.3 Comparison of Resource Scenarios	14
5.4 Resource Adequacy Risks	15
6.0 Transmission Reliability Assessment	21
6.1 Transmission Projects	21
6.2 Planned Transmission Outages	21
6.3 Load Supply Enhancements	23
6.4 Adequacy of the Existing Transmission System	23
7.0 Conclusions	27
Appendix A Resource Adequacy Assessment Details	31
Appendix B Transmission Projects	43
Appendix C Planned Transmission Outages	45

List of Tables

Table 5.1 Existing Installed Generation Resources.....	10
Table 5.2 Committed and Contracted Generation Resources	11
Table 5.3 Summary of Available Resources.....	14
Table A1 Assessment of Resource Adequacy: <u>Normal Weather</u> , Firm Resource Scenario.....	31
Table A2 Assessment of Resource Adequacy: <u>Normal Weather</u> , Planned Resource Scenario.....	33
Table A3 Demand Forecast for Firm Resource Scenario	35
Table A4 Demand Forecast Range for Planned Resource Scenario	36
Table A5 Assessment of Resource Adequacy: <u>Extreme Weather</u> , Firm Resource Scenario	37
Table A6 Assessment of Resource Adequacy: <u>Extreme Weather</u> , Planned Resource Scenario	39
Table A7 Energy Production Capability Forecast	41
Table B Transmission Projects	43
Table C1 Bruce Zone	45
Table C2 East Zone	45
Table C3 Essa Zone.....	45
Table C4 Niagara Zone	45
Table C5 Northeast Zone	46
Table C6 Northwest Zone	46
Table C7 Ottawa Zone.....	46
Table C8 Southwest Zone	47
Table C9 Toronto Zone.....	48
Table C10 West Zone	49

List of Figures

Figure 2.1 Comparison of Hydroelectric Contribution Forecasts.....	4
Figure 3.1 Wind Generation Contributions at the Time of Peak Demand.....	5
Figure 3.2 Hydro Contributions (Energy and Operating Reserve) at the Time of Weekday Peak...	6
Figure 4.1 Demand Forecast Range	8
Figure 5.1 Reserve Above Requirement: Planned Resource Scenario with Normal vs. Extreme Weather.....	12
Figure 5.2 Reserve Above Requirement: Firm Resource Scenario with Normal vs. Extreme Weather.....	13
Figure 5.3 Reserve Above Requirement: Planned Resource Scenario with Present Outlook vs. Previous Outlook.....	15
Figure 5.4 Variation in Hydro Monthly Median Contribution at the Time of Weekday Peak.....	17

1.0 Introduction

This Outlook covers the 18-month period from July 2007 to December 2008. It supersedes the report titled “An Assessment of the Reliability of the Ontario Electricity System from April 2007 to September 2008”, dated April 10, 2007.

The purpose of the 18-Month Outlook is:

- To advise market participants of the resource and transmission reliability of the Ontario electricity system;
- To assess potentially adverse conditions that might be avoided through adjustment or coordination of maintenance plans for generation and transmission equipment; and
- To report on initiatives that are being put in place to improve reliability within the 18-month timeframe of this Outlook.

The contents of this Outlook focus on the assessment of resource and transmission adequacy. Other supporting information and forecasts are contained separately in the following documents that are updated as required:

- “Ontario Demand Forecast from July 2007 to December 2008” (IESO_REP_0366) (found on the IESO web site at http://www.ieso.ca/imoweb/pubs/marketReports/18Month_ODF_2007jun.pdf)
 - Contains a detailed description of the peak and energy demand forecasts used in this Outlook.
- “Methodology to Perform Long Term Assessments” (IESO_REP_0266) (found on the IESO web site at http://www.ieso.ca/imoweb/pubs/marketReports/Methodology_RTAA_2007jun.pdf)
 - Contains information regarding the methodology used to perform the demand forecasts, resource adequacy assessments and transmission reliability assessments in this Outlook.
- “Ontario Transmission System” (IESO_REP_0265) (found on the IESO web site at http://www.ieso.ca/imoweb/pubs/marketReports/OntTxSystem_2007jun.pdf)
 - Provides specific details on the transmission system, including the major internal transmission interfaces and interconnections with neighbouring jurisdictions.

Readers are invited to provide comments on this Outlook report or to give suggestions as to the content of future reports. To do so, please contact us at:

- Toll Free: 1-888-448-7777
- Tel: 905-403-6900
- Fax: 905-403-6921
- E-mail: customer.relations@ieso.ca.

This Outlook presents an assessment of resource and transmission adequacy based on the stated assumptions, using the described methodology. Readers may envision other possible scenarios, recognizing the uncertainties associated with various input assumptions, and are encouraged to use their own judgment in considering possible future scenarios. The tables contained in the document can be downloaded from the Independent Electricity System Operator (IESO) web site in MS Excel format.

In addition to the comprehensive Outlook, the IESO generally publishes Interim Updates to the 18-Month Outlook during each month for which a full Outlook is not issued. These updates include a spreadsheet which reflects changes to Total Resources, Total Reductions in Resources, and Reserve Above Requirement values for the Planned Resource Scenario. The updates also include a summary of actual demand and forecast demand data. Similar to the full Outlooks, the Interim Updates are posted on the IESO web site. These updates provide Outlook information on a more frequent basis to allow market participants to better adjust their operational plans and outage schedules.

The reader should be aware that [Security and Adequacy Assessments](#) are published on the IESO web site on a weekly and daily basis that progressively supersedes information presented in this report.

- End of Section -

2.0 Updates to This Outlook

2.1 Changes to Demand Forecast

The demand forecast has been updated to include the actual demand, weather and economic experience through to the end of March 2007. The economic outlook and weather scenarios have been updated based on the most recent data.

This Outlook presents the demand forecast under two scenarios. Since the treatment of conservation and demand management is similar to the treatment of generation we have used the same resource scenario names to describe the two demand forecasts. The Planned Resource scenario includes the impacts of future conservation programs and initiatives by the Ontario Power Authority (OPA) and electricity distributors. As well, the Planned Resource scenario includes projected demand measures as a resource. The Firm Resource scenario shows demand without the inclusion of targeted or incremental conservation efforts. The Firm Resource scenario only includes existing demand measures as a resource.

Overall, the updated demand forecast has slightly higher summer peaks and slightly lower winter peak demands. Overall energy demand is lower due to the aforementioned conservation impacts and lower industrial loads.

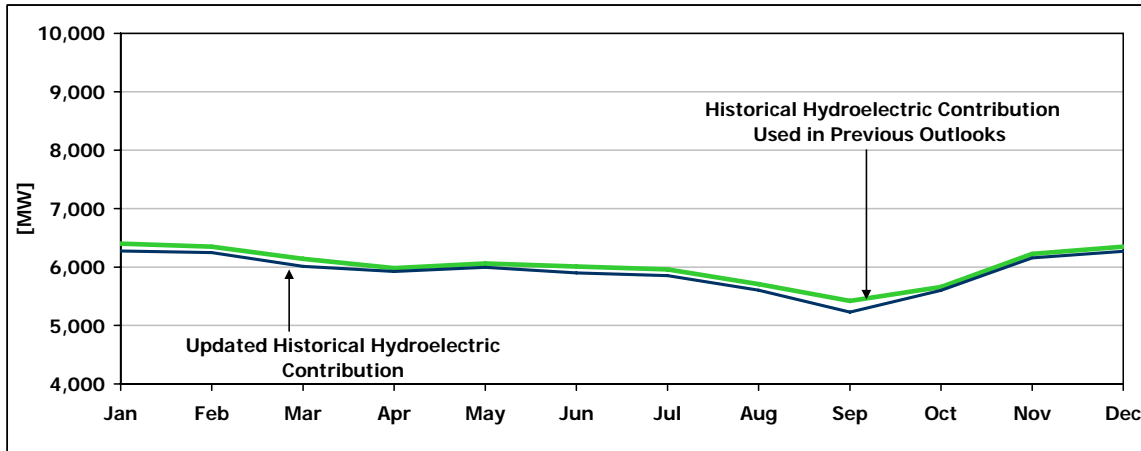
2.2 Updates to Resources

There have been updates to the in-service dates of two new generators and upgrades to two existing generators (refer to Table 5.2). Delays have been reported to the in-service date of the Goreway gas-fired generating station that reduce available generation by 485 MW throughout the summer of 2007 and by 860 MW in the latter half of 2008.

There have been updates to the generator outages submitted by market participants. For this Outlook, generation outage plans submitted to the IESO's Integrated Outage Management System (IOMS) as of May 25, 2007 were used.

The historic hydroelectric production plus contribution to operating reserve at the time of weekday peak has been updated. Previous hydroelectric forecasts were based on data from May 2002 to December 2005. Additional data from January 2006 to April 2007 were used to arrive at the updated forecast values. Figure 2.1 shows the updated hydroelectric forecasts used in this Outlook compared to hydroelectric forecasts used in the previous Outlooks.

Figure 2.1 Comparison of Hydroelectric Contribution Forecasts



2.3 Updates to Transmission Outlook

The list of transmission projects and planned and forced transmission outages have been updated from the previous 18-Month Outlook. For this Outlook, transmission outage plans submitted to the IOMS as of April 23, 2007 were used.

This Outlook also presents a discussion of some of the transmission enhancements that are forecast to be in service within the outlook period as well as some transmission projects that are currently under construction.

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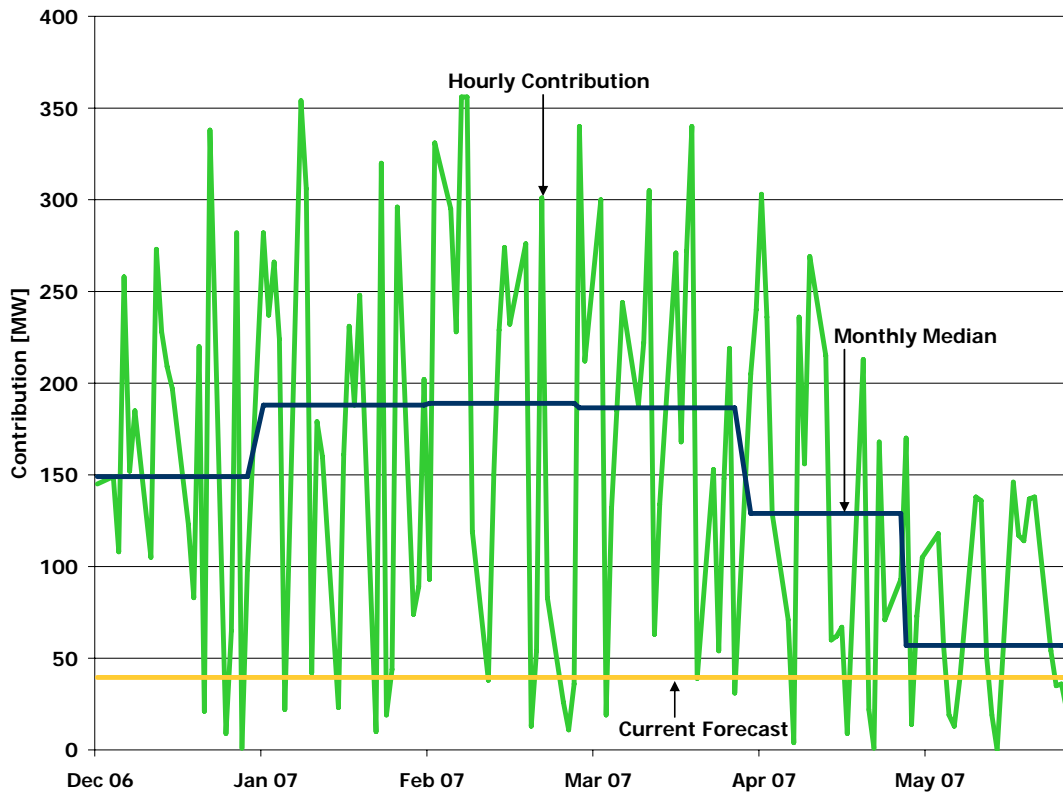
3.0 Historical Review

This section provides a review of past power system operation, including the most recent months of operation, to identify noteworthy observations, emerging problems and variations from forecast.

3.1 Hourly Resource Contributions at Time of Weekday Peak

Figure 3.1 indicates the amount of wind generation contributions to the wholesale market at the time of peak demand. There were no changes in the amount of installed wind generation capacity for the period from December 1, 2006 to May 31, 2007.

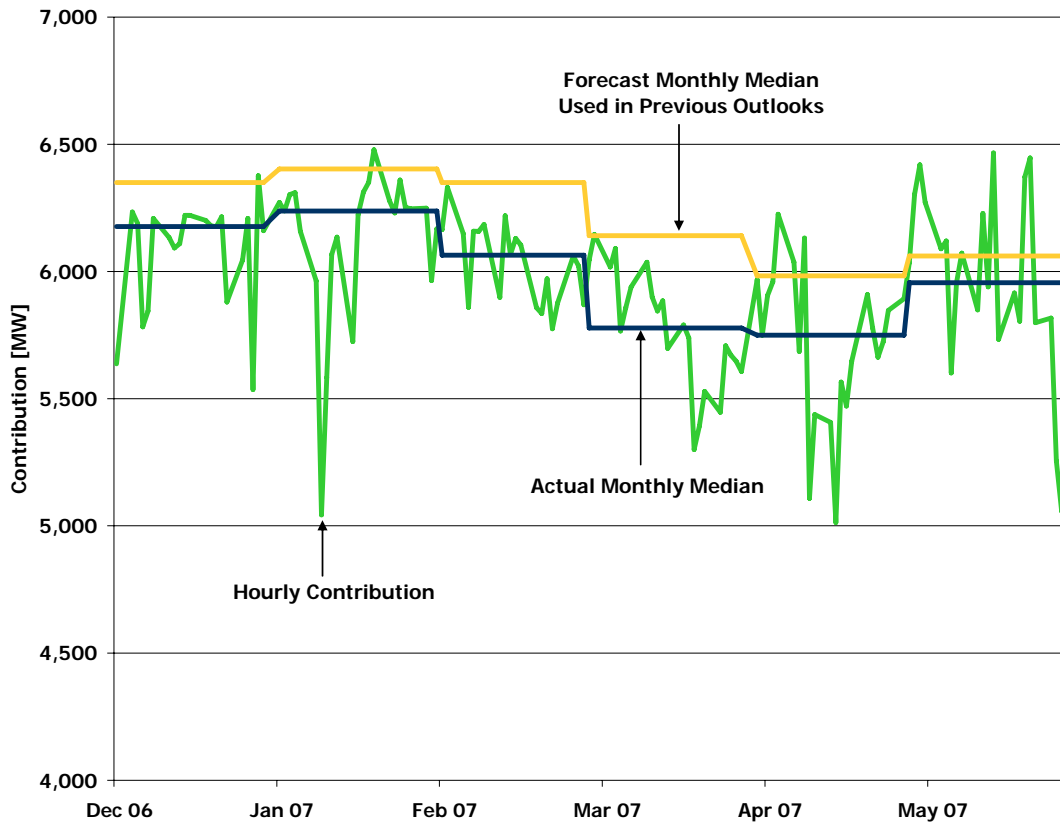
Figure 3.1 Wind Generation Contributions at the Time of Peak Demand



The actual contributions from wind are often higher than the current forecast of 10% of nameplate capacity. The IESO is working with the Wind Power Integration Working Group to make recommendations regarding the most appropriate forecast methodology for use in future Outlooks.

Figure 3.2 indicates the actual hydro contributions to energy and operating reserve markets at the time of weekday peak, compared to the forecast contributions. The forecast contributions for the months included in Figure 3.2 were forecast in previous Outlooks, and were based on the actual monthly median contributions from May 1, 2002 to December 31, 2005. For the time period shown in the figure the actual monthly median of daily hydro contributions is tracking two to six percent lower than the levels forecast in past Outlooks.

Figure 3.2 Hydro Contributions (Energy and Operating Reserve) at the Time of Weekday Peak



3.2 Weather and Demand Historical Review

The winter of 2006-07 started off very mild but finished colder than normal. The winter peak occurred on February 13th – the latest winter peak we have observed over the past 30 years. This is partly due to the cold weather on that day but also some of the cause is due to absence of peak eliciting weather during the mild December and January. March was milder than normal but the peak day was very cold. Although the weather impact lessens as Ontario moves into spring, April was colder than normal and reflected that through higher energy demand.

For the first four months of 2007 energy demand was up 1.8% compared to 2006. This is due to the colder weather of 2007 compared to 2006. The weather corrected energy demand was 0.6% lower on a year over year basis.

- End of Section -

4.0 Demand Forecast

The forecast of demand has been updated to reflect the most recent economic, weather and demand information. The economic outlook has been updated but the key economic themes continue to dominate the Ontario economy.

- The high Canadian dollar hurts the competitiveness of Ontario firms exporting to the U.S.
- World demand for metals, in particular, has led to high commodity prices, helping the mining and processing sectors.
- Interest rates continue to foster business investment and domestic consumption, fuelling vehicle sales and construction activity.
- The growth in overall electricity demand will lag economic growth as large energy intensive industries are not growing as quickly as the economy as a whole.

The demand models were updated and re-estimated to capture the most recent actual data and economic forecast.

The weather-corrected energy continues to lag last year's demand levels. However, peak demands are expected to grow with the growth in housing stock and commercial buildings. Targeted CDM savings being pursued by a number of market participants, including the OPA will help blunt some of this growth in peak demand.

Demand Forecast Assumptions

The adequacy assessments contained in this Outlook take into consideration a range of peak demands that can occur under various weather conditions with varying probability of occurrence. The IESO focuses on two demand forecast scenarios, which are based on:

- Monthly Normal weather; and
- Extreme weather.

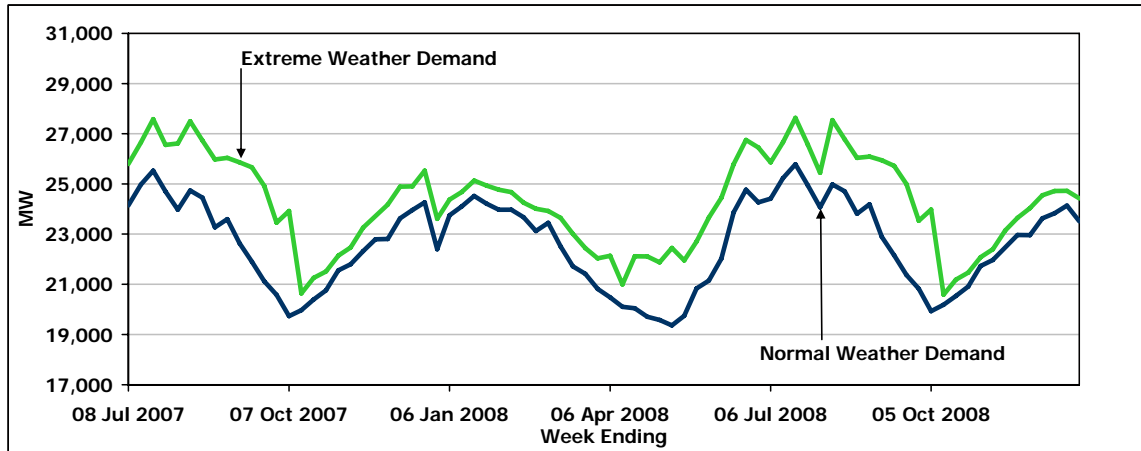
The impact of varying weather is modeled probabilistically in the calculation of the required resources for each week of the study period.

The demand forecast now has two additional scenarios that differ in their treatment of conservation. The Planned Resource scenario includes the targeted impacts of conservation programs and initiatives by the OPA and electricity distributors. These impacts are decremented from the forecast. The Firm Resource scenario shows demand without the inclusion of targeted conservation efforts. Demand measures, such as dispatchable loads and responsive demand, are treated as a resource and are covered in Section 5.1 and 5.2.

Economic and demographic growth will be the factors driving energy and peak demand up during the forecast, and conservation will act to slow that growth. Under the Firm Resource Scenario energy demand will increase 0.9% and 1.4% in 2007 and 2008. The 2007 summer peak is expected to be 25,525 MW and the 2007-08 winter peak is predicted to be 24,516 MW. Under the Planned Resource scenario energy demand is expected to grow at a much lower 0.2% for 2008 as the targeted levels of conservation reduce electricity demand.

Figure 4.1 shows the Monthly Normal and Extreme (Firm Resource) weather demands assumed for each week in the study period.

Figure 4.1 Demand Forecast Range



For further discussion of how we identify peak demands and treat demand measures please refer to the Ontario Demand Forecast document, Section 3.0 *Forecasting Process and Assumptions*.

- End of Section -

5.0 Resource Adequacy Assessment

This section provides an assessment of the adequacy of resources to meet the forecast demand. From this assessment generator owners receive guidance for planning outages. When planned outages would adversely affect the reliability of the grid, as indicated by reserves below required levels, the IESO has the authority to deny approval of outages based on their order of precedence.

In recognition of the uncertainty which exists regarding the future availability of resources, two resource scenarios are described in this section: the Firm Resource Scenario (FRS) and the Planned Resource Scenario (PRS).

The IESO assumes in the FRS that a limited set of planned resource additions will occur on their forecast in-service dates, whereas the PRS is developed on the assumption that all planned resource changes will occur as scheduled.

The demand forecast for the PRS includes conservation measures.

For both scenarios, all generating resources excluding the units that are scheduled to retire, once in-service or already in-service, are assumed to remain in-service for the duration of the study period, except for periods of time that the generator owner/operator has submitted planned outages for their generating units.

5.1 Planned Resource Scenario with Normal and Extreme Weather

Resource Assumptions

The Planned Resource Scenario assumes quantities of demand measures and generation capacity based on existing resources plus significant new generation facilities that are scheduled to come into service within the 18-month study period. These include:

- A. Existing Installed Resources: total capacity of 31,214 MW (refer to Table 5.1)
- B. New generation facilities and capacity changes and retirements to the existing facilities (refer to Table 5.2)
 - o Includes generation projects in the IESO's Connection Assessment and Approval Process (CAA)¹ that are under construction and projects contracted by the OPA.
 - o The estimated effective date shown in Table 5.2 indicates the date on which additional capacity is assumed to be available to meet Ontario demand. For projects that are under contract, the estimated effective date is the best estimate of the date when the contract requires the additional capacity to be available. In the event that a project is delayed, such that the commercial in-service date is expected to be later than the contract date, the estimated effective date will be the best estimate of the commercial in-service date for the project.

¹ Details regarding the IESO's CAA process and the status of all projects in the CAA queue, including copies of available Preliminary Assessment and System Impact Assessment Reports, can be found on the IESO's web site at <http://www.ieso.ca/imoweb/connassess/ca.asp>.

C. Demand Forecast:

- The demand forecast is reduced for the impacts of targeted conservation.
- Demand measures include dispatchable loads and loads contracted with the OPA.
- Demand measures range from 370 MW to a maximum of 533 MW (refer to column “Demand Measures” in Table A2 or A6 in Appendix A).
- Demand measures are forecast based on market participant information and actual market experience.
- Based on historical data, it is assumed that 57% of dispatchable demand is available at the time of the weekly peak.

Table 5.1 Existing Installed Generation Resources

Fuel Type	Total Capacity (MW)	Number of Stations
Nuclear	11,419	5
Hydroelectric	7,788	68
Coal	6,434	4
Oil / Gas	5,103	22
Wind	395	4
Biomass / Landfill Gas	75	5
Total	31,214	108

Table 5.2 Committed and Contracted Generation Resources

Proponent/Project Name	Zone	Fuel Type	Capacity MW	Estimated Effective Date	Considered in Resource Scenario	
					FRS	PRS
Retirement of Sandy Falls 25 Hz generation to convert to 60 Hz	Northeast	Water	-3	2007-Q3	Yes	Yes
Ripley Wind Power Project	Southwest	Wind	76	2007-Q4		Yes
Lac Seul Project - English River	Northwest	Water	13	2007-Q4		Yes
Nuclear Upgrade	N/A	Uranium	27	2007-Q4 ⁽¹⁾	Yes	Yes
Abitibi Canyon Runner Upgrade	Northeast	Water	10	2008-Q1	Yes	Yes
Great Northern Tri-Gen	West	Gas	12	2008-Q1		Yes
Retirement of Lower Sturgeon 25 Hz generation to convert to 60 Hz	Northeast	Water	-5	2008-Q1	Yes	Yes
Umbata Falls Hydroelectric	Northwest	Water	23	2008-Q2		Yes
Durham College District Energy	Toronto	Gas	2	2008-Q2		Yes
Countryside London Cogen	West	Gas	12	2008-Q2		Yes
Portland Energy Centre Phase I	Toronto	Gas	250	2008-Q2		Yes
Retirement of Wawatin 25 Hz generation to convert to 60 Hz	Northeast	Water	-11	2008-Q2	Yes	Yes
Warden Energy Centre	Toronto	Gas	5	2008-Q2		Yes
Kruger Energy Port Alma Wind Power Project	West	Wind	101	2008-Q4		Yes
Nuclear Upgrade	N/A	Uranium	27	2008-Q4 ⁽¹⁾	Yes	Yes
Greenfield Energy Centre	West	Gas	1,005	2008-Q4		Yes
Melancthon II Wind Project	Southwest	Wind	132	2008-Q4 ⁽¹⁾		Yes
Wolfe Island Wind Project	East	Wind	198	2008-Q4		Yes
Return of Sandy Falls as a 60 Hz station	Northeast	Water	6	2008-Q4	Yes	Yes
Greenfield South Power Plant	Toronto	Gas	280	2008-Q4		Yes
Enbridge Ontario Wind Power Project	Southwest	Wind	200	2008-Q4		Yes
Total			2,359			

Notes to Table 5.2:

The total may not add up due to rounding.

(1). The estimated effective year and the quarter for the project has changed from the last Outlook.

Over the course of the Outlook period, the contracted amount of IESO and OPA demand response programs grows by about 235 MW.

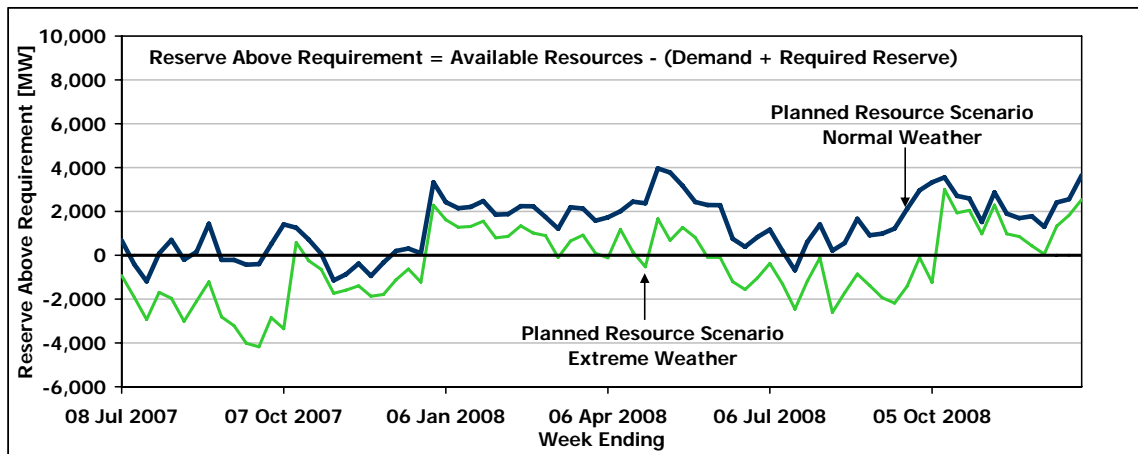
The generation capability assumptions are as follows:

- Hydroelectric capability based on median historical values of hydroelectric production and contribution to operating reserve during weekday peak demand hours from May 2002 to April 2007.
- Capacity and energy contributions from thermal generators based on market participant submissions, including planned outages, expected forced outage rates and seasonal deratings.
- Capacity at the time of weekday peak and total energy contributions from wind-powered generation assumed to be 10% and 30%, respectively.

Weekly Adequacy Assessments

Reserve Above Requirement levels, which represent the difference between Available Resources and Required Resources, are shown in Figure 5.1.

Figure 5.1 Reserve Above Requirement: Planned Resource Scenario with Normal vs. Extreme Weather



5.2 Firm Resource Scenario with Normal and Extreme Weather

Resource Assumptions

The Firm Resource Scenario assumes quantities of demand measures and generation capacity based on the existing resources and a limited set of planned capacity increases or additions (refer to Table 5.2, column labeled “FRS” under heading “Considered in Resource Scenario”). This scenario includes:

- Existing Installed Resources: total capacity of 31,214 MW (refer to Table 5.1).
- Capacity changes to some existing facilities.
- Additional generating resources that have started their commissioning activities with contributions beginning on the date that the facility is expected to be in-service.
- Additional generating resources that are expected to become available in the first three months of the Outlook study period (regardless of commissioning status), with contributions beginning on the date that the facility is expected to be in-service.

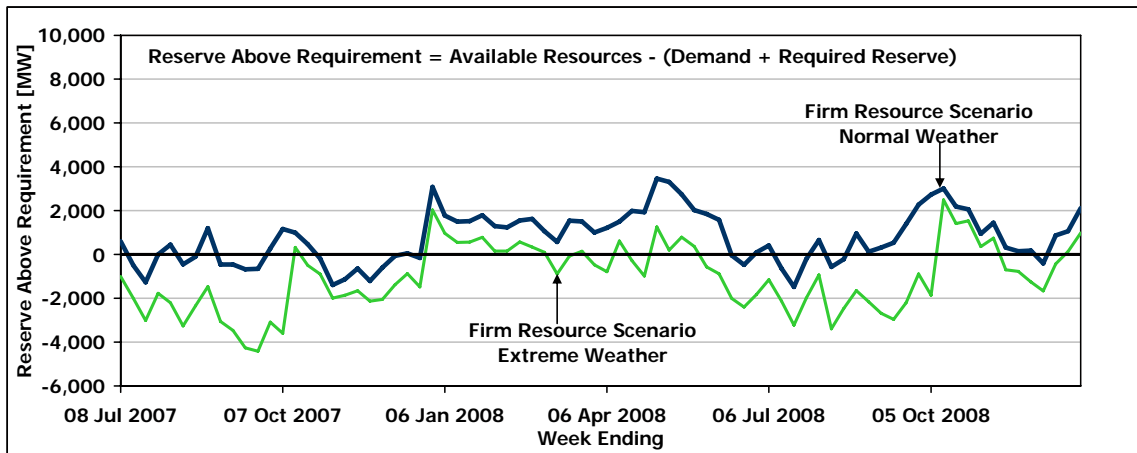
- E. Existing demand measures assumed fixed at 290 MW for the entire period of the Outlook (refer to column "Demand Measures" in Table A1 or A5 in Appendix A). Demand values (Table A3 in Appendix A) exclude targeted conservation.

With respect to forecasts of generation capabilities, the Firm Resource Scenario is based on the same assumptions as the Planned Resource Scenario.

Weekly Adequacy Assessments

Reserve Above Requirement levels, which represent the difference between Available Resources and Required Resources, are shown in Figure 5.2.

Figure 5.2 Reserve Above Requirement: Firm Resource Scenario with Normal vs. Extreme Weather



5.3 Comparison of Resource Scenarios

Table 5.3 shows a snapshot of the forecast available resources, under the two scenarios, at the time of the seasonal peak demands over the study period.

The monthly forecast of energy production capability, as provided by market participants, is included in Appendix A, Table A7.

Table 5.3 Summary of Available Resources

Notes	Description \ Year	Summer Peak 2007		Winter Peak 2008		Summer Peak 2008	
		Firm Resource Scenario	Planned Resource Scenario	Firm Resource Scenario	Planned Resource Scenario	Firm Resource Scenario	Planned Resource Scenario
1	Installed Resources (MW)	31,214	31,214	31,248	31,336	31,232	31,624
2	Imports (MW)	0	0	0	0	0	0
3	Total Resources (MW)	31,214	31,214	31,248	31,336	31,232	31,624
4	Total Reductions in Resources (MW)	3,261	3,261	2,310	2,380	3,236	3,344
5	Demand Measures (MW)	290	370	290	533	290	533
6	Available Resources (MW)	28,243	28,323	29,228	29,489	28,286	28,813

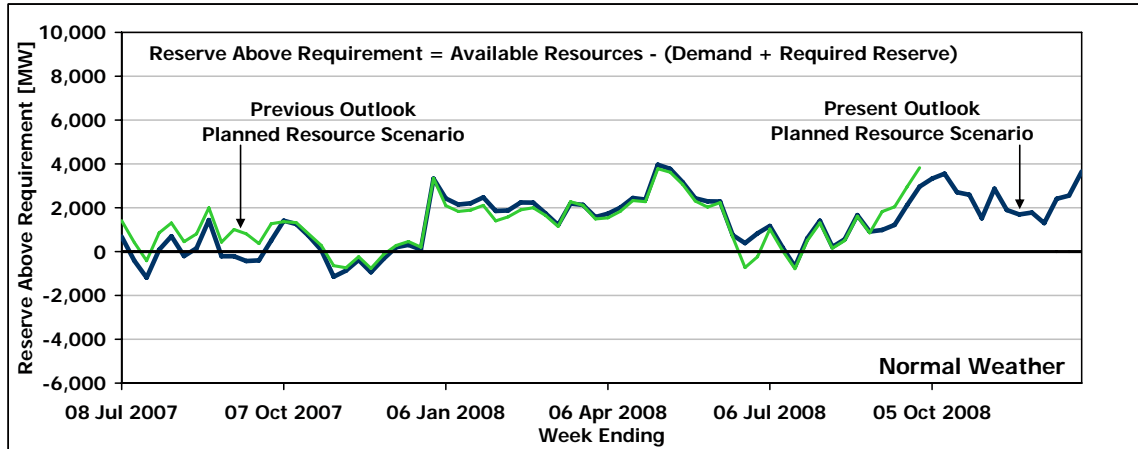
Notes to Table 5.3:

1. Installed Resources (MW): This is the total capacity of the generation resources in Ontario assumed to be installed at the time of the summer and winter peaks in the 18 month time span. Initially, this value includes all generators registered to participate in the IESO-administered markets at the beginning of the 18 month study period. Additional generation capacity that was assumed under the applicable resource scenario is progressively included, according to the estimated in-service dates.
2. Imports (MW): Represents the amount of external capacity considered to be delivered to Ontario.
3. Total Resources (MW): This is the sum of Installed Resources (line 1) and Imports (line 2).
4. Total Reductions in Resources (MW): These reductions represent the sum of generator deratings, generator planned outages, generation limitations due to transmission interface constraints, generation constraints due to transmission outages/limitations and allowance for generation capability levels below rated installed capacity.
5. Demand Measures: This is the amount of demand assumed available to be reduced, under each resource scenario.
6. Available Resources (MW): This equals Total Resources (line 3) minus Total Reductions in Resources (line 4) plus Demand Measures (line 5).

Weekly Adequacy Assessments

Figure 5.3 provides a comparison between the forecast Reserve Above Requirement values in the present Outlook and the forecast Reserve Above Requirement values in the previous Outlook published on April 10, 2007.

Figure 5.3 Reserve Above Requirement: Planned Resource Scenario with Present Outlook vs. Previous Outlook



5.4 Resource Adequacy Risks

The forecast reserve levels for both the Firm Resource Scenario and the Planned Resource Scenario should be assessed bearing in mind the risks discussed below.

5.4.1 Extreme Weather

The Firm Resource Scenario and the Planned Resource Scenario are based on the assumption of normal (average) weather. However, peak demands in both summer and winter typically occur during periods of extreme weather. Unfortunately, the occurrence and timing of extreme weather is impossible to accurately forecast far in advance. As a result, the impact of extreme weather is modeled probabilistically in the calculation of the required resources for each week of the study period. The impact of extreme weather was demonstrated in the first week of August 2006, when Ontario established an all-time record demand of 27,005 MW. Over 3,000 MW of this demand was due to the higher than average heat and humidity.

In order to illustrate the impact of extreme weather on forecast reserve levels during the Outlook period, both the Firm Resource Scenario and the Planned Resource Scenario were re-calculated assuming extreme weather in each week instead of normal weather. The probability of this occurring in every week is very small; however the probability of an occurrence in any given week is greater (about 2.5 percent). When one looks at the entire summer or winter periods, the expectation of at least one period of extreme weather becomes very likely.

The magnitude of resource deficiencies, under extreme weather (as seen earlier in Figures 5.1 and 5.2), clearly illustrates there are circumstances under which reliance on a combination of interconnected supply, rejection of planned generator maintenance or emergency actions may be likely. This emphasizes the continued need for reliable supply and demand response within Ontario.

5.4.2 New Resource Risks

For the 18 month period under study, the improving demand-supply situation, seen mainly in the Planned Resource Scenario, is dependent on the additional generation, conservation and demand measures coming into service as forecast. Some of the risks the projects face are regulatory approvals, construction delays and untimely equipment deliveries by suppliers.

Many timely regulatory approvals are required for a significant number of the new supply projects and transmission enhancements required in a short period of time. Some delays have already been experienced and others are growing in potential. The development of expedited, but thorough, approvals processes is needed to ensure timely completion of the new facilities.

5.4.3 Extensions to Generator Planned Outages

A number of large generating units are scheduled to return to service from outage prior to summers 2007 and 2008 and winter 2007/2008. Meeting these schedules is critical to maintaining adequate reserve levels. Delays in returning generators to service from maintenance outages could lead to reliance on imports and/or cancellation of planned generator outages.

In the event that generator outages must be delayed due to reliability concerns, it will be necessary for outages to be rescheduled to a more suitable time period. However outage rescheduling could stretch the ability of generator owners/operators to accommodate larger amounts of outages over shorter time periods and may increase forced outage occurrences. Operational experience so far indicates generator owners are usually able to adapt their outage plans. With the transition from winter peaking to summer peaking over the last ten years Ontario experienced several years where the dual peaking nature of the Ontario system (roughly equivalent peaks in winter and summer) meant that outages must be scheduled in shorter spring and fall periods. Inevitably this meant that some long duration outages had to be scheduled into the start of the peak seasons, creating the potential that any extensions of these outages occur when the generation is most needed. As the differential grows between the summer and winter peaks and as new supply is added to meet these summer peaks, more room can be expected to permit planned outages over the winter period.

5.4.4 Higher than Forecast Generator Unavailability

IESO resource adequacy assessments include a probabilistic allowance for random generator forced outages based on generator reliability information provided by market participants, or on industry-wide data for similar facilities. Along with weather-related demand impacts, the impact of generator forced outages is included in the determination of required resources.

5.4.5 Lower than Forecast Hydroelectric Resources

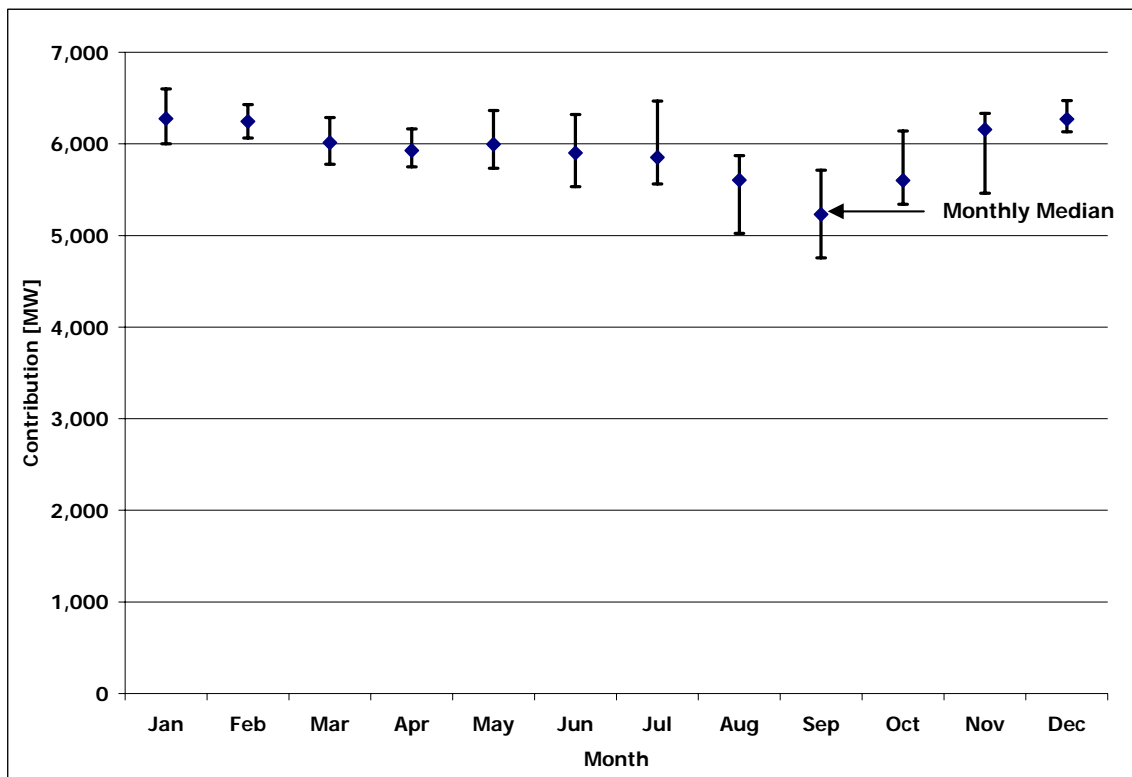
IESO resource adequacy assessments include hydroelectric generation outputs based on median historical values of hydroelectric production plus operating reserve during weekday peak demand hours and energy capability provided by market participants. The amount of available hydroelectric generation is greatly influenced both by water-flow conditions on the respective river systems and by the way in which water is utilized.

Water-flow conditions are primarily influenced by the amount of precipitation received. To accurately forecast precipitation amounts far in advance is little better than chance. Drought

conditions over some or all of the study period would lower the amount of generation available from hydroelectric resources. Low water conditions can result in significant challenges to maintaining reliability, as was experienced in the summer of 2005.

A review of historical data for hydroelectric resource contributions from May 1, 2002 to April 30, 2007 shows that the monthly median contribution can vary significantly by year. For example, over the past 5 years, the median hydro contribution for all weekdays in September was 5,231 MW, but in 2005, the median hydro contribution was as low as 4,756 MW, and in 2004, the median hydro contribution was as high as 5,714 MW. Figure 5.1 shows a range for all calendar months to provide a sense of hydroelectric variability. The range presented is the range of median values for a given timeframe. If we consider different days of the month, the variation in hydro contributions is even greater than the variation in the monthly medians shown here.

Figure 5.4 Variation in Hydro Monthly Median Contribution at the Time of Weekday Peak



5.4.6 Wind Resource Risks

Wind generator output varies on a continuous basis due to the variability of wind. This Outlook assumes that 10% of the installed capacity of wind power generators is available at the time of the weekly peak. There is a risk that wind power output could be less than 10% at the time of the weekly peak if:

- the wind isn't blowing, or
- extreme cold weather or high wind speeds necessitate that wind generator output be curtailed to prevent equipment damage (these conditions are expected to be rare).

The geographic diversity of Ontario wind resources, as levels increase, should mitigate some of the risk associated with wind speed variability.

IESO is currently examining wind issues with stakeholders in the Wind Power Integration Working Group (SE-29). The assumed capacity factor at the time of the peak is an issue this stakeholdering process will address.

5.4.7 Capacity Limitations

There is a risk that any given generator may not be capable of producing the maximum capacity that the market participant has forecast to be available at the time of peak demand. There may be several reasons for these differences.

Forecast models include an equivalent forced outage rate that is intended to capture the random nature of generator capacity limitations, deratings, and forced outages. There is a risk that actual outages and deratings may be higher than forecast, and there is also a risk that certain types of deratings or outages may not be completely random. Some outages and deratings, such as environmental limitations, may be more likely to occur at roughly the same time as the extreme weather conditions which drive peaks in demand.

5.4.8 Transmission Constrained Resource Utilization

There is a risk that transmission constraints occur more often than expected, or have greater impact than expected on the ability to deliver generation to load centres. A limited number of transmission limitations are modeled. There is a risk that certain transmission limitations, which may not be modeled, may have an unforeseen impact. Similarly, transmission equipment failures could occur which significantly impact the utilization of resources for the period, until repairs are made. This is particularly true for large transformers whose repair or replacement time can be much longer than for transmission lines. There is also a risk that these limitations may not be due to completely random outages but can occur under the same conditions which create high demand. For example periods of low wind combined with hot weather not only cause higher demands but also result in lower transmission capability. This can affect the utilization of internal generation and imports from neighbouring systems. Transmission constraints that result from loop flows can be particularly hard to predict because they result not only from the conditions within Ontario but from the dynamic transactions that are taking place within and between other markets.

During high demand periods, the availability of high-voltage capacitors and the capability of generators to deliver their full reactive capability also become critically important to permit the higher power transfers that are required. Outages or de-ratings to these reactive resources can restrict power transfer from generators and imports, and make it difficult to satisfy the peak demands.

5.4.9 Failure of Import Transactions

There is a risk that import transactions scheduled with neighbouring markets fail to be delivered. These failures represent expected supply that is suddenly not available in real-time. The failures are especially problematic due to the timing and size of the failures. However, since the implementation of the Day Ahead Commitment Process in June 2006, the import failure rate has decreased significantly.

5.4.10 Conservation and Demand Management

There is a risk associated with conservation and demand management in both the timing and the levels they represent. Failure to meet the targeted levels at the prescribed time would lead to higher levels of demand than identified in the PRS. The FRS allows us to study system reliability without those reductions.

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6.0 Transmission Reliability Assessment

This section provides an assessment of the reliability of the Ontario transmission system.

6.1 Transmission Projects

The IESO relies on the transmitters to provide information on the transmission projects that are planned for completion within the 18 month period under study. The complete list of major transmission projects is shown in Appendix B. The list also includes some projects with in service dates just outside the period under study but which require major system outages during the study period. The list includes only the transmission projects that are considered to provide significant improvement to the system reliability. Minor transmission equipment replacements or refurbishments are excluded. For projects assessed or being assessed under the Connection Assessment and Approval process, the assigned identification number is included for cross referencing.

Additional information regarding the transmission projects that have been assessed by the IESO can be found at the IESO's Connection Assessments web page, at the following location:

<http://www.ieso.ca/imoweb/connAssess/ca.asp>.

6.2 Planned Transmission Outages

A principal purpose of the transmission reliability assessment is to forecast any reduction in transmission capacity brought about by specific transmission outages. For a major transmission interface or interconnection, the reduction in transmission capacity due to an outage condition can be expressed as a change in the base flow limit associated with the interface or interconnection.

Another purpose of the transmission reliability assessment is to identify the possibility of any security related events on the IESO controlled grid that could require contingency planning by market participants or by the IESO. As a result, the transmission outages are reviewed to identify transmission system reliability concerns and to highlight those outages that should be rescheduled or changed. As an example, a change to an outage may include rescheduling the outage, reducing the scheduled duration or reducing recall time.

The assessment of transmission outages will also identify any resources that have potential or are forecast to be constrained due to transmission outage conditions. The identification of a constrained resource is generally not reflected in the assessment of weekly resource adequacy, which is detailed in Section 5.1, since there is typically sufficient outage scheduling flexibility to avoid constraining off resources when such resources are needed for reliability. Transmitters and generators are expected to have a mutual interest in developing an ongoing arrangement to coordinate their outage planning activities. Transmission outages that may affect generation access to the IESO controlled grid should be coordinated with the generator operators involved, especially at times when the forecast of reserve is deficient. Under the Market Rules, where the scheduling of planned outages by different market participants conflicts such that both or all outages cannot be approved by the IESO, the IESO will inform the affected market participants and request that they resolve the conflict. If the conflict remains unresolved, the IESO will determine which of the planned outages can be approved according to the priority of each

planned outage as determined by the Market Rules detailed in Chapter 5, Sections 6.4.13 to 6.4.18. For this Outlook, transmission outage plans submitted to the IESO's Integrated Outage Management System (IOMS) as of April 23, 2007 were used.

The IESO's assessment of the impact of the transmission outage plans is shown in Appendix C, Tables C1 to C10. In these tables, each element is assessed individually by indicating the possible impacts and the reduction in transmission interface and/or interconnection limits. Where multiple outages are scheduled during the same period, the combined effect of all outages on the reduction in transmission interface and/or interconnection limits is presented. Where multiple outages are scheduled during the same period and reliability is affected the IESO requests the transmitter to reschedule some of the outages. The methodology used to assess the transmission outage plans is described in the IESO document titled "Methodology to Perform Long Term Assessments" (IESO_REP_0266).

A number of the transmission outages planned within the timeframe of this Outlook are judged to have a material impact on the overall reliability of the IESO controlled grid as indicated in Appendix C. Specifically, the multiple outages related to Lambton and Sarnia-Scott station reconfigurations and refurbishments scheduled for the fall of 2007 will result in a significant reduction in FABC limit, BLIP limit and NBLIP limit as well as a reduction of 450 MW on the import capability of the Ontario - Michigan interconnection. Most of these outages are not recallable. Transmission outages in the Ottawa area, related to the first phase of the Ontario - Québec high voltage direct current interconnection will result in a small reduction in Flow into Ottawa (FIO) limit.

An assessment of the scheduled generation outages in conjunction with the transmission outages and the projected capability of the transmission interfaces and the inter-ties shows that the transmission system will be adequate to supply the load forecast for the Outlook period.

Outage plans submitted after April 23, 2007 by Hydro One include a request for long duration outages associated with one or two Ontario to New York interconnection circuits at Niagara, for the spring and fall of 2008. The outages are required by the New York Power Authority (NYPA) to allow dam re-surfacing to take place at NYPA's Lewiston facilities. It is expected that the Ontario import capability will be reduced during these outages. Due to the short notice, the extent of the reduction and effect on reliability could not be completed for this Outlook and will be addressed in detail in the next 18 Month Outlook.

The assessment of transmission outages for this Outlook has been limited to those outages with a scheduled duration of greater than five days or to those outages associated with a project where there is a significant collection of outages which have a combined scheduled duration of greater than five days. The IESO recognizes that there are expected to be additional outage requirements and/or changes as time approaches the Outlook study period and that transmission capacity will be impacted by outages with a scheduled duration of five days or less. Prior to approving and releasing an outage, the IESO will reassess the outage for potential system impacts, taking into account all current and forecasted conditions.

The large number of system changes identified to be completed in this 18 Month Outlook will require a substantial number of planned outages to incorporate the new facilities. A number of the transmission outages planned within the timeframe of this Outlook are judged to have a material impact on the overall reliability of the IESO controlled grid but the transmission system will be adequate to supply the load forecast for the Outlook period.

6.3 Load Supply Enhancements

The electricity demand growth experienced in Ontario in the last decade has resulted in a number of area loads reaching or exceeding the capability of the existing transformer stations. To address this problem and provide additional transformer capacity for future load growth, Hydro One and other distributors have initiated plans to build new transformer stations and replace existing transformers where appropriate. Eleven new and upgraded load supply transformer stations will be placed in service during the timeframe of this Outlook and shortly after.

Connection assessments performed by the IESO concluded that the new and upgraded transformer stations will provide relief to the existing stations, some of which are presently overloaded, and will improve the supply to various load areas. In some cases the IESO found that the local transmission system may be reaching its capability and identified the need for additional transmission reinforcements and installation of local voltage support equipment. In response to these findings Hydro One initiated the installation of reactive compensation at a number of locations in the system. All these projects are listed in Appendix B of this report.

The implementation of these projects will provide considerable improvements to the load supply reliability beyond the timeframe of this Outlook.

6.4 Adequacy of the Existing Transmission System

The Ontario transmission system is expected to be adequate to supply the 2007 and 2008 demand under forecast conditions.

IESO Outlooks identify various areas of the IESO controlled grid where the projected extreme weather loading is expected to approach or exceed the capability of the transmission facilities in the planning period. This could result in congestion of low priced resources that must be replaced by higher priced resources, and would increase costs to market loads. Where the loading was projected to exceed the capability of the transmission facilities, there is also an increased risk of load interruptions.

IESO continues to work with Hydro One and other Ontario transmitters, to identify the highest priority transmission needs, and to ensure that those projects whose in service dates are at risk are given as much priority as is practical, especially those addressing reliability needs for summer 2007 and summer 2008. IESO has also been working closely with the OPA to specify the locations, timing and minimum generation requirements to satisfy reliability standards.

For summer 2007 and 2008, the following areas of the grid are expected to be improved over last summer, and to provide an increased level of reliability.

6.4.1 Toronto and Surrounding Area

Recently, Sithe Global announced delays to Goreway GS that mean capacity that had been planned to be operating for this summer and for the latter half of 2008 is not expected to be available. For the summer forecast conditions without Goreway GS in service, the projected power flows over the Trafalgar, Claireville and Cherrywood autotransformers, are approaching but not exceeding the maximum station capability. Although the maximum capability for these stations is not projected to be exceeded, their spare capability for extreme weather conditions is very low. For example, the Claireville station is the highest loaded transformer station supplying about 28% of the Toronto zone summer peak load. With all transformers in service the station

loading is not expected to exceed the continuous station capability even for extreme weather conditions for the period of this Outlook. However, the continuous station capability will be exceeded if one transformer is out of service, but the loading will be within the maximum station capability. This capability is only available for a limited time. If more than one transformer is forced out of service at any of these three stations excess loading of the station may occur. The additional loss of a Pickering unit would place more stress on the Cherrywood transformers.

The Middleport and Parkway autotransformers are adequate to supply the load forecast within the timeframe of this Outlook.

The Portlands Energy Centre Phase One is scheduled for completion before summer 2008. Timely completion of this project will alleviate possible future overloads of the Manby TS and Leaside TS transformers.

Completion by Hydro One of the John TS to Esplanade TS link by the spring of 2008 will also enhance supply reliability to central Toronto by increasing the capability to transfer some loads from their normal supply east of the city, to an alternate supply from the west, and vice versa.

A high-voltage shunt capacitor at Richview TS suffered significant damage at the beginning of 2007. As a result of its subsequent investigation, Hydro One imposed temporary restrictions on the use of high voltage shunt capacitors across the province. Remedial actions that enable the capacitors to return to operation have been implemented except for the one that was damaged. The damaged Richview shunt capacitor is expected to be available at half of its 410 Mvar capacity by the middle of July 2007.

The IESO expects to be able to supply the extreme weather forecast demand with the Richview shunt capacitor out of service and existing reactive restrictions at Pickering and Darlington, but the grid might be stressed at times.

In the York Region, the transformer station capacity in the Newmarket and Aurora area has been exceeded due to the rapidly growing loads. There is an immediate need for a new transformer station in the area. Hydro One plans to have a new transformer station in service before the end of 2009. The immediate needs will be addressed by load transfers, increasing the equipment operating ratings, and by incentives for demand response programs in the area.

6.4.2 Beck-Middleport-Hamilton/Burlington Area

The situation with the Queenston Flow West project has not changed since the last Outlook. The completion date for transmission reinforcement between Niagara region into the Hamilton-Burlington area continues to be delayed. The limitations affect both the use of available Ontario generation and imports into the province, particularly during hot weather, high demand periods.

Once in service the reinforcement project will increase the capability of the transmission system connecting the Niagara River generation at Queenston to the grid in the Hamilton area by about 800 MW. This enhancement will permit increased imports from New York of at least 350 MW, and up to 800 MW depending on the load and generation dispatch in Ontario.

Limitations associated with the Burlington TS, previously identified by the IESO, are to be resolved partly before summer 2008 and completely by the end of 2008. This work will alleviate concerns related to the ability of the transmission system to supply the Burlington area loads.

6.4.3 Woodstock Area

The first phase of a major manufacturing development in the Woodstock area is planned in service by summer 2007. The new load will increase the stresses on the transmission which might result, during extreme weather conditions, in very low voltages in the area.

To alleviate these concerns Hydro One is planning to add a second supply point to the area by extending the 230 kV transmission lines from Ingersoll to Woodstock area and installing a new transformer station. This plan will provide an increased level of supply reliability and support further load growth in the area.

6.4.4 St. Lawrence to Hinchinbrooke and Ottawa Area

The 1,250 MW interconnection between Hawthorne TS in Ontario and Outaouais station in Québec is scheduled for completion by March 31, 2009. Extensive transmission outages are underway to facilitate the construction of the 230 kV double circuit line from Hawthorne to the border, planned for completion by November 2008. The new interconnection will be accompanied by a new Special Protection System (SPS) to be installed at St. Lawrence TS and Hawthorne TS. The new SPS will maximize simultaneous imports from Québec and New York while maintaining the functionality of the existing St. Lawrence SPS.

The IESO entered into a Reliability Must Run (RMR) Contract with OPG for Lennox GS until the end of September 2007. Studies performed by the IESO indicated that there could be significant adverse local area reliability impacts if Lennox is removed from the IESO-controlled grid and the IESO-administered markets without adequate replacement. When the new interconnection with Québec is completed (outside the timeframe of this Outlook), the resulting transmission improvements in the Ottawa area may reduce or eliminate the reliance on Lennox for the local area need. However, the capability of the station is critical to provincial resource adequacy and must be retained or replaced. This resource adequacy requirement cannot be achieved through an RMR under the current Market Rules. The OPA has notified the IESO that it will undertake development of a solution to the Lennox requirements. Meanwhile the IESO has begun the process towards establishing a subsequent RMR contract with OPG for another year's duration.

6.4.5 Lambton-Sarnia Generation

To prepare the power system to reliably incorporate additional generation facilities around the Lambton area, including the St. Clair Power and Greenfield Energy Centre projects, extensive work needs to be completed at the Lambton switchyard. The modifications are required to connect the new generation facilities and to manage the expected increase in short circuit levels when new generation facilities at St. Clair Power and Greenfield Energy Centre begin their commissioning activities while generating units at Lambton continue to operate. To complete the work on time, a large volume of equipment outages must proceed as scheduled.

Examination of outages in this area have revealed several days when transmission work requires specific Lambton generating units to be off line, thus reducing the available generation to supply Ontario demand. Specific transmission outages that are expected to materially restrict Lambton generation have been reflected in lower availability of Lambton generation. The Reserve Above Requirement values, shown earlier in the Outlook, are lower, as a result.

Major concerns were not identified with respect to the adequacy of the transmission system to supply the load or the reduced capability of the Michigan to Ontario interconnection for the period of these outages.

6.4.6 Michigan Interconnection

Phase angle regulators (PARs) are installed on the Michigan - Ontario interconnection but are not available to regulate flows except in emergencies, pending agreement by the International Transmission Company in Michigan to permit full regulation.

The inability to regulate flows combined with limiting ratings on the PAR equipment can result in significant congestion of imports from Michigan. This was experienced in summer 2005. Before summer 2006, the IESO, the Midwest ISO, Hydro One and International Transmission Company, agreed to temporarily bypass the phase angle regulators for normal operation until an agreement is reached to make full use of their regulating capability. Bypassing the PARs increases Ontario's transfer capability to and from Michigan by 300 to 350 MW in the summer and by about 400 MW in the winter.

Full regulating capability on the Michigan interface combined with increased import capability from the Niagara direction following completion of the Niagara expansion project, will provide a significant increase in the combined import capability from New York and Michigan. It is uncertain whether these improvements will occur within the period covered by this report.

6.4.7 Mississagi to Hanmer

The transmission corridor east of Mississagi has been experiencing increased congestion due to the connection of the 200 MW Prince Park Wind Farm and the unbottling of Brookfield generation following the completion of the Great Lakes Power (GLP) 230 kV transmission reinforcement between Wawa TS and Third Line TS. It is expected that congestion will increase even further when the recently contracted Algoma Energy co-generation project is complete in mid 2009.

For the near-term, the IESO has recommended that the existing Mississagi TS and Algoma TS generation rejection schemes be enhanced as soon as possible to unbottle the generation west of Mississagi and eliminate the congestion over this transmission interface. Hydro One is planning to implement the required modifications before the end of 2008

6.4.8 Niagara 25 Hz System

In January 2007, National Grid, a transmission entity in the United States, informed IESO it had retired the US portion of the Niagara 25 Hz system, reducing 25 Hz load served from Ontario and paving the way for the retirement of some supporting transmission facilities at the Sir Adam Beck 1 Generating Station. This will leave two generating units and the frequency changer to supply the two remaining Ontario customers on this system. The IESO advised its 25 Hz customers in 2005 that the 25 Hz supply would be retired in April 2009 to address declining equipment reliability and market inefficiencies of the 25 Hz system. The IESO meets regularly with 25 Hz stakeholders to assess progress towards this objective.

- End of Section -

7.0 Conclusions

The following conclusions are based on the results of the assessment carried out for this Outlook.

Resource Adequacy

- Under the Planned Resource-Normal Weather Scenario, forecast reserves within Ontario are sufficient to meet requirements for 65 of 78 weeks in the study period. Reserves are forecast to be below requirements for 13 weeks of the Outlook timeframe. Where this situation occurs, Ontario may need to rely on external supplies. During periods where planned maintenance is a contributor to lower reserves, some planned generator outages are at risk of cancellation by the IESO, for reliability reasons, depending on their priority and the resource adequacy situation at the time their approval is being sought. Opportunities will exist for additional planned generator maintenance and exports in the other weeks of the Outlook period where reserves exceed requirements. It is expected that some generator owners will reschedule their outages in response to this Outlook.
- Under the Firm Resource-Normal Weather Scenario, the reserves are forecast to be below requirements for 25 weeks of the Outlook timeframe.
- Extreme weather during the peak periods will result in significantly increased reliance on imports to supplement Ontario generation and higher potential for the IESO to reject planned outages and use emergency operating procedures.
- Results of the resource adequacy assessment are summarized in the matrix below. The different shadings are intended to suggest the degree of concern regarding the supply/demand situation under each resource-weather scenario combination.

	Normal Weather Scenario	Extreme Weather Scenario
Planned Resource Scenario	<ul style="list-style-type: none"> - there are 13 weeks when reserves are lower than required (planned outages at risk or imports potentially required) - opportunities for additional outages/exports exist in most other weeks 	<ul style="list-style-type: none"> - many planned outages at risk - imports required during some peak periods - higher risk of requiring emergency operating procedures
Firm Resource Scenario	<ul style="list-style-type: none"> - there are 25 weeks when reserves are lower than required (planned outages at risk or imports potentially required) - opportunities for additional outages/exports exist in many other weeks 	<ul style="list-style-type: none"> - many planned outages at risk - imports required during some peak periods - higher risk of requiring emergency operating procedures

- The magnitude of resource deficiencies under both normal and extreme weather emphasizes the continued need for additions of reliable supply, conservation and demand measures within Ontario.

- For the 18 month period under study, the improved demand-supply situation for the Planned Resource Scenario is dependent on the additional generation, conservation and demand measures coming into the market as forecast.
- A number of large generating units are scheduled to return to service from outage prior to the summers 2007 and 2008 and winter 2007/08. Meeting these planned outage schedules is critical to maintaining adequate reserve levels over the peak seasons.
- The reserves are positive during the entire winter 2007/08 period allowing opportunities for additional generator outages. Cooling load growth, combined with minimal growth in heating load has led to the transition from winter peaking to summer peaking over the last ten years.
- High generator unavailability, whether caused by higher forced outage rates or delays in returning generators to service, could lead to greater reliance on imports. Under these circumstances, opportunities for planned outages, especially during the peak summer period, would be limited. The IESO is currently monitoring hydroelectric contributions to supply, which are running two percent to six percent below the five year median. Reserve margins should be adequate to cover the risk of a continuation or exacerbation of this trend.
- The IESO entered into a Reliability Must Run Contract with OPG for Lennox GS until the end of September 2007. IESO studies indicate that there could be significant adverse local area reliability impacts if Lennox were removed from the grid without adequate replacement. When the new interconnection with Québec is completed (outside the timeframe of this Outlook), the resulting transmission improvements in the Ottawa area may reduce or eliminate the reliance on Lennox for local area need. However, the capability of the station is critical to provincial resource adequacy and must be retained or replaced.
- Over the 18 month period under study, the Northeast Power Coordinating Council resource adequacy criterion is expected to be met. As permitted to meet the criterion, the IESO forecast considers periodic reliance on interconnection benefits and potential use of other operating actions including outage rescheduling and emergency operating procedures.
- The historical review of the last eight months is helpful in illustrating two aspects of change being experienced in Ontario: the growing contribution that wind is making, and the decreased reliance on imports for Ontario supply. Both these elements are quite variable, however, and the IESO will continue monitoring and reporting long-term trends.
- The historic hydroelectric forecast has been updated with additional data from January 2006 to April 2007. Due to the influence of adding these recent water conditions, some of the hydroelectric forecast values are lower, particularly in the summer months.

Transmission Adequacy

- The Ontario transmission system is expected to be adequate to supply the 2007 and 2008 demand under forecast conditions.
- A high-voltage shunt capacitor at Richview TS suffered significant damage at the beginning of 2007 Remedial actions that enable all high voltage shunt capacitors to return to normal operations have been implemented except for the one that was damaged. The IESO expects to be able to supply the extreme weather forecast demand and maintain adequate system voltages with the Richview high voltage shunt capacitor out of service and existing reactive restrictions at Pickering and Darlington but the grid might be stressed at times.

- Recently, Sithe Global announced delays to Goreway GS that mean capacity that had been planned to be operating for this summer and for the latter half of 2008 is not expected to be available. For the summer forecast conditions without Goreway GS in service, the projected power flows over the Trafalgar, Claireville and Cherrywood autotransformers, are approaching but not exceeding the maximum station capability.
- Completion by Hydro One of the John Transformer Station (TS) to Esplanade TS link by the spring of 2008 will also enhance supply reliability to central Toronto by increasing the capability to transfer some loads from their normal supply east of the city, to an alternate supply from the west, and vice versa.
- The Queenston Flow West project continues to be delayed. Once in service it will increase the capability of the transmission system connecting the Niagara River generation at Queenston to the grid in the Hamilton area by about 800 MW. It will permit increased imports from New York of at least 350 MW, and up to 800 MW depending on the load and generation dispatch in Ontario.
- The 1,250 MW interconnection between Hawthorne TS in Ontario and Outaouais station in Québec is scheduled for completion by March 31, 2009. Extensive transmission outages are underway to facilitate the construction of the 230 kV double circuit line from Hawthorne to the border, planned for completion by November 2008.
- Extensive work needs to be completed at the Lambton switchyard to connect the new St. Clair Power and Greenfield Energy Centre generation projects. To complete the work on time, a large volume of equipment outages must proceed as scheduled, or risk delays to the replacement generation for Lambton coal capacity. Some of these outages will restrict the output of the existing Lambton generation, reducing the resources available to supply Ontario demand during those periods.
- Phase angle regulators (PARs) are installed on the Michigan Ontario interconnection but are temporarily bypassed until an agreement is reached to make full use of their regulating capability.
- Hydro One will enhance the existing Mississagi TS and Algoma TS generation rejection schemes by the end of 2008 to unbottle the generation west of Mississagi and eliminate the congestion over the transmission corridor East of Mississagi.

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Appendix A Resource Adequacy Assessment Details

Table A1 Assessment of Resource Adequacy: Normal Weather,
Firm Resource Scenario

Week Ending Day	Total Resources MW	Total Reductions in Resources MW	Demand Measures MW	Available Resources MW	Required Resources MW	Available Reserve %	Available Reserve MW	Required Reserve %	Required Reserve MW	Reserve Above Requirement MW
08-Jul-07	31,214	3,339	290	28,165	27,565	16.7	4,026	14.2	3,426	600
15-Jul-07	31,214	3,330	290	28,174	28,667	12.8	3,204	14.8	3,697	-493
22-Jul-07	31,214	3,261	290	28,243	29,513	10.7	2,718	15.6	3,988	-1,270
29-Jul-07	31,214	3,271	290	28,233	28,237	14.3	3,534	14.3	3,538	-4
05-Aug-07	31,214	3,545	290	27,959	27,507	16.6	3,983	14.7	3,531	452
12-Aug-07	31,214	3,545	290	27,959	28,405	13.0	3,224	14.8	3,670	-446
19-Aug-07	31,214	3,545	290	27,959	28,054	14.3	3,506	14.7	3,601	-95
26-Aug-07	31,214	3,545	290	27,959	26,764	20.2	4,690	15.0	3,495	1,195
02-Sep-07	31,214	5,051	290	26,453	26,910	12.1	2,854	14.0	3,311	-457
09-Sep-07	31,211	5,572	290	25,929	26,384	14.6	3,293	16.6	3,748	-455
16-Sep-07	31,211	6,593	290	24,908	25,584	13.7	3,002	16.8	3,678	-676
23-Sep-07	31,211	7,473	290	24,028	24,676	13.7	2,903	16.8	3,551	-648
30-Sep-07	31,211	7,907	290	23,594	23,324	14.6	3,012	13.3	2,742	270
07-Oct-07	31,211	7,872	290	23,629	22,467	19.8	3,897	13.9	2,735	1,162
14-Oct-07	31,211	7,872	290	23,629	22,632	18.3	3,660	13.3	2,663	997
21-Oct-07	31,211	7,937	290	23,564	23,098	15.5	3,170	13.3	2,704	466
28-Oct-07	31,211	8,011	290	23,490	23,673	13.2	2,737	14.1	2,920	-183
04-Nov-07	31,238	8,351	290	23,177	24,569	7.5	1,624	14.0	3,016	-1,392
11-Nov-07	31,238	7,910	290	23,618	24,749	8.4	1,821	13.5	2,952	-1,131
18-Nov-07	31,238	6,869	290	24,659	25,303	10.5	2,344	13.4	2,988	-644
25-Nov-07	31,238	6,818	290	24,710	25,915	8.4	1,917	13.7	3,122	-1,205
02-Dec-07	31,238	6,302	290	25,226	25,823	10.6	2,423	13.2	3,020	-597
09-Dec-07	31,238	4,970	290	26,558	26,619	12.4	2,928	12.7	2,989	-61
16-Dec-07	31,238	4,431	290	27,097	27,044	13.1	3,137	12.9	3,084	53
23-Dec-07	31,238	4,335	290	27,193	27,348	12.1	2,928	12.7	3,083	-155
30-Dec-07	31,238	2,925	290	28,603	25,522	27.7	6,210	14.0	3,129	3,081
06-Jan-08	31,238	2,862	290	28,666	26,885	20.7	4,913	13.2	3,132	1,781
13-Jan-08	31,248	2,830	290	28,708	27,207	19.1	4,601	12.9	3,100	1,501
20-Jan-08	31,248	2,310	290	29,228	27,708	19.2	4,712	13.0	3,192	1,520
27-Jan-08	31,248	2,286	290	29,252	27,463	20.8	5,038	13.4	3,249	1,789
03-Feb-08	31,248	3,148	290	28,390	27,096	18.4	4,418	13.0	3,124	1,294
10-Feb-08	31,248	3,177	290	28,361	27,126	18.3	4,385	13.1	3,150	1,235
17-Feb-08	31,248	3,170	290	28,368	26,817	19.8	4,695	13.3	3,144	1,551
24-Feb-08	31,248	3,765	290	27,773	26,149	20.1	4,647	13.1	3,023	1,624
02-Mar-08	31,248	3,765	290	27,773	26,719	18.4	4,322	13.9	3,268	1,054
09-Mar-08	31,242	5,052	290	26,481	25,907	17.6	3,967	15.1	3,393	574
16-Mar-08	31,242	5,052	290	26,481	24,938	21.9	4,763	14.8	3,220	1,543
23-Mar-08	31,242	5,527	290	26,006	24,501	21.4	4,588	14.4	3,083	1,505
30-Mar-08	31,242	6,808	290	24,725	23,723	18.8	3,908	14.0	2,906	1,002

Note: The reader should be aware that [Security and Adequacy Assessments](#) are published on the IESO web site on a weekly and daily basis that progressively supersedes information presented in this report.

(Table A1 continued)

Week Ending Day	Total Resources MW	Total Reductions in Resources MW	Demand Measures MW	Available Resources MW	Required Resources MW	Available Reserve %	Available Reserve MW	Required Reserve %	Required Reserve MW	Reserve Above Requirement MW
06-Apr-08	31,242	6,894	290	24,639	23,419	20.3	4,159	14.4	2,939	1,220
13-Apr-08	31,242	6,973	290	24,560	23,064	22.2	4,459	14.7	2,963	1,496
20-Apr-08	31,242	6,521	290	25,012	23,020	24.8	4,964	14.8	2,972	1,992
27-Apr-08	31,242	7,413	290	24,120	22,194	22.4	4,410	12.6	2,484	1,926
04-May-08	31,242	5,365	290	26,168	22,707	33.7	6,592	16.0	3,131	3,461
11-May-08	31,242	5,791	290	25,742	22,433	32.9	6,377	15.8	3,068	3,309
18-May-08	31,242	5,804	290	25,729	22,977	30.3	5,978	16.3	3,226	2,752
25-May-08	31,242	5,295	290	26,238	24,215	25.9	5,404	16.2	3,381	2,023
01-Jun-08	31,242	5,316	290	26,217	24,366	24.0	5,065	15.2	3,214	1,851
08-Jun-08	31,232	4,610	290	26,912	25,339	22.2	4,897	15.1	3,324	1,573
15-Jun-08	31,232	4,100	290	27,422	27,469	14.9	3,548	15.1	3,595	-47
22-Jun-08	31,232	3,374	290	28,148	28,624	13.7	3,382	15.6	3,858	-476
29-Jun-08	31,232	3,236	290	28,286	28,193	16.6	4,017	16.2	3,924	93
06-Jul-08	31,232	3,289	290	28,233	27,815	15.7	3,824	14.0	3,406	418
13-Jul-08	31,232	3,249	290	28,273	28,904	12.1	3,046	14.6	3,677	-631
20-Jul-08	31,232	3,236	290	28,286	29,766	9.7	2,507	15.5	3,987	-1,480
27-Jul-08	31,232	3,239	290	28,283	28,492	13.3	3,329	14.2	3,538	-209
03-Aug-08	31,232	3,440	290	28,082	27,423	16.7	4,017	14.0	3,358	659
10-Aug-08	31,232	3,448	290	28,074	28,636	12.4	3,089	14.6	3,651	-562
17-Aug-08	31,232	3,457	290	28,065	28,285	13.6	3,361	14.5	3,581	-220
24-Aug-08	31,232	3,455	290	28,067	27,103	17.9	4,256	13.8	3,292	964
31-Aug-08	31,232	3,918	290	27,604	27,483	14.1	3,419	13.6	3,298	121
07-Sep-08	31,232	4,628	290	26,894	26,580	17.5	4,005	16.1	3,691	314
14-Sep-08	31,232	5,150	290	26,372	25,834	19.0	4,213	16.6	3,675	538
21-Sep-08	31,232	5,216	290	26,306	24,918	23.1	4,932	16.6	3,544	1,388
28-Sep-08	31,232	5,691	290	25,831	23,560	24.0	5,002	13.1	2,731	2,271
05-Oct-08	31,259	6,203	290	25,346	22,619	27.2	5,417	13.5	2,690	2,727
12-Oct-08	31,259	5,723	290	25,826	22,810	28.0	5,642	13.0	2,626	3,016
19-Oct-08	31,259	6,239	290	25,310	23,123	23.3	4,777	12.6	2,590	2,187
26-Oct-08	31,259	5,754	290	25,795	23,732	23.4	4,885	13.5	2,822	2,063
02-Nov-08	31,259	6,229	290	25,320	24,381	16.5	3,594	12.2	2,655	939
09-Nov-08	31,259	5,553	290	25,996	24,547	18.3	4,027	11.7	2,578	1,449
16-Nov-08	31,259	6,029	290	25,520	25,207	13.6	3,055	12.2	2,742	313
23-Nov-08	31,259	5,549	290	26,000	25,851	13.2	3,035	12.6	2,886	149
30-Nov-08	31,259	5,519	290	26,030	25,855	13.4	3,074	12.6	2,899	175
07-Dec-08	31,265	5,330	290	26,225	26,630	11.0	2,598	12.7	3,003	-405
14-Dec-08	31,265	3,821	290	27,734	26,859	16.4	3,902	12.7	3,027	875
21-Dec-08	31,265	3,276	290	28,279	27,219	17.2	4,143	12.8	3,083	1,060
28-Dec-08	31,265	2,859	290	28,696	26,579	22.1	5,186	13.1	3,069	2,117

**Table A2 Assessment of Resource Adequacy: Normal Weather,
Planned Resource Scenario**

Week Ending Day	Total Resources MW	Total Reductions in Resources MW	Demand Measures MW	Available Resources MW	Required Resources MW	Available Reserve %	Available Reserve MW	Required Reserve %	Required Reserve MW	Reserve Above Requirement MW
08-Jul-07	31,214	3,339	370	28,245	27,565	17.0	4,106	14.2	3,426	680
15-Jul-07	31,214	3,330	370	28,254	28,666	13.2	3,285	14.8	3,697	-412
22-Jul-07	31,214	3,261	370	28,323	29,513	11.0	2,798	15.6	3,988	-1,190
29-Jul-07	31,214	3,271	370	28,313	28,237	14.6	3,614	14.3	3,538	76
05-Aug-07	31,214	3,545	533	28,202	27,507	17.6	4,226	14.7	3,531	695
12-Aug-07	31,214	3,545	533	28,202	28,405	14.0	3,467	14.8	3,670	-203
19-Aug-07	31,214	3,545	533	28,202	28,054	15.3	3,749	14.7	3,601	148
26-Aug-07	31,214	3,545	533	28,202	26,764	21.2	4,933	15.0	3,495	1,438
02-Sep-07	31,214	5,051	533	26,696	26,910	13.1	3,097	14.0	3,311	-214
09-Sep-07	31,211	5,572	533	26,172	26,384	15.6	3,536	16.6	3,748	-212
16-Sep-07	31,211	6,593	533	25,151	25,584	14.8	3,245	16.8	3,678	-433
23-Sep-07	31,211	7,473	533	24,271	24,676	14.9	3,146	16.8	3,551	-405
30-Sep-07	31,211	7,907	533	23,837	23,324	15.8	3,255	13.3	2,742	513
07-Oct-07	31,287	7,940	533	23,880	22,467	21.0	4,148	13.9	2,735	1,413
14-Oct-07	31,287	7,940	533	23,880	22,632	19.6	3,911	13.3	2,663	1,248
21-Oct-07	31,287	8,005	533	23,815	23,097	16.8	3,421	13.3	2,703	718
28-Oct-07	31,287	8,079	533	23,741	23,672	14.4	2,988	14.1	2,919	69
04-Nov-07	31,326	8,432	533	23,427	24,568	8.7	1,874	14.0	3,015	-1,141
11-Nov-07	31,326	7,981	533	23,878	24,747	9.6	2,081	13.5	2,950	-869
18-Nov-07	31,326	6,940	533	24,919	25,299	11.7	2,604	13.4	2,984	-380
25-Nov-07	31,326	6,889	533	24,970	25,912	9.6	2,177	13.7	3,119	-942
02-Dec-07	31,326	6,373	533	25,486	25,820	11.8	2,683	13.2	3,017	-334
09-Dec-07	31,326	5,051	533	26,808	26,617	13.5	3,178	12.6	2,987	191
16-Dec-07	31,326	4,512	533	27,347	27,042	14.1	3,387	12.9	3,082	305
23-Dec-07	31,326	4,416	533	27,443	27,345	13.1	3,178	12.7	3,080	98
30-Dec-07	31,326	3,006	533	28,853	25,522	28.9	6,460	14.0	3,129	3,331
06-Jan-08	31,326	2,903	533	28,956	26,536	23.7	5,547	13.4	3,127	2,420
13-Jan-08	31,336	2,932	533	28,937	26,793	22.1	5,239	13.1	3,095	2,144
20-Jan-08	31,336	2,380	533	29,489	27,287	22.4	5,389	13.2	3,187	2,202
27-Jan-08	31,336	2,389	533	29,480	27,007	24.0	5,714	13.6	3,241	2,473
03-Feb-08	31,336	3,252	533	28,617	26,764	21.0	4,974	13.2	3,121	1,853
10-Feb-08	31,348	3,264	533	28,617	26,736	21.3	5,027	13.3	3,146	1,881
17-Feb-08	31,348	3,253	533	28,628	26,394	23.1	5,375	13.5	3,141	2,234
24-Feb-08	31,348	3,835	533	28,046	25,818	23.0	5,250	13.3	3,022	2,228
02-Mar-08	31,348	3,835	533	28,046	26,303	21.7	5,009	14.2	3,266	1,743
09-Mar-08	31,342	5,123	533	26,753	25,544	20.7	4,580	15.2	3,371	1,209
16-Mar-08	31,342	5,123	533	26,753	24,571	25.3	5,396	15.1	3,214	2,182
23-Mar-08	31,342	5,610	533	26,266	24,130	24.8	5,213	14.6	3,077	2,136
30-Mar-08	31,342	6,903	533	24,973	23,396	21.8	4,477	14.2	2,900	1,577

Note: The reader should be aware that [Security and Adequacy Assessments](#) are published on the IESO web site on a weekly and daily basis that progressively supersedes information presented in this report.

(Table A2 continued)

Week Ending Day	Total Resources MW	Total Reductions in Resources MW	Demand Measures MW	Available Resources MW	Required Resources MW	Available Reserve %	Available Reserve MW	Required Reserve %	Required Reserve MW	Reserve Above Requirement MW
06-Apr-08	31,342	6,985	533	24,891	23,163	23.1	4,662	14.5	2,934	1,728
13-Apr-08	31,342	7,060	533	24,816	22,803	25.0	4,970	14.9	2,957	2,013
20-Apr-08	31,342	6,606	533	25,270	22,827	27.3	5,413	15.0	2,970	2,443
27-Apr-08	31,342	7,484	533	24,392	22,023	24.8	4,853	12.7	2,484	2,369
04-May-08	31,365	5,465	533	26,434	22,470	36.7	7,091	16.2	3,127	3,964
11-May-08	31,365	5,894	533	26,005	22,237	35.6	6,832	16.0	3,064	3,768
18-May-08	31,365	5,912	533	25,987	22,823	32.6	6,386	16.4	3,222	3,164
25-May-08	31,365	5,403	533	26,496	24,063	28.1	5,809	16.3	3,376	2,433
01-Jun-08	31,365	5,425	533	26,474	24,179	26.2	5,503	15.3	3,208	2,295
08-Jun-08	31,624	4,686	533	27,471	25,189	25.9	5,642	15.4	3,360	2,282
15-Jun-08	31,624	4,176	533	27,981	27,230	18.2	4,300	15.0	3,549	751
22-Jun-08	31,624	3,450	533	28,707	28,317	17.1	4,188	15.5	3,798	390
29-Jun-08	31,624	3,345	533	28,812	27,988	19.7	4,732	16.2	3,908	824
06-Jul-08	31,624	3,398	533	28,759	27,594	18.8	4,559	14.0	3,394	1,165
13-Jul-08	31,624	3,358	533	28,799	28,604	15.3	3,822	14.5	3,627	195
20-Jul-08	31,624	3,344	533	28,813	29,500	12.7	3,247	15.4	3,934	-687
27-Jul-08	31,624	3,348	533	28,809	28,199	16.5	4,088	14.1	3,478	610
03-Aug-08	31,624	3,549	533	28,608	27,198	20.0	4,772	14.1	3,362	1,410
10-Aug-08	31,624	3,557	533	28,600	28,392	15.4	3,819	14.6	3,611	208
17-Aug-08	31,624	3,566	533	28,591	28,028	16.7	4,090	14.4	3,527	563
24-Aug-08	31,624	3,564	533	28,593	26,928	21.2	4,994	14.1	3,329	1,665
31-Aug-08	31,624	4,027	533	28,130	27,219	17.3	4,152	13.5	3,241	911
07-Sep-08	31,624	4,736	533	27,421	26,438	20.7	4,699	16.4	3,716	983
14-Sep-08	31,624	5,259	533	26,898	25,679	22.4	4,925	16.9	3,706	1,219
21-Sep-08	31,624	5,292	533	26,865	24,750	26.9	5,691	16.9	3,576	2,115
28-Sep-08	31,624	5,767	533	26,390	23,426	27.8	5,738	13.4	2,774	2,964
05-Oct-08	31,752	6,520	533	25,765	22,434	30.5	6,028	13.7	2,697	3,331
12-Oct-08	31,752	6,140	533	26,145	22,597	30.9	6,177	13.2	2,629	3,548
19-Oct-08	31,752	6,656	533	25,629	22,921	26.1	5,301	12.8	2,593	2,708
26-Oct-08	31,752	6,171	533	26,114	23,526	26.1	5,411	13.6	2,823	2,588
02-Nov-08	31,752	6,646	533	25,639	24,125	19.2	4,131	12.2	2,617	1,514
09-Nov-08	33,087	6,271	533	27,349	24,485	25.9	5,617	12.7	2,753	2,864
16-Nov-08	33,087	6,781	533	26,839	24,947	21.0	4,660	12.5	2,768	1,892
23-Nov-08	33,087	6,295	533	27,325	25,635	20.2	4,584	12.7	2,894	1,690
30-Nov-08	33,087	6,267	533	27,353	25,577	20.7	4,684	12.8	2,908	1,776
07-Dec-08	33,093	6,086	533	27,540	26,246	18.2	4,233	12.6	2,939	1,294
14-Dec-08	33,093	4,602	533	29,024	26,617	23.7	5,557	13.4	3,150	2,407
21-Dec-08	33,093	4,059	533	29,567	27,014	24.3	5,778	13.6	3,225	2,553
28-Dec-08	33,093	3,571	533	30,055	26,409	29.7	6,885	14.0	3,239	3,646

Table A3 Demand Forecast for Firm Resource Scenario

Week Ending Day	Ontario Demand Normal Weather MW	Ontario Demand Extreme Weather MW	Week Ending Day	Ontario Demand Normal Weather MW	Ontario Demand Extreme Weather MW
08-Jul-07	24,139	25,794	06-Apr-08	20,480	22,455
15-Jul-07	24,970	26,651	13-Apr-08	20,101	21,256
22-Jul-07	25,525	27,585	20-Apr-08	20,048	22,271
29-Jul-07	24,699	26,550	27-Apr-08	19,710	22,273
05-Aug-07	23,976	26,611	04-May-08	19,576	22,026
12-Aug-07	24,735	27,497	11-May-08	19,365	22,606
19-Aug-07	24,453	26,728	18-May-08	19,751	22,123
26-Aug-07	23,269	25,971	25-May-08	20,834	22,853
02-Sep-07	23,599	26,033	01-Jun-08	21,152	23,813
09-Sep-07	22,636	25,860	08-Jun-08	22,015	24,631
16-Sep-07	21,906	25,660	15-Jun-08	23,874	25,981
23-Sep-07	21,125	24,922	22-Jun-08	24,766	26,996
30-Sep-07	20,582	23,455	29-Jun-08	24,269	26,643
07-Oct-07	19,732	23,917	06-Jul-08	24,409	26,064
14-Oct-07	19,969	20,643	13-Jul-08	25,227	26,908
21-Oct-07	20,394	21,253	20-Jul-08	25,779	27,840
28-Oct-07	20,753	21,513	27-Jul-08	24,954	26,804
04-Nov-07	21,553	22,145	03-Aug-08	24,065	25,669
11-Nov-07	21,797	22,465	10-Aug-08	24,985	27,748
18-Nov-07	22,315	23,259	17-Aug-08	24,704	26,978
25-Nov-07	22,793	23,716	24-Aug-08	23,811	26,245
02-Dec-07	22,803	24,173	31-Aug-08	24,185	26,296
09-Dec-07	23,630	24,887	07-Sep-08	22,889	26,113
16-Dec-07	23,960	24,901	14-Sep-08	22,159	25,913
23-Dec-07	24,265	25,524	21-Sep-08	21,374	25,175
30-Dec-07	22,393	23,615	28-Sep-08	20,829	23,707
06-Jan-08	23,753	24,722	05-Oct-08	19,929	24,130
13-Jan-08	24,107	25,090	12-Oct-08	20,184	20,781
20-Jan-08	24,516	25,548	19-Oct-08	20,533	21,392
27-Jan-08	24,214	25,382	26-Oct-08	20,910	21,670
03-Feb-08	23,972	25,093	02-Nov-08	21,726	22,312
10-Feb-08	23,976	25,061	09-Nov-08	21,969	22,637
17-Feb-08	23,673	24,690	16-Nov-08	22,465	23,409
24-Feb-08	23,126	24,341	23-Nov-08	22,965	23,884
02-Mar-08	23,451	24,333	30-Nov-08	22,956	24,326
09-Mar-08	22,514	24,046	07-Dec-08	23,627	24,861
16-Mar-08	21,718	23,386	14-Dec-08	23,832	25,088
23-Mar-08	21,418	22,836	21-Dec-08	24,136	25,077
30-Mar-08	20,817	22,294	28-Dec-08	23,510	24,769

Table A4 Demand Forecast Range for Planned Resource Scenario

Week Ending Day	Ontario Demand Normal Weather MW	Ontario Demand Extreme Weather MW	Week Ending Day	Ontario Demand Normal Weather MW	Ontario Demand Extreme Weather MW
08-Jul-07	24,139	25,794	06-Apr-08	20,229	22,131
15-Jul-07	24,969	26,651	13-Apr-08	19,846	20,996
22-Jul-07	25,525	27,585	20-Apr-08	19,857	22,115
29-Jul-07	24,699	26,550	27-Apr-08	19,539	22,107
05-Aug-07	23,976	26,611	04-May-08	19,343	21,872
12-Aug-07	24,735	27,497	11-May-08	19,173	22,452
19-Aug-07	24,453	26,728	18-May-08	19,601	21,952
26-Aug-07	23,269	25,971	25-May-08	20,687	22,706
02-Sep-07	23,599	26,033	01-Jun-08	20,971	23,655
09-Sep-07	22,636	25,860	08-Jun-08	21,829	24,445
16-Sep-07	21,906	25,660	15-Jun-08	23,681	25,788
23-Sep-07	21,125	24,922	22-Jun-08	24,519	26,749
30-Sep-07	20,582	23,455	29-Jun-08	24,080	26,454
07-Oct-07	19,732	23,917	06-Jul-08	24,200	25,855
14-Oct-07	19,969	20,643	13-Jul-08	24,977	26,659
21-Oct-07	20,394	21,253	20-Jul-08	25,566	27,627
28-Oct-07	20,753	21,513	27-Jul-08	24,721	26,571
04-Nov-07	21,553	22,145	03-Aug-08	23,836	25,440
11-Nov-07	21,797	22,465	10-Aug-08	24,781	27,543
18-Nov-07	22,315	23,259	17-Aug-08	24,501	26,776
25-Nov-07	22,793	23,716	24-Aug-08	23,599	26,033
02-Dec-07	22,803	24,173	31-Aug-08	23,978	26,089
09-Dec-07	23,630	24,887	07-Sep-08	22,722	25,946
16-Dec-07	23,960	24,901	14-Sep-08	21,973	25,717
23-Dec-07	24,265	25,524	21-Sep-08	21,174	24,987
30-Dec-07	22,393	23,615	28-Sep-08	20,652	23,537
06-Jan-08	23,409	24,377	05-Oct-08	19,737	23,978
13-Jan-08	23,698	24,681	12-Oct-08	19,968	20,587
20-Jan-08	24,100	25,132	19-Oct-08	20,328	21,187
27-Jan-08	23,766	24,935	26-Oct-08	20,703	21,463
03-Feb-08	23,643	24,763	02-Nov-08	21,508	22,078
10-Feb-08	23,590	24,675	09-Nov-08	21,732	22,393
17-Feb-08	23,253	24,253	16-Nov-08	22,179	23,143
24-Feb-08	22,796	24,010	23-Nov-08	22,741	23,653
02-Mar-08	23,037	23,919	30-Nov-08	22,669	24,032
09-Mar-08	22,173	23,650	07-Dec-08	23,307	24,541
16-Mar-08	21,357	23,013	14-Dec-08	23,467	24,723
23-Mar-08	21,053	22,440	21-Dec-08	23,789	24,730
30-Mar-08	20,496	22,037	28-Dec-08	23,170	24,429

**Table A5 Assessment of Resource Adequacy: Extreme Weather,
Firm Resource Scenario**

Week Ending Day	Total Resources MW	Total Reductions in Resources MW	Demand Measures MW	Available Resources MW	Required Resources MW	Available Reserve %	Available Reserve MW	Required Reserve %	Required Reserve MW	Reserve Above Requirement MW
08-Jul-07	31,214	3,330	290	28,174	29,177	9.2	2,380	13.1	3,383	-1,003
15-Jul-07	31,214	3,330	290	28,174	30,176	5.7	1,523	13.2	3,525	-2,002
22-Jul-07	31,214	3,253	290	28,251	31,268	2.4	666	13.4	3,683	-3,017
29-Jul-07	31,214	3,218	290	28,286	30,059	6.5	1,736	13.2	3,509	-1,773
05-Aug-07	31,214	3,545	290	27,959	30,164	5.1	1,348	13.4	3,553	-2,205
12-Aug-07	31,214	3,545	290	27,959	31,217	1.7	462	13.5	3,720	-3,258
19-Aug-07	31,214	3,545	290	27,959	30,302	4.6	1,231	13.4	3,574	-2,343
26-Aug-07	31,214	3,545	290	27,959	29,420	7.7	1,988	13.3	3,449	-1,461
02-Sep-07	31,214	5,051	290	26,453	29,506	1.6	420	13.3	3,473	-3,053
09-Sep-07	31,211	5,572	290	25,929	29,391	0.3	69	13.7	3,531	-3,462
16-Sep-07	31,211	6,593	290	24,908	29,171	-2.9	-752	13.7	3,511	-4,263
23-Sep-07	31,211	7,473	290	24,028	28,446	-3.6	-894	14.1	3,524	-4,418
30-Sep-07	31,211	7,907	290	23,594	26,679	0.6	139	13.8	3,224	-3,085
07-Oct-07	31,211	7,872	290	23,629	27,226	-1.2	-288	13.8	3,309	-3,597
14-Oct-07	31,211	7,872	290	23,629	23,299	14.5	2,986	12.9	2,656	330
21-Oct-07	31,211	7,937	290	23,564	24,060	10.9	2,311	13.2	2,807	-496
28-Oct-07	31,211	8,011	290	23,490	24,385	9.2	1,977	13.4	2,872	-895
04-Nov-07	31,238	8,351	290	23,177	25,169	4.7	1,032	13.7	3,024	-1,992
11-Nov-07	31,238	7,910	290	23,618	25,478	5.1	1,153	13.4	3,013	-1,860
18-Nov-07	31,238	6,869	290	24,659	26,312	6.0	1,400	13.1	3,053	-1,653
25-Nov-07	31,238	6,818	290	24,710	26,844	4.2	994	13.2	3,128	-2,134
02-Dec-07	31,238	6,302	290	25,226	27,278	4.4	1,053	12.8	3,105	-2,052
09-Dec-07	31,238	4,945	290	26,583	27,958	6.8	1,696	12.3	3,071	-1,375
16-Dec-07	31,238	4,426	290	27,102	27,977	8.8	2,201	12.4	3,076	-875
23-Dec-07	31,238	4,283	290	27,245	28,723	6.7	1,721	12.5	3,199	-1,478
30-Dec-07	31,238	2,889	290	28,639	26,607	21.3	5,024	12.7	2,992	2,032
06-Jan-08	31,238	2,821	290	28,707	27,734	16.1	3,985	12.2	3,012	973
13-Jan-08	31,248	2,821	290	28,717	28,172	14.5	3,627	12.3	3,082	545
20-Jan-08	31,248	2,258	290	29,280	28,717	14.6	3,732	12.4	3,169	563
27-Jan-08	31,248	2,243	290	29,295	28,515	15.4	3,913	12.3	3,133	780
03-Feb-08	31,248	3,114	290	28,424	28,267	13.3	3,331	12.7	3,174	157
10-Feb-08	31,248	3,157	290	28,381	28,226	13.3	3,320	12.6	3,165	155
17-Feb-08	31,248	3,178	290	28,360	27,788	14.9	3,670	12.6	3,098	572
24-Feb-08	31,248	3,765	290	27,773	27,438	14.1	3,432	12.7	3,097	335
02-Mar-08	31,248	3,765	290	27,773	27,675	14.1	3,440	13.7	3,342	98
09-Mar-08	31,242	5,052	290	26,481	27,368	10.1	2,435	13.8	3,322	-887
16-Mar-08	31,242	5,052	290	26,481	26,550	13.2	3,095	13.5	3,164	-69
23-Mar-08	31,242	5,527	290	26,006	25,859	13.9	3,170	13.2	3,023	147
30-Mar-08	31,242	6,808	290	24,725	25,204	10.9	2,431	13.1	2,910	-479

(Table A5 continued)

Week Ending Day	Total Resources MW	Total Reductions in Resources MW	Demand Measures MW	Available Resources MW	Required Resources MW	Available Reserve %	Available Reserve MW	Required Reserve %	Required Reserve MW	Reserve Above Requirement MW
06-Apr-08	31,242	6,894	290	24,639	25,422	9.7	2,184	13.2	2,967	-783
13-Apr-08	31,242	6,958	290	24,575	23,959	15.6	3,319	12.7	2,703	616
20-Apr-08	31,242	6,532	290	25,001	25,278	12.3	2,730	13.5	3,007	-277
27-Apr-08	31,242	7,482	290	24,051	25,037	8.0	1,778	12.4	2,764	-986
04-May-08	31,242	5,365	290	26,168	24,911	18.8	4,142	13.1	2,885	1,257
11-May-08	31,242	5,791	290	25,742	25,541	13.9	3,136	13.0	2,935	201
18-May-08	31,242	5,795	290	25,738	24,942	16.3	3,615	12.7	2,819	796
25-May-08	31,242	5,364	290	26,169	25,795	14.5	3,316	12.9	2,942	374
01-Jun-08	31,242	5,306	290	26,227	26,792	10.1	2,414	12.5	2,979	-565
08-Jun-08	31,232	4,610	290	26,912	27,797	9.3	2,281	12.9	3,166	-885
15-Jun-08	31,232	4,100	290	27,422	29,429	5.6	1,441	13.3	3,448	-2,007
22-Jun-08	31,232	3,374	290	28,148	30,547	4.3	1,152	13.2	3,551	-2,399
29-Jun-08	31,232	3,222	290	28,300	30,127	6.2	1,657	13.1	3,484	-1,827
06-Jul-08	31,232	3,247	290	28,275	29,427	8.5	2,211	12.9	3,363	-1,152
13-Jul-08	31,232	3,222	290	28,300	30,420	5.2	1,392	13.1	3,512	-2,120
20-Jul-08	31,232	3,234	290	28,288	31,512	1.6	448	13.2	3,672	-3,224
27-Jul-08	31,232	3,208	290	28,314	30,302	5.6	1,510	13.1	3,498	-1,988
03-Aug-08	31,232	3,463	290	28,059	28,997	9.3	2,390	13.0	3,328	-938
10-Aug-08	31,232	3,450	290	28,072	31,460	1.2	324	13.4	3,712	-3,388
17-Aug-08	31,232	3,453	290	28,069	30,537	4.0	1,091	13.2	3,559	-2,468
24-Aug-08	31,232	3,477	290	28,045	29,695	6.9	1,800	13.2	3,450	-1,650
31-Aug-08	31,232	3,935	290	27,587	29,747	4.9	1,291	13.1	3,451	-2,160
07-Sep-08	31,232	4,611	290	26,911	29,595	3.1	798	13.3	3,482	-2,684
14-Sep-08	31,232	5,108	290	26,414	29,378	1.9	501	13.4	3,465	-2,964
21-Sep-08	31,232	5,216	290	26,306	28,508	4.5	1,131	13.2	3,333	-2,202
28-Sep-08	31,232	5,691	290	25,831	26,721	9.0	2,124	12.7	3,014	-890
05-Oct-08	31,259	6,203	290	25,346	27,202	5.0	1,216	12.7	3,072	-1,856
12-Oct-08	31,259	5,723	290	25,826	23,333	24.3	5,045	12.3	2,552	2,493
19-Oct-08	31,259	6,239	290	25,310	23,902	18.3	3,918	11.7	2,510	1,408
26-Oct-08	31,259	5,754	290	25,795	24,262	19.0	4,125	12.0	2,592	1,533
02-Nov-08	31,259	6,229	290	25,320	24,956	13.5	3,008	11.9	2,644	364
09-Nov-08	31,259	5,553	290	25,996	25,246	14.8	3,359	11.5	2,609	750
16-Nov-08	31,259	6,022	290	25,527	26,225	9.1	2,118	12.0	2,816	-698
23-Nov-08	31,259	5,527	290	26,022	26,798	9.0	2,138	12.2	2,914	-776
30-Nov-08	31,259	5,483	290	26,066	27,315	7.2	1,740	12.3	2,989	-1,249
07-Dec-08	31,265	5,289	290	26,266	27,933	5.7	1,405	12.4	3,072	-1,667
14-Dec-08	31,265	3,795	290	27,760	28,195	10.7	2,672	12.4	3,107	-435
21-Dec-08	31,265	3,275	290	28,280	28,151	12.8	3,203	12.3	3,074	129
28-Dec-08	31,265	2,803	290	28,752	27,770	16.1	3,983	12.1	3,001	982

**Table A6 Assessment of Resource Adequacy: Extreme Weather,
Planned Resource Scenario**

Week Ending Day	Total Resources MW	Total Reductions in Resources MW	Demand Measures MW	Available Resources MW	Required Resources MW	Available Reserve %	Available Reserve MW	Required Reserve %	Required Reserve MW	Reserve Above Requirement MW
08-Jul-07	31,214	3,330	370	28,254	29,177	9.5	2,460	13.1	3,383	-923
15-Jul-07	31,214	3,330	370	28,254	30,176	6.0	1,603	13.2	3,525	-1,922
22-Jul-07	31,214	3,253	370	28,331	31,268	2.7	746	13.4	3,683	-2,937
29-Jul-07	31,214	3,218	370	28,366	30,059	6.8	1,816	13.2	3,509	-1,693
05-Aug-07	31,214	3,545	533	28,202	30,164	6.0	1,591	13.4	3,553	-1,962
12-Aug-07	31,214	3,545	533	28,202	31,217	2.6	705	13.5	3,720	-3,015
19-Aug-07	31,214	3,545	533	28,202	30,302	5.5	1,474	13.4	3,574	-2,100
26-Aug-07	31,214	3,545	533	28,202	29,420	8.6	2,231	13.3	3,449	-1,218
02-Sep-07	31,214	5,051	533	26,696	29,506	2.6	663	13.3	3,473	-2,810
09-Sep-07	31,211	5,572	533	26,172	29,391	1.2	312	13.7	3,531	-3,219
16-Sep-07	31,211	6,593	533	25,151	29,171	-2.0	-509	13.7	3,511	-4,020
23-Sep-07	31,211	7,473	533	24,271	28,446	-2.6	-651	14.1	3,524	-4,175
30-Sep-07	31,211	7,907	533	23,837	26,679	1.6	382	13.8	3,224	-2,842
07-Oct-07	31,287	7,940	533	23,880	27,225	-0.2	-37	13.8	3,308	-3,345
14-Oct-07	31,287	7,940	533	23,880	23,298	15.7	3,237	12.9	2,655	582
21-Oct-07	31,287	8,005	533	23,815	24,059	12.1	2,562	13.2	2,806	-244
28-Oct-07	31,287	8,079	533	23,741	24,383	10.4	2,228	13.3	2,870	-642
04-Nov-07	31,326	8,432	533	23,427	25,167	5.8	1,282	13.7	3,022	-1,740
11-Nov-07	31,326	7,981	533	23,878	25,473	6.3	1,413	13.4	3,008	-1,595
18-Nov-07	31,326	6,940	533	24,919	26,310	7.1	1,660	13.1	3,051	-1,391
25-Nov-07	31,326	6,889	533	24,970	26,842	5.3	1,254	13.2	3,126	-1,872
02-Dec-07	31,326	6,373	533	25,486	27,277	5.4	1,313	12.8	3,104	-1,791
09-Dec-07	31,326	5,026	533	26,833	27,955	7.8	1,946	12.3	3,068	-1,122
16-Dec-07	31,326	4,507	533	27,352	27,975	9.8	2,451	12.3	3,074	-623
23-Dec-07	31,326	4,364	533	27,495	28,719	7.7	1,971	12.5	3,195	-1,224
30-Dec-07	31,326	2,969	533	28,890	26,607	22.3	5,275	12.7	2,992	2,283
06-Jan-08	31,326	2,907	533	28,952	27,332	18.8	4,575	12.1	2,955	1,620
13-Jan-08	31,336	2,909	533	28,960	27,679	17.3	4,279	12.2	2,998	1,281
20-Jan-08	31,336	2,346	533	29,523	28,212	17.5	4,391	12.3	3,080	1,311
27-Jan-08	31,336	2,332	533	29,537	27,990	18.5	4,602	12.3	3,055	1,547
03-Feb-08	31,336	3,201	533	28,668	27,876	15.8	3,905	12.6	3,113	792
10-Feb-08	31,348	3,246	533	28,635	27,768	16.1	3,960	12.5	3,093	867
17-Feb-08	31,348	3,267	533	28,614	27,274	18.0	4,361	12.5	3,021	1,340
24-Feb-08	31,348	3,835	533	28,046	27,037	16.8	4,036	12.6	3,027	1,009
02-Mar-08	31,348	3,835	533	28,046	27,143	17.3	4,127	13.5	3,224	903
09-Mar-08	31,342	5,123	533	26,753	26,858	13.1	3,103	13.6	3,208	-105
16-Mar-08	31,342	5,123	533	26,753	26,102	16.3	3,740	13.4	3,089	651
23-Mar-08	31,342	5,599	533	26,277	25,364	17.1	3,837	13.0	2,924	913
30-Mar-08	31,342	6,887	533	24,989	24,895	13.4	2,952	13.0	2,858	94

(Table A6 continued)

Week Ending Day	Total Resources MW	Total Reductions in Resources MW	Demand Measures MW	Available Resources MW	Required Resources MW	Available Reserve %	Available Reserve MW	Required Reserve %	Required Reserve MW	Reserve Above Requirement MW
06-Apr-08	31,342	6,965	533	24,911	25,022	12.6	2,780	13.1	2,891	-111
13-Apr-08	31,342	7,042	533	24,834	23,650	18.3	3,838	12.6	2,654	1,184
20-Apr-08	31,342	6,618	533	25,258	25,104	14.2	3,143	13.5	2,989	154
27-Apr-08	31,342	7,568	533	24,308	24,834	10.0	2,201	12.3	2,727	-526
04-May-08	31,365	5,473	533	26,426	24,759	20.8	4,554	13.2	2,887	1,667
11-May-08	31,365	5,892	533	26,007	25,327	15.8	3,555	12.8	2,875	680
18-May-08	31,365	5,904	533	25,995	24,728	18.4	4,043	12.7	2,776	1,267
25-May-08	31,365	5,473	533	26,426	25,617	16.4	3,720	12.8	2,911	809
01-Jun-08	31,365	5,414	533	26,485	26,581	12.0	2,830	12.4	2,926	-96
08-Jun-08	31,624	4,686	533	27,471	27,570	12.4	3,026	12.8	3,125	-99
15-Jun-08	31,624	4,176	533	27,981	29,188	8.5	2,193	13.2	3,400	-1,207
22-Jun-08	31,624	3,450	533	28,707	30,266	7.3	1,958	13.2	3,517	-1,559
29-Jun-08	31,624	3,298	533	28,859	29,891	9.1	2,405	13.0	3,437	-1,032
06-Jul-08	31,624	3,355	533	28,802	29,171	11.4	2,947	12.8	3,316	-369
13-Jul-08	31,624	3,332	533	28,825	30,130	8.1	2,166	13.0	3,471	-1,305
20-Jul-08	31,624	3,342	533	28,815	31,272	4.3	1,188	13.2	3,645	-2,457
27-Jul-08	31,624	3,316	533	28,841	30,021	8.5	2,270	13.0	3,450	-1,180
03-Aug-08	31,624	3,573	533	28,584	28,700	12.4	3,144	12.8	3,260	-116
10-Aug-08	31,624	3,559	533	28,598	31,207	3.8	1,055	13.3	3,664	-2,609
17-Aug-08	31,624	3,562	533	28,595	30,304	6.8	1,819	13.2	3,528	-1,709
24-Aug-08	31,624	3,586	533	28,571	29,422	9.8	2,538	13.0	3,389	-851
31-Aug-08	31,624	4,043	533	28,114	29,498	7.8	2,025	13.1	3,409	-1,384
07-Sep-08	31,624	4,720	533	27,437	29,375	5.8	1,491	13.2	3,429	-1,938
14-Sep-08	31,624	5,216	533	26,941	29,126	4.8	1,224	13.3	3,409	-2,185
21-Sep-08	31,624	5,292	533	26,865	28,280	7.5	1,878	13.2	3,293	-1,415
28-Sep-08	31,624	5,767	533	26,390	26,499	12.1	2,853	12.6	2,962	-109
05-Oct-08	31,752	6,520	533	25,765	27,005	7.5	1,787	12.6	3,027	-1,240
12-Oct-08	31,752	6,140	533	26,145	23,144	27.0	5,558	12.4	2,557	3,001
19-Oct-08	31,752	6,656	533	25,629	23,702	21.0	4,442	11.9	2,515	1,927
26-Oct-08	31,752	6,171	533	26,114	24,060	21.7	4,651	12.1	2,597	2,054
02-Nov-08	31,752	6,646	533	25,639	24,664	16.1	3,561	11.7	2,586	975
09-Nov-08	33,087	6,267	533	27,353	25,064	22.2	4,960	11.9	2,671	2,289
16-Nov-08	33,087	6,769	533	26,851	25,872	16.0	3,708	11.8	2,729	979
23-Nov-08	33,087	6,273	533	27,347	26,492	15.6	3,694	12.0	2,839	855
30-Nov-08	33,087	6,232	533	27,388	26,955	14.0	3,356	12.2	2,923	433
07-Dec-08	33,093	6,037	533	27,589	27,536	12.4	3,048	12.2	2,995	53
14-Dec-08	33,093	4,544	533	29,082	27,752	17.6	4,359	12.3	3,029	1,330
21-Dec-08	33,093	4,024	533	29,602	27,775	19.7	4,872	12.3	3,045	1,827
28-Dec-08	33,093	3,551	533	30,075	27,538	23.1	5,646	12.7	3,109	2,537

Table A7 Energy Production Capability Forecast

Month	Firm Resource Scenario Forecast Energy Production Capability (GWh)	Planned Resource Scenario Forecast Energy Production Capability (GWh)
Jul 2007	17,661	17,661
Aug 2007	17,371	17,371
Sep 2007	14,831	14,831
Oct 2007	14,654	14,671
Nov 2007	14,585	14,609
Dec 2007	17,368	17,393
Jan 2008	17,815	17,841
Feb 2008	15,996	16,027
Mar 2008	16,234	16,266
Apr 2008	15,365	15,397
May 2008	15,700	15,748
Jun 2008	17,074	17,286
Jul 2008	17,864	18,083
Aug 2008	17,625	17,844
Sep 2008	16,088	16,301
Oct 2008	16,922	17,164
Nov 2008	16,572	17,496
Dec 2008	17,230	18,189

- End of Section -

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Appendix B Transmission Projects

Table B Transmission Projects

Zone	CAA-ID#	Transmitter	Description	Proposed I/S Date
East	2005-198	Hydro One Networks Inc.	Whitby TS new transformer station	2007-Q3
	N/A	Hydro One Networks Inc.	Kingston-Gardiner TS#2 new transformer station	2008-Q3
	2000-001	Hydro One Networks Inc.	Hawthorne TS: Switchyard expansion to facilitate connection of the HQ 230 kV ties lines.	2007-Q4
	2006-245	Hydro Otyawa	Cyrville TS new transformer station	2008-Q3
Essa	2006-233	Hydro One Networks Inc.	Orangeville TS Shunt Capacitor	2008-Q2
	2006-227	Hydro One Networks Inc.	Everett TS new transformer station	2007-Q3
	2006-211	Hydro One Networks Inc.	Holland Marsh TS new transformer station	2009-Q3
	2006-EX277	Hydro One Networks Inc.	Essa TS: Retermination of 230 kV circuits E27 and M6E	2007-Q3
Niagara	2002-085	Hydro One Networks Inc.	Queenston Flow West	To be determined
	N/A	Hydro One Networks Inc.	Improve thermal rating of 115 kV circuits Q12S, Q3L, Q4N, Q1N, Q5G	2007-Q4
	N/A	Hydro One Networks Inc.	Improve thermal rating of 115 kV circuits D9HS, D10S and Q11S	2007-Q3
	N/A	Hydro One Networks Inc.	Vansickle TS new transformer station	2009-Q3
Northeast	N/A	Great Lakes Power Ltd.	Replacement of 250 MVA Autotransformer @ Third Line TS	2007-Q4
	N/A	Great Lakes Power Ltd.	Maggie TS 115 kV structure replacement	2007-Q4
	N/A	Great Lakes Power Ltd.	Mackay TS 115 kV yard refurbishment - on going	2008-Q4
	N/A	Great Lakes Power Ltd.	Third Line TS 115 kV yard refurbishment - on going	2009-Q4
	2002-086	Hydro One Networks Inc.	Modify Moosonee SS	2007-Q4
	2002-086	Hydro One Networks Inc.	Modify Otter Rapids SS	2007-Q3
	2002-086	Hydro One Networks Inc.	Reinforce existing transmission facilities to supply Victor Mine	2008-Q2
	N/A	Hydro One Networks Inc.	Porcupine TS - Complete replacement of 500 kV and 115 kV breakers and reconfiguration of 500 kV terminations	2007-Q3
Northwest	2006-228	Hydro One Networks Inc.	Red Lake TS new transformer station	2007-Q3
	2006-247	Hydro One Networks Inc.	Lakehead TS static var compensator (SVC)	2009-Q1

(Table B continued)

Southwest	2006-233	Hydro One Networks Inc.	Detweiler TS Shunt Capacitor	2007-Q3
	2006-225	Hydro One Networks Inc.	Toyota Woodstock TS new transformer station	2008-Q2
	2006-225	Hydro One Networks Inc.	Woodstock TS low voltage shunt capacitors	2007-Q4
	2006-215	Hydro One Networks Inc.	Install Preston 230-115 kV auto-transformer	2007-Q4
	2006-221	Hydro One Networks Inc.	Halton TS and Meadowvale TS low voltage shunt capacitors	2008-Q2
	2006-EX299	Hydro One Networks Inc.	Burlington TS: Replace the lower rated 230/115 kV transformer and buswork that limits the station capability.	2008-Q2 2009-Q2
Toronto	2002-057	Hydro One Networks Inc.	John x Esplanade 115 kV cable	2008-Q1
	2006-209	Hydro One Networks Inc.	Enfield TS (Oshawa TS) new transformer station	2009-Q1
	2006-213	Hydro One Networks Inc.	Pleasant TS new transformer station	2008-Q2
West	2006-212	Hydro One Networks Inc.	London Talbot TS new transformer station	2007-Q3
	2005-EX228	Hydro One Networks Inc.	Essex TS: Reconfigure the 115 kV termination	2007-Q3
	2005-194	Hydro One Networks Inc.	Tilbury TS: Reconfigure 115 kV circuit terminations	2007-Q2
	2007-EX318	Hydro One Networks Inc.	Belle River TS low voltage shunt capacitors	2007-Q4
	N/A	Hydro One Networks Inc.	Lambton TS: Replace Air Blast breakers with SF6 breakers, replace buswork (strain bus with rigid bus) and reconfigure lines	2008-Q2

- End of Section -

Appendix C Planned Transmission Outages

The following tables list the planned transmission outages by transmission zone, for transmission outages with an expected duration greater than five days, and/or for those transmission outages associated with a major project.

Table C1 Bruce Zone

Planned Start Date	Planned End Date	Equipment O/S	Outage Request Id	Recall Time	Type	Purpose	Major Transmission Interface Impacted	Reduction in Limit (MW)
Oct 15 2007 7:00 AM	Oct 20 2007 5:00 PM	Longwood TS: PL562, B562L::LONGWOOD_TS::BRUCE_A_TS, B562L::LONGWOOD_TS::BRUCE_A_TS, W52-B562L, W52-B562L, HL562, 21-B562L	5046792	3 Hour	CWW	Longwood TS L562 bus switch refurbishments	NBLIP BLIP FABC	500 500 1050+150 (when BLIP pos) 600+150 (when BLIP neg)

Table C2 East Zone

Planned Start Date	Planned End Date	Equipment O/S	Outage Request Id	Recall Time	Type	Purpose	Major Transmission Interface Impacted	Reduction in Limit (MW)
Aug 09 2006 7:00 AM	Aug 09 2007 3:00 PM	Lennox TS: KL522	4154657	2 Hour	CWW	CT mtce.	None	
Jun 25 2007 7:00 AM	Jul 06 2007 4:00 PM	Cataraqui TS: T2DR21, T2DR22, T2, SS2-X, T2-P, 29T2-X3H	4623152	Non-Recallable	CWW	Mid life rehab	None	
Oct 01 2007 5:00 AM	Oct 26 2007 6:00 PM	Chenaux TS: T4, T4-A, TR4-T, R4-S	4623170	Non-Recallable	CWW	Mid life Refurb	None	
Jul 23 2007 8:00 AM	Jul 31 2007 6:00 PM	Haley JCT: 69X2Y-23, 23X2Y-MSS1	4782655	Non-Recallable	CWW	Wood Pole Structure Replacement on ckt X2Y section Haley JCT X Cobden TS	None	
May 30 2008 2:01 PM	Oct 31 2008 2:01 PM	Dobbin TS: T2-K, T2-A, T2	4796540	Immediate	CWW	Off pot for summer operation.	None	
Oct 09 2007 7:00 AM	Oct 19 2007 4:00 PM	St.Lawrence TS: AL31	4903083	16 Hour	CWW	Major breaker mtce.	None	
Sep 04 2007 4:00 AM	Oct 25 2007 5:00 PM	Chats Falls SS: 2-Q4C, H-TL, T20-Q4C	5021394	8 Hour	DWW	T20-Q4C SWITCH REPLACEMENT	Quebec South (Ottawa)	52 for Export

Table C3 Essa Zone

Planned Start Date	Planned End Date	Equipment O/S	Outage Request Id	Recall Time	Type	Purpose	Major Transmission Interface Impacted	Reduction in Limit (MW)
Oct 23 2007 12:00 PM	Nov 10 2007 6:00 PM	Des Joachims TS: AL4, D4M::DES_JOACHIMS_TS::OTTER_CREEK_JCT, D4M::DES_JOACHIMS_TS::OTTER_CREEK_JCT, D4M::MINDEN_TS::OTTER_CREEK_JCT, AL4, D4M::MINDEN_TS::OTTER_CREEK_JCT, HL4, L4L81	4336774	4 Hour	CWW	Extended Line Outage (including all terminals) is required to complete: 1. Replacement of Line D4M B Relay & Installation of Breaker Failure Protection Scheme on 2 breakers at Des Joachims TS & 2. Replacement of Line D4M B Relay & Installation of Breaker Failure Protection Scheme on 2 breakers at Des Joachims TS & Otto Holden TS	None	
Oct 09 2007 7:00 AM	Oct 18 2007 5:00 PM	Otto Holden TS: 6-D5H, D5H::DES_JOACHIMS_TS::OTTO_HOLDEN_TS, D5H::DES_JOACHIMS_TS::OTTO_HOLDEN_TS, 5-D5H	4669526	4 Hour	CWW	Replace insulators at Str # 258, #261, #262, #284, #288 & #289. Line section D5H between Des Joachims TS X Otto Holden TS	FN FS	350 400
May 01 2007 4:30 AM	Dec 21 2007 6:00 PM	Stayner TS: S2E::STAYNER_TS::ESSA_TS, S2E::STAYNER_TS::ESSA_TS	4978810	14 Minute	DWW	Hold off required for building S2E. By pass Stayner x Essa to make room for new 230 kV Towers	None	

Table C4 Niagara Zone

Planned Start Date	Planned End Date	Equipment O/S	Outage Request Id	Recall Time	Type	Purpose	Major Transmission Interface Impacted	Reduction in Limit (MW)
Sep 12 2007 4:00 AM	Sep 19 2007 6:00 PM	Thorold TS: 44-D1A, T2-K, T2-K, T2E, T2, D1A-MSO, T2Y	3632475	8 Hour	CWW	Construction to remove switch T2-K and replace with rigid bus, Install surge arresters on T2 P&C to modify the protection schemes so that the 44-D1A disconnect switches be used to isolate the transformers which under our H00206 document requires P&C to	None	
Jan 01 2008 6:00 PM	Jan 07 2008 6:14 PM	Bock #2 TS: K1_BUS, KL23, KL23, KL26, TL21L23, KL25, 1K2, 28-Q23BM	4328565	5 Minute	CWW	Test trip from New Bock #2 KL23 Breaker Failure Protection	FABC	50

Table C5 Northeast Zone

Planned Start Date	Planned End Date	Equipment O/S	Outage Request Id	Recall Time	Type	Purpose	Major Transmission Interface Impacted	Reduction in Limit (MW)
Nov 22 2005 12:00 AM	Jun 14 2030 11:59 PM	Anjigami TS: ANJIGAMI LINE #1, ANJIGAMI LINE #1	3663682	Non-Recallable	CWW	Anjigami 115 kv line coming out of service because new 230 line going in service Anjigami Line being decommissioned	None	
Oct 09 2007 8:00 AM	Oct 29 2007 4:00 PM	Hammer TS: R2, 33R2-1504	4282851	1 Day	CWW	R2-1504 Switch Replacement at Hammer TS	None	
Oct 22 2007 9:01 AM	Nov 11 2007 2:01 PM	Wells CGS: 27-T27P, T27	4575887	Non-Recallable	CWW	Wells G2 - Annual maintenance and T27 transformer replacement and breaker overhauls.	None	
Nov 26 2007 8:01 AM	Dec 16 2007 4:01 PM	Wells CGS: 27-T28P, T28	4576307	Non-Recallable	CWW	Wells G1 - Annual maintenance AND T28 transformer replacement (if available)	None	
Oct 22 2007 7:00 AM	Nov 01 2007 5:00 PM	Nine Mile JCT: D3K::DYMOND_TS::NINE_MILE_JCT, D3K::DYMOND_TS::NINE_MILE_JCT, 32-D3K, 68D3K-32, D3K::NINE_MILE_JCT::DANE_JCT, D3K::NINE_MILE_JCT::DANE_JCT	4669531	4 Hour	CWW	Lines to replace 8 wood pole structures. Line section D3K between Dymond TS and Dane Jct.	None	
Nov 23 2006 8:01 AM	Dec 31 2007 11:59 PM	Gartshore GS: 765, 766	4670038	Non-Recallable	CWW	Gartshore reconfig - AB 765 and CB 766 will remain open at Gartshore GS for ongoing reconfiguration work of New Gartshore TS	None	
Aug 20 2007 7:00 AM	Aug 31 2007 5:00 PM	Martindale TS: 9-S22A, T2-S22A, 26-S22A	4716848	4 Hour	CWW	Lines to replace 22 wood pole structures. Line Circuit S22A between Clarabelle TS X Alogma TS	EWTE	50
Oct 09 2007 7:00 AM	Oct 26 2007 5:00 PM	Alagma TS: 26-S22A, T2-S22A, 9-S22A	4716853	4 Hour	CWW	Lines to replace 22 wood pole structures. Line Circuit S22A between Clarabelle TS X Alogma TS	EWTE	50
Sep 04 2007 8:00 AM	Sep 21 2007 4:00 PM	Hammer TS: T9, 33T9-A, 33T9-A, 33T9-J, AL26, A_BUS, AL74, SC21A-A, T9-SS, AL27, R9-T9	4728382	2 Hour	CWW	Switch & Insulator maintenance on A Bus	None	
Mar 30 2007 4:00 PM	Jul 06 2007 6:00 PM	Porcupine TS: H2L501	4802520	8 Week	CWW	To replace H2L501 with new SF6 breaker. To remove H2L501 CTs	None	
Aug 13 2007 7:00 AM	Aug 31 2007 3:00 PM	Hammer TS: 33T8-P, T8, T8-Q8, R8N, R8, 33T8-H	4802669	8 Hour	CWW	SMS Doble Testing & preventive MTCE on Hammer T8 & preventive MTCE on R8N & R8	None	
Sep 02 2007 5:00 AM	Sep 22 2007 5:00 PM	Crystal Falls TS: T6-H24S, 1820H24S-7, 9-H24S	5014818	8 Hour	CWW	Structure replacement on the H24S circuit sec (North Bay Jct (EPCOR) X Martindale TS X Crystal Falls TS)	HQ Mode 2 HQ Mode 3 (T4E)	30 15
Oct 09 2007 8:00 AM	Oct 19 2007 4:00 PM	Hammer TS: PL504	5027988	4 Hour	CWW	Preventative Mtce on PL504 bkr. & Doble Testing red phase C/T at Hammer TS	None	

Table C6 Northwest Zone

Planned Start Date	Planned End Date	Equipment O/S	Outage Request Id	Recall Time	Type	Purpose	Major Transmission Interface Impacted	Reduction in Limit (MW)
Oct 10 2006 9:01 AM	Dec 31 2007 11:59 PM	Sterling Chem. CTS: 13.8KV, T1, S-B1B, T2, S-T2, S-T1, B1	4501423	Non-Recallable	CWW	Permanent Shutdown of Plant.	None	
Jul 09 2007 7:00 AM	Jul 20 2007 5:00 PM	Reserve JCT: A6P-LC, 2A6P	4720902	4 Hour	CWW	Provincial Lines to replace structures on Circuit A6P - Section A6P-LC x Port Arthur.	None	
Jun 17 2007 7:00 AM	Jul 29 2007 2:00 PM	Red Lake TS: T3, T3-E2R, T3-Y	4976070	Non-Recallable	CWW	Station Const. to Disconnect Old Red Lake T3 and Replace with a New one	None	
Jul 09 2007 8:00 AM	Jul 20 2007 6:00 PM	Fort Frances TS: T1-J, T1, T1-K	5004276	1 Day	CWW	Repair oil leaks on T1 Internal ULTC work Replace broken or defective insulators	None	
Sep 24 2007 7:00 AM	Nov 30 2007 7:00 PM	Mackenzie TS: 20-D26A, D26A::DRYDEN_TS::MACKENZIE_T S, 25-D26A, D26A::DRYDEN_TS::MACKENZIE_T S	5014621	4 Hour	CWW	Provincial Lines to replace structures on ckt D26A section Dryden x Mackenzie	OMTE, OMTW, EWTE, EWTW, MPFN	OMTE - 70 MW OMTW - 250 MW EWTE - 75 MW EWTW - 50 MW MPFN - 50 MW
Oct 14 2007 12:00 PM	Oct 21 2007 8:00 AM	Conmee JCT: P5M-S1C, P5M::PORT_ARTHUR_TS_#1::CON MEE_JCT, 2P5M, L3P::LAKEHEAD_TS::PORT_ARTHUR_TS_#1, P5M::PORT_ARTHUR_TS_#1::CON MEE_JCT, P5M-L3PMSO, L3P::LAKEHEAD_TS::PORT_ARTHUR_TS_#1, L3P_212D	5015558	2 Day	CWW	Construction mtce to replace CVT's on the P5M cct @ Port Arthur TS and Silver Falls GS	None	

Table C7 Ottawa Zone

Planned Start Date	Planned End Date	Equipment O/S	Outage Request Id	Recall Time	Type	Purpose	Major Transmission Interface Impacted	Reduction in Limit (MW)
Sep 04 2007 8:00 AM	Sep 14 2007 4:00 PM	Merivale TS: SC11L, SC11SC, SC11	4506040	6 Hour	CWW	Major SC11SC and SC11L brk mtce. and SC11 cap bank mtce. Doble SC11NVT	FIO	50
Aug 20 2007 7:00 AM	Aug 27 2007 3:00 PM	South March TS: A1A2	4802713	8 Hour	CWW	Major breaker mtce.	FIO	170
Dec 25 2007 6:30 AM	Dec 30 2007 4:00 PM	King Edward TS: T4, JY, T4-A, T4Y, T4Y, T4Q, Y_BUS	4969315	8 Hour	CWW	To replace potheads (6) on T4Y secondary cable where it enters T4Y cubicle	None	
Jul 09 2007 5:00 AM	Sep 27 2007 5:00 PM	Wilhaven DS: H9A::WILHAVEN_DS::CUMBERLAND_DESN, H9A::WILHAVEN_DS::CUMBERLAND_DESN	4982181	Non-Recallable	CWW	Lines Construction to dismantle H9A Borromee Jct x Wilhaven tap and replace with new double circuit tower	None	
Aug 13 2007 5:00 AM	Oct 07 2007 7:00 PM	Hawthorne TS: HTS15, T5-HT5, HT5_BUS, HTS131	4982212	Non-Recallable	CWW	Station Construction to replace HTS15 and HTS131 breakers. Construction to replace HTS15-HT5 and HTS131-HT5 switches.	None	
Oct 08 2007 5:00 AM	Oct 19 2007 7:00 PM	Hawthorne TS: KL5, HTS15, D5A::CUMBERLAND_JCT::ST.ISIDORE_TS, D5A::CUMBERLAND_JCT::HAWTHORNE_TS, 48-D5A, D5A::CUMBERLAND_JCT::HAWTHORNE_TS, D5A::CUMBERLAND_JCT::ST.ISIDORE_TS, D5A-2403, 48-D5A_62D5A_48	4982268	8 Hour	CWW	Lines Construction to connect D5A to H9A to use H9A as a D5A bypass. Station Construction to replace HTS15-L .	Quebec South (Ottawa)	115 for Export 130 for Import
Nov 16 2007 5:00 AM	Dec 07 2007 7:00 PM	Hawthorne TS: HTS131, DL31, 48-M31A	4982326	Non-Recallable	CWW	Construction to replace Hawthorne DL31 breaker DL31-L and HTS131-L	None	
Sep 10 2007 7:30 AM	Sep 21 2007 3:00 PM	Hawthorne TS: R3-T3, R3N, R3, R3N	5036062	72 Hour	CWW	Major mtce. on R3N breaker Minor mtce. on R3	None	

Table C8 Southwest Zone

Planned Start Date	Planned End Date	Equipment O/S	Outage Request Id	Recall Time	Type	Purpose	Major Transmission Interface Impacted	Reduction In Limit (MW)
Jan 01 2008 5:00 AM	Jan 07 2008 6:00 PM	Middleport TS: T6L23, T16O, Q23BM::NIAGARA_WEST_JCT::BECK_#2_TS, T121L23, Q23BM::CARLUKE_JCT::MIDDLEPORT_TS, DL23, T16B, Q23BM::NIAGARA_WEST_JCT::BECK_#2_TS, T16, Q23BM::BURLINGTON_TS::BURLNGTNJCT, KL23, H2L23, Q23BM::BURLINGTON_TS::BURLNGTNJCT, L23L37, Q23BM::CARLUKE_JCT::MIDDLEPORT_TS	3671438	4 Hour	CWW	Relay & Interface Replacement - Outage to wire in new tripping relays at Burlington, Beck#2 & Middleport	FABC	50
Nov 26 2007 7:00 AM	Dec 14 2007 6:00 PM	Middleport TS: T6, NS81M::NANTICOKE_TS::MIDDLEPORT_TS, L581_BUS, T6L23, AL581, T6L31, L81L85, NS81M::NANTICOKE_TS::MIDDLEPORT_TS, T7L581	3816868	4 Hour	CWW	Relay & Interface Replacement - Outage to wire in new tripping relays	FETT NBLIP/BLIP FABC	950 Nov. 26-27 700 Nov. 27-Dec 2 500 Dec. 2-11 700 Dec. 11-14 500 Nov. 26-27 150+150+150 Nov. 27-Dec 2 150 Dec. 2-11 150+150+150 Dec. 11-14 500
Jan 01 2008 7:00 AM	Jan 07 2008 6:00 PM	Burlington TS: 39-Q23BM, H2L36, H2L40, H2_BUS, SC22H2-H2, H1H2, H2L18, L23L37, H2L23, H2L23, T9-H2	4328539	2 Hour	CWW	To replace Burlington H2L23 Breaker Failure Protection with new C60 Relay's	FABC	50
Jan 01 2008 6:00 PM	Jan 07 2008 6:14 PM	Burlington TS: H2L23, H2L18, H2L23, H2L40, H1H2, 39-Q23BM, H2L36, H2_BUS, SC22H2-H2, L23L37, T9-H2	4328552	5 Minute	CWW	Test Trip from new Burlington H2L23 Breaker Failure Protection	FABC	50
Aug 13 2007 5:00 AM	Oct 13 2007 7:00 PM	Nanticoke TS: T12, T12-H, T12-F	4416586	36 Hour	CWW	To perform a Nanticoke T12 Oil Removal/Constructive Repair	None	
Sep 10 2007 5:00 AM	Sep 28 2007 6:00 PM	Middleport TS: L5L25, T15J, A2L25, L25T302, Q25BM::BURLINGTON_TS::BURLNGTNJCT, KL25, Q25BM::BURLINGTON_TS::BURLNGTNJCT, L25L40, T15Y, KL25, Q25BM::NIAGARA_WEST_JCT::BECK_#2_TS, Q25BM::CARLUKE_JCT::MIDDLEPORT_TS, Q25BM::CARLUKE_JCT::MIDDLEPORT_TS, Q25BM::NIAGARA_WEST_JCT::BECK_#2_TS, T15	4525701	4 Hour	CWW	Relay & Interface Replacement - Outage to wire in new tripping relays at Burlington, Beck#2 & Middleport	FABC FETT	Sept. 10-11 150+50 Sept. 11-14 150+50+50 Sept. 14-21 50+50 Sept. 21-28 50+50+50 Sept. 11-21 100 Sept. 21-28 150
Apr 07 2008 4:00 AM	May 30 2008 7:00 PM	Nanticoke TS: T12-F, T12-H, T12	4674837	4 Hour	CWW	Station Construction to install spill pits for Nanticoke T12	None	
Jul 25 2007 5:00 AM	Jul 31 2007 4:00 PM	Detweiler TS: ASC21, SC21, T2SC21, SC21AT	4684586	4 Hour	CWW	Station Construction to replace Detweiler SC21 Reactor Station Maintenance to in service the Reactor P&C update SC21 Protections SMS to replace T2SC21 air relief valve. (SMS will do this work under SAWP, after completion of NIM)	!!!!!!	reschedule this outage for after summer
Sep 11 2007 5:00 PM	Sep 21 2007 6:00 AM	Nanticoke TS: P1L22, K1L1	4714030	40 Hour	CWW	Replace bus, structures and insulators on P1 bus East of column 11 (P1-MSO1) Replace bus, structures and insulators on K1 bus East of column 11 (K1-MSO1) Replace K1L1-K and P1L22-P switches	FABC FETT	Sept. 11-14 150+50+50 Sept. 14-21 50+50 Sept. 11-21 100
Sep 21 2007 5:00 PM	Oct 05 2007 7:00 PM	Nanticoke TS: P1P2, L5F, F_BUS, RSS4-F, T12-F, P1F, K1K2, K1L5, P1F	4714049	40 Hour	CWW	Replace bus, structures and insulators on P1 bus between column 9 & 11 Replace bus, structures and insulators on K1 bus between column 9 & 11 Replace K1L5-K, P1F-P, P1P2-1 and K1K2-1 switches	FETT FABC	Sept. 21-28 150 Sept. 21-28 50+50+50 Sept. 28-29 50+50 Sept. 29-Oct. 5 50+50+150
Oct 30 2007 5:00 PM	Nov 10 2007 6:00 AM	Nanticoke TS: K2L21, P2L6	4714103	40 Hour	CWW	Replace bus, structures and insulators on P2 bus west of column 5 Replace bus, structures and insulators on	FABC	Oct. 30-Nov. 3 1050+100 (when BLIP pos) Oct. 30-Nov. 3 600+50 (when
Nov 10 2007 5:00 PM	Nov 23 2007 7:00 PM	Nanticoke TS: L2E, K2E, P2L2, L2E, K2E, P1P2, K1K2, T11-E, E_BUS, RSS3-E	4714129	40 Hour	CWW	Replace bus, structures and insulators on P2 bus between column 5 & 7 Replace bus, structures and insulators on K2 bus between column 5 & 7 Replace bus, structures and insulators on E Bus Replace K1L21-K, P2L2-P, P1P2-2 and K1K2-2 switches	FABC	Nov. 10-12 50+50 Nov. 12-23 50+50+150+150
Dec 03 2007 4:00 AM	Dec 10 2007 7:00 PM	Caledonia JCT: N1M::CALEDONIA_JCT::CALEDONIA_TS, N1M::NANTICOKE_TS::CALEDONIA_JCT, N1M::CALEDONIA_TS::CALEDONIA_TS, 59-N22J, P1L22, P1L22, 59-N1M, 25-N1M, N1M::CALEDONIA_JCT::MIDDLEPORT_TS, K1L1, L1L22, N1M::CALEDONIA_JCT::MIDDLEPORT_TS, N1M::NANTICOKE_TS::CALEDONIA_JCT, L1L22, N27T1-N1M	4714155	30 Hour	CWW	Replace bus, structures and insulators on N1M and N22J Terminals Replace K1L1-1, L1L22-1 and N1M-G switches Replace N1CVT	!!!!!!	reschedule this outage not to coincide with 3816868
Dec 11 2007 4:00 AM	Dec 18 2007 7:00 PM	Nanticoke TS: L1L22, N22J::NANTICOKE_TS::STELCO_JCT, N22J::JARVIS_TS::STELCO_JCT, N22J::STELCO_CTS::STELCO_JCT, T3-N22J, K1L1, K1L1, L1L22, N22J::JARVIS_TS::STELCO_JCT, 59-N1M, 59-N22J, P1L22, N22J::NANTICOKE_TS::STELCO_JCT, N22J::STELCO_CTS::STELCO_JCT	4714168	30 Hour	CWW	Replace bus, structures and insulators on N1M and N22J Terminals Replace P1L22-22, L1L22-22 and N22J-G switches Replace N22CVT	!!!!!!	reschedule this outage not to coincide with 3816868
Sep 17 2007 7:00 AM	Oct 12 2007 3:30 PM	Puslinch DS: B6G-1, B5G-L, B5GHA-BU, B6G-L	4815067	12 Hour	CWW	To recondition first 4 towers of B5G and B6G out of Burlington and upgrade conductor on first 4 towers to 477 MCM	None	
Jun 18 2007 5:00 PM	Dec 31 2007 4:00 PM	Detweiler JCT: D9G-D1W	4884174	2 Hour	CWW	Wolverton to be moved to D7G supply	None	
Aug 20 2007 7:00 AM	Aug 31 2007 3:00 PM	Burlington TS: A1L38	4963153	6 Minute	CWW	Major Mfce on Burlington A1L38 brkr, D1, D2, S1 Repairs to air receiver tank blow down valve	None	
Jul 03 2007 7:00 AM	Jul 13 2007 3:00 PM	Beach TS: D1L29	5003029	8 Hour	CWW	Major Mfce on Beach D1L29 Brkr (M1 D1, D2, S1) Doble Test on July 12th	None	

Table C9 Toronto Zone

Planned Start Date	Planned End Date	Equipment O/S	Outage Request Id	Recall Time	Type	Purpose	Major Transmission Interface Impacted	Reduction in Limit (MW)
Jan 01 2008 7:00 AM	Jan 26 2008 2:30 PM	Bermondsey TS: T4B, T4Y, T4, T4-C14L	2491118	36 Hour	CWW	GMS to do major mtce and oil leak repairs and Doble test on T4 SMS to do major mtce due to FAO readings on T4B	None	
Jan 01 2009 7:00 AM	Jan 27 2009 6:00 PM	Pickering B SS: P27C::CHERRYWOOD_TS::PICKERING_B_SS, L26L27, T5L27, P27C::CHERRYWOOD_TS::PICKERING_B_SS, K127, L27B	3017187	2 Day	CWW	Both B & A Relays Plus Interface to MUX Replacement	None	
Oct 29 2007 4:00 AM	Dec 28 2007 7:00 PM	Cherrywood TS: T15-HT15, T15, T15-W2	4622703	36 Hour	CWW	To perform a Cherrywood TS T15 Oil Dvout/Corrective Repair	None	
Oct 20 2007 6:00 AM	Oct 27 2007 6:00 PM	Bermondsey TS: C17L::SCARBORO_JCT::BERMONDSEY_TS, 81-C17L, C17L::CHERRYWOOD_TS::SCARBORO_JCT, C17L::BERMONDSEY_TS::LEASIDE_TS, 34-C17L, C17L::SCARBORO_JCT::WARDEN_TS, C17L::SCARBORO_JCT::WARDEN_TS, T4-C17L, T1-C17L, T3-C17L, C17L::SCARBORO_JCT::BERMONDSEY_TS, C17L::CHERRYWOOD_TS::SCARBORO_JCT, C17L::BERMONDSEY_TS::LEASIDE_TS	4709959	2 Hour	CWW	Metro Lines to change insulators on ckt C16L	None	
Oct 08 2007 6:00 AM	Oct 21 2007 6:00 PM	Bloor Street JCT: H1L::GERRARD_TS::BLOOR_STREET_JCT, H1L::GERRARD_TS::BLOOR_STREET_JCT, H1L::BLOOR_STREET_JCT::LEASIDE_TS, H1L::BLOOR_STREET_JCT::LEASIDE_TS, 34-H1L, H1L-34	4747457	Non-Recallable	CWW	Contractor to pull in new section of cable, freeze and cut existing cables & pipe and splice in new section of H1L cable	None	
Jan 07 2008 7:00 AM	Jan 14 2008 5:00 PM	Gerrard TS: H3L::GERRARD_TS::BLOOR_STREET_JCT, H3L::BLOOR_STREET_JCT::LEASIDE_TS, 34-H3L, H3L::GERRARD_TS::BLOOR_STREET_JCT, H3L-34, H3L::BLOOR_STREET_JCT::LEASIDE_TS	4747559	4 Hour	DWW	Contractor to erect scaffolding, install new terminations and remove scaffolding.	None	
Jan 15 2008 6:00 AM	Jan 22 2008 6:00 PM	Gerrard TS: H3L-34, H3L::BLOOR_STREET_JCT::LEASIDE_TS, H3L::BLOOR_STREET_JCT::LEASIDE_TS, H3L::GERRARD_TS::BLOOR_STREET_JCT, 34-H3L, H3L::GERRARD_TS::BLOOR_STREET_JCT	4747565	4 Hour	DWW	Contractor to erect scaffolding, install new terminations and remove scaffolding.	None	
Nov 03 2007 5:00 AM	Nov 12 2007 6:00 PM	Richview TS: H1H2, H2L72, R13K::MANBY_EAST_TS::RICHVIEW_TS, A2L13, H2L22, T7B, H3L13, H2_BUS, H2L18, R13K::MANBY_EAST_TS::RICHVIEW_TS, H2L20, H2L76, T7, SC21H	4834054	Non-Recallable	CWW	This is a place holder for the line outage of R13K- B protection both ends for the protection replacement program NERC compliance for 2007	None	
Nov 03 2007 5:00 AM	Nov 12 2007 6:00 PM	Richview TS: R13K::MANBY_EAST_TS::RICHVIEW_TS, R13K::MANBY_EAST_TS::RICHVIEW_TS, T7B, H3L13, A2L13, T7, H2L72, SC21H, H2L18, H1H2, H2_BUS, H2L20, H2L76, H2L22	4834342	Non-Recallable	CWW	This is a place holder for the line outage of R13K- A protection both ends for the protection replacement program NERC compliance for 2007	None	
Sep 04 2007 7:30 AM	Nov 08 2007 6:00 PM	Claireville TS: K1-K2, KL72, KT15, K2_BUS, KL83, KL76, K1-K2, KL71, K1_BUS	4856207	20 Day	CWW	To replace K1 and K2 Buses	None	
Oct 15 2007 7:00 AM	Oct 26 2007 5:00 PM	Pickering A SS: 44-P8C, K_BUS, P8C::PICKERING_A_SS::CHERRYWOOD_TS, T2K, T1D, T2K, T1D, P6C::CHERRYWOOD_TS::PICKERING_A_SS, D_BUS, P8C::PICKERING_A_SS::CHERRYWOOD_TS, T1L6, 81-P8C, T1L6, P6C::CHERRYWOOD_TS::PICKERING_A_SS, L6K, L8D, L6K, L3L6, D16, T2L8	4982415	Non-Recallable	CWW	Construction to replace all control, relay and metering cables in the Pickering A G1/G2 yard as follows: P6C including Cherrywood Terminal, P8C, T1L6, T1D, G1, SS2, L8D, T2L8, G2, T2K, SS1, L6K	None	
Aug 23 2007 5:00 AM	Aug 31 2007 6:00 PM	Dobbin TS: P15C::DOBBIN_TS::CHERRYWOOD_TS, L1L15, P15C::DOBBIN_TS::CHERRYWOOD_TS, DL15, AL15, L15L20	5001962	4 Day	CWW	This is a place holder for the line outage of P15C - A and B protection both ends for the protection replacement program NERC compliance for 2007	None	
Oct 26 2007 7:00 AM	Nov 16 2007 5:00 PM	Pickering A SS: K_BUS, 44-P6C, T2K, P6C::CHERRYWOOD_TS::PICKERING_A_SS, T1D, 81-P6C, L8D, D_BUS, P6C::CHERRYWOOD_TS::PICKERING_A_SS, T1D, 44-P8C, T2L8, L6K, T2K, T1L6, P8C::PICKERING_A_SS::CHERRYWOOD_TS, 81-P8C, P8C::PICKERING_A_SS::CHERRYWOOD_TS	5031201	Non-Recallable	CWW	Construction to replace all control, relay and metering cables in the Pickering A G1/G2 yard as follows: P6C, P8C, T1L6, T1D, G1, SS2, L8D, T2L8, G2, T2K, SS1, L6K	None	
Nov 16 2007 6:00 AM	Dec 07 2007 4:00 PM	Pickering A SS: L6K, T2K, P6C::CHERRYWOOD_TS::PICKERING_A_SS, D_BUS, T2K, T1L6, 81-P6C, 44-P6C, P8C::PICKERING_A_SS::CHERRYWOOD_TS, L8L24, KL8, P8C::PICKERING_A_SS::CHERRYWOOD_TS, T2L8, L8D, T2L8, T1D, T1D, L8D, K_BUS, P6C::CHERRYWOOD_TS::PICKERING_A_SS	5031267	Non-Recallable	CWW	Construction to replace all control, relay and metering cables in the Pickering A G1/G2 yard as follows: P6C, P8C including Cherrywood Terminal, T1L6, T1D, G1, SS2, L8D, T2L8, G2, T2K, SS1, L6K	None	
Oct 01 2007 6:30 AM	Oct 17 2007 2:30 PM	Cherrywood TS: W2L541	5040462	8 Hour	CWW	Major overhaul and Mech Box Upgrade	None	

Table C10 West Zone

Planned Start Date	Planned End Date	Equipment O/S	Outage Request Id	Recall Time	Type	Purpose	Major Transmission Interface Impacted	Reduction in Limit (MW)
Jun 09 2006 6:30 AM	Dec 31 2007 6:00 PM	Lambton TS #2: PS51-1, PS51, PS51-2	4219977	30 Minute	CWW	PS51 bypassed for summer to improve the import thermal limits.	None	
Sep 17 2007 8:00 AM	Sep 28 2007 4:00 PM	Buchanan TS: L8K	4233990	4 Hour	CWW	Buchanan L8K major breaker mtce.(M1,D1,D2,S1)	None	
Sep 15 2007 4:00 AM	Oct 02 2007 6:00 PM	Sarnia Scott TS: L21L43	4300795	Non-Recallable	CWW	Construction, SMS & P&C to replace oil breaker with new SF6 breaker.	None	
Oct 05 2007 4:00 AM	Oct 23 2007 5:00 PM	Sarnia Scott TS: L6L23	4385678	Non-Recallable	CWW	Construction, SMS & P&C to replace oil breaker with new SF6 breaker.	None	
Oct 27 2007 4:00 AM	Nov 13 2007 5:00 PM	Sarnia Scott TS: L7L22	4385681	Non-Recallable	CWW	Construction, SMS & P&C to replace oil breaker with new SF6 breaker.	None	
Jul 10 2007 6:00 PM	Aug 02 2007 6:00 AM	Lambton TS #2: PS4-1, PS4, PS4-2	4581928	4 Day	CWW	PS4 bypassed for EMD to do oil replacement on PS4	None	
Sep 10 2007 5:00 AM	Oct 26 2007 6:00 PM	Lambton TS #2: T7, 27-T7, T7-L4D	4622862	2 Day	CWW	Part of the oil leak reduction program	Michigan Export Michigan Import	about 300
Sep 25 2007 5:00 AM	Oct 05 2007 5:00 PM	Essex TS: B4_BUS, T2B, T4B, B3-4, T4B, T4-L9, B3-4, B3_BUS, T4, B2B3, M8, SC2B, B3V3	4727174	1 Day	CWW	Open section of "B3" bus in vicinity of SS2. (See M.S. Log).	None	
Jun 23 2007 4:00 AM	Jul 11 2007 5:00 PM	Sarnia Scott TS: HL23	4759479	Non-Recallable	CWW	Construction, SMS & P&C to replace oil breaker with new SF6 breaker.	None	
Dec 26 2006 6:00 AM	Dec 31 2007 6:00 PM	Lambton TS #2: PS4-2, PS4-1, PS4	4764494	30 Minute	CWW	PS4 bypassed for summer to improve the import thermal limits.	None	
Sep 10 2007 5:00 AM	Oct 31 2007 6:00 PM	Wonderland TS: SC2Y, SC2, SC2Y	4856672	Non-Recallable	CWW	Wonderland SC2 Capacitor Replacement Install an inrush Current Limiting Reactor	None	
Aug 26 2007 6:00 PM	Sep 14 2007 6:00 PM	Lambton TS #2: KL4, L4D::ST.CLAIR_CTS::LAMBTON_TS_#2, L4D::ST.CLAIR_CTS::LAMBTON_TS_#2, PL4, PS4-1, T8-L4D, T7-L4D, P2-MSO2, PS4-S, K2-MSO2	4863580	Non-Recallable	CWW	Replace buswork and insulators L4D ZTT	NBLIP BLIP FABC Michigan Export Michigan Import	500 500 Aug. 26-Sept. 10 150 Sept. 10-11 150+50 Sept.11-14 150+50+50 575 450
Sep 30 2007 6:00 PM	Oct 13 2007 4:00 AM	Lambton TS #2: PS4-S, L4D::ST.CLAIR_CTS::LAMBTON_TS_#2, P2-MSO1, L4D::ST.CLAIR_CTS::LAMBTON_TS_#2, T8-L4D, PL4, PL26, K2-MSO1, PS4-1, T7-L4D, KL4, L25L26, 27-L26L	4863840	Non-Recallable	CWW	Replace buswork. Permanently sleeve out loops K2-MSO2 and P2-MSO2. Permanently remove switch P2-P3. Install new L38G line switch. Replace insulators.	NBLIP BLIP FABC Michigan Export Michigan Import	500 500 Sept. 30-Oct. 5 50+50+150 Oct. 5-Oct. 13 150 575 450
Oct 14 2007 6:00 PM	Oct 24 2007 4:00 AM	Lambton TS #2: PL26, 27-L26L, L25L26	4863902	Non-Recallable	CWW	Replace buswork and insulators.	NBLIP BLIP FABC	500 500 Oct. 14-15 150 Oct. 15-20 1050+150 (when BLIP pos) Oct. 15-20 600+150 (when BLIP neg) Oct. 20-24 150
Nov 12 2007 6:00 PM	Nov 27 2007 5:00 AM	Lambton TS #2: K1K2, P1P2, K2-MSO1, L27L28, 27-L27V, L27L28, 27-L28C, KL28, P2-MSO1, PL27	4863994	Non-Recallable	CWW	Replace buswork and insulators.	NBLIP BLIP FABC	700 700 Nov. 12-23 150+150+50+50 Nov. 23-26 150+150 Nov. 26-27 150, 150+150
Dec 02 2007 6:00 PM	Dec 11 2007 5:00 AM	Lambton TS #2: PL27, L27L28, 27-L28C, L27L28, KL28, 27-L27V	4864302	Non-Recallable	CWW	Replace buswork and insulators.	NBLIP BLIP FABC	700 700 150+150+150
Sep 10 2007 7:00 AM	Oct 12 2007 2:00 PM	Keith TS: T22Y, T22, T22-H	4868657	18 Hour	CWW	Major overhaul-leak refurbishment work on Keith T22 transformer and T22 ULTC upgrade /modification work	None	
Sep 17 2007 7:00 AM	Oct 19 2007 2:00 PM	Walker TS #1: T3Q, T3-27E, T3	4868744	18 Hour	CWW	Major overhaul-leak refurbishment work on Walker T3 transformer and T3 ULTC upgrade /modification work	None	
Oct 22 2007 7:00 AM	Nov 23 2007 2:00 PM	Walker TS #1: T4, T4-Z1E, T4E	4868749	18 Hour	CWW	Major overhaul-leak refurbishment work on Walker T4 transformer and T4 ULTC upgrade /modification work	None	
Aug 25 2007 4:00 AM	Sep 16 2007 6:00 PM	Lambton TS #2: L4D, L4D	4911511	Non-Recallable	CWW	MISO outage affecting MICH-ONT interface	NBLIP BLIP FABC Michigan Export Michigan Import	500 500 Aug. 25-Sept. 10 150 Sept. 10-11 150+50 Sept.11-16 150+50+50 575 450
Sep 29 2007 4:00 AM	Oct 14 2007 6:00 PM	Lambton TS #2: L4D, L4D	5013314	Non-Recallable	CWW	MISO outages affecting MICH-ONT interface	NBLIP BLIP FABC Michigan Export Michigan Import	500 500 Sept. 29-Oct. 5 50+50+150 Oct. 5-Oct. 14 150 575 450
Apr 02 2007 5:00 AM	Dec 31 2007 6:00 PM	Wanstead TS: SC1B	5022127	4 Hour	CWW	Wanstead SC1B-B is defective and can only be operated if the bus is taken o/s . Wanstead SC1B will not close from control . So SC1B is available for service but it would take approx 4 hours to call out personnel and perform load transfer to close	None	

(Table C10 continued)

Oct 29 2007 6:00 AM	Nov 03 2007 5:00 PM	Longwood TS: KL563, HL563, B563L::LONGWOOD_TS::BRUCE_B_SS, 29-B563L, B563L::LONGWOOD_TS::BRUCE_B_SS, W52-B563L, W52-B563L	5040909	3 Hour	CWW	Longwood TS - HL563-L, KL563-L, W52-B563L & 52B563L-G switch refurbishment	NBLIP BLIP FABC	500 500 Oct. 29-30 1050 (when BLIP pos) Oct. 29-30 600 (when BLIP neg) Oct. 30-Nov. 3 1050+100 (when BLIP pos) Oct. 30-Nov. 3 600+50 (when BLIP neg)
Mar 03 2008 8:00 AM	Apr 25 2008 4:00 PM	Chatham SS: W44LC::CHATHAM_SS::COWAL_JCT, 86-W44LC, W44LC::CHATHAM_SS::COWAL_JCT, 53L44-86	5048555	4 Hour	DWW	Replace Skywire with OPGW	None	
Apr 28 2008 8:00 AM	May 23 2008 4:00 PM	EDGEWAR23JCT: W44LC::EDGEWARE_TS::EDGEWAR23JCT, 19-W44LC, T2-W44LC, W44LC::EDGEWARE_TS::EDGEWAR23JCT, 53L44-19, W44LC::BUCHANAN_TS::EDGEWAR23JCT, W44LC::BUCHANAN_TS::EDGEWAR23JCT, W44LC::COWAL_JCT::EDGEWAR23JCT, W44LC::COWAL_JCT::EDGEWAR23JCT, W44LC::COWAL_JCT::EDGEWAR23JCT,	5048564	4 Hour	DWW	Replace Skywire with OPGW	None	

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