18-MONTH OUTLOOK:

An Assessment of the Reliability of the Ontario Electricity System

From January 2008 to June 2009

ieso
Power to Ontario. On Demand.

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Executive Summary

The outlook for Ontario is quite positive, with more than 4,600 megawatts (MW) of new supply scheduled to come into service over the next 18 months.

Under the normal weather scenario, sufficient resources will be available within Ontario to meet expected requirements during all but one week over the next year and a half. For this to occur, all of the planned resource additions must meet their stated in service targets and the aggressive conservation targets set by the Ontario Power Authority (OPA) must be achieved. Even if that does occur, Ontario may need to rely on imports from neighbouring jurisdictions to maintain reliability if extreme weather occurs or if equipment performance is below normal.

The next 18 months should see important new additions to Ontario's supply, including about 3,000 MW of gas-fired generation, 800 MW of nuclear generation, 100 MW of hydroelectric generation and 700 MW of wind generation. This amount of new generation would represent the greatest increase in new supply ever scheduled to come on line in Ontario over an 18-month period.

The Ontario transmission system is expected to be adequate to supply the normal demands over the next 18-months.

West of London, under certain local generation and import scenarios, there is potential for bottled capacity. If there were a reliability risk it is expected that operational mechanisms could be implemented to alleviate bottling to some extent.

As outlined in the September issue of the 18-month Outlook, the IESO's ability to maintain reliability in the Greater Toronto Area (GTA) during the summer of 2007 was challenged when one Claireville autotransformer was out of service coincident with multiple unit outages at the Pickering Generating Station. This resulted in loadings of the remaining autotransformers close to their capability.

Reliability within the GTA for summer 2008 is expected to be adequate, but this will depend on the availability of the autotransformers feeding the GTA, the availability of the Pickering units, and the planned addition of the Portlands Energy Centre.

Hydro One and the International Transmission Company have recently signed a facility agreement on the Michigan-Ontario interconnection phase angle regulators. Amended operating agreements and instructions are now required between the IESO and Hydro One, and the IESO and the Mid-west ISO, before all phase angle regulators become operational. The operation of the phase angle regulators can control circulating flows and assist in management of system congestion.

The new interconnection between Hawthorne Transformer Station in Ontario and Outaouais station in Québec, which is scheduled for completion by March 31, 2009, will result in an increase in Ontario's import-export capability of 1,250 MW.

The forecast for peak and energy demand is lower than in the previous Outlook. Industrial sector demand has continued to decline in the face of the high Canadian dollar. With the continued efforts of the OPA and local distribution companies (LDC), conservation programs are further reducing demand for electricity. The impact of the OPA's conservation targets are reflected in the Planned resource scenario.

Weather-corrected energy demand for 2007 is expected to be 151.9 terawatt hours (TWh), a drop of 0.3% from 2006. Energy demand is expected to grow by 1.1% for 2008 (153.6 TWh).

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. The Planned Resource Scenario includes the impacts of targeted conservation. 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)
Winter 2007-08	24,693	25,511
Summer 2008	25,929	27,760
Winter 2008-09	24,889	25,707

The IESO regularly assesses the adequacy and reliability of Ontario's power system. This 18-Month Outlook provides the IESO's assessment of the reliability of the power system from January, 2008 to June, 2009. It reflects the most up-to-date forecast information as well as experience gained from past operations.

The 18-Month Outlook is intended for operational planning purposes, and for scheduling 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

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1.0 Introduction

This Outlook covers the 18-month period from January 2008 to June 2009. It supersedes the report titled "An Assessment of the Reliability of the Ontario Electricity System from October 2007 to March 2009", dated September 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 January 2008 to June 2009" (IESO_REP_0374) (found on the IESO web site at http://www.ieso.ca/imoweb/pubs/marketReports/18Month_ODF_2007dec.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_2007dec.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_2007dec.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 periodically issues Interim Updates to the 18-Month Outlook between full Outlooks. 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.

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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 September 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. The Planned Resource scenario includes the impacts of 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 lower peak demands. Energy demand is lower due to lower industrial loads and the aforementioned conservation impacts.

2.2 Updates to Resources

There have been updates to the in-service dates of two generator projects (refer to Table 5.2). The Goreway gas-fired generating station is forecast to come into service in the last quarter of 2008. The in-service date for the Greenfield South Power Plant project is under review.

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 November 9, 2007 were used.

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 October 19, 2007 were used.

This Outlook also presents discussions on the major transmission enhancements that are forecast to be in service or are under construction within the outlook period, and the effects of generation and transmission project delays on the system's ability to supply the forecast peak demand.

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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 Weather and Demand Historical Review

The fall of 2007 was much warmer than normal for both September and October. September's peak surpassed 24,000 MW as temperatures in Toronto topped 31° C. October 2007 was particularly warm with highest average October temperature in 40 years. This however, did not lead to high peak demand since October is usually a cold weather peak month.

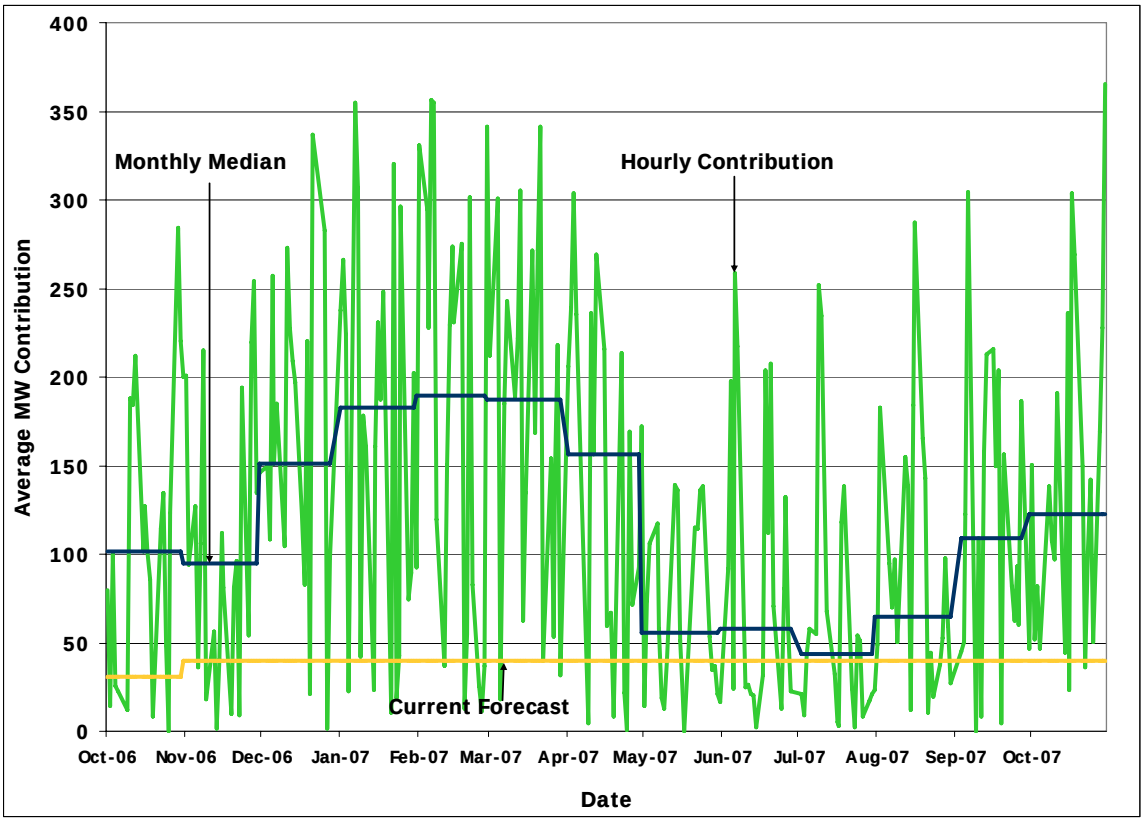
For the first ten months of 2007 energy demand is up 0.4% compared to 2006. The weather corrected energy demand is 0.4% lower on a year over year basis.

3.2 Hourly Resource Contributions at Time of Weekday Peak

The figures from 3.1 to 3.2 show the contributions made by wind generators, and hydro generators at the time of weekday peak, excluding statutory holidays, for the period from October 1, 2006 to October 31, 2007. The holiday data was removed from the display of actual hourly data, which tends to eliminate severe downward spikes in hourly contributions.

Figure 3.1 indicates the amount of wind generation contributions to the wholesale market at the time of peak demand, excluding holidays, compared to the forecast contributions. Currently, IESO forecasts available wind generation as 10 percent of installed capacity and assumes a constant contribution over a yearly basis. The forecast methodology does not account for seasonal variances in wind patterns and, thus, results in larger deviations of actual monthly median contribution from forecast during winter months as compared to summer months.

Figure 3.1 Wind Generation Contributions at the Time of Peak Demand

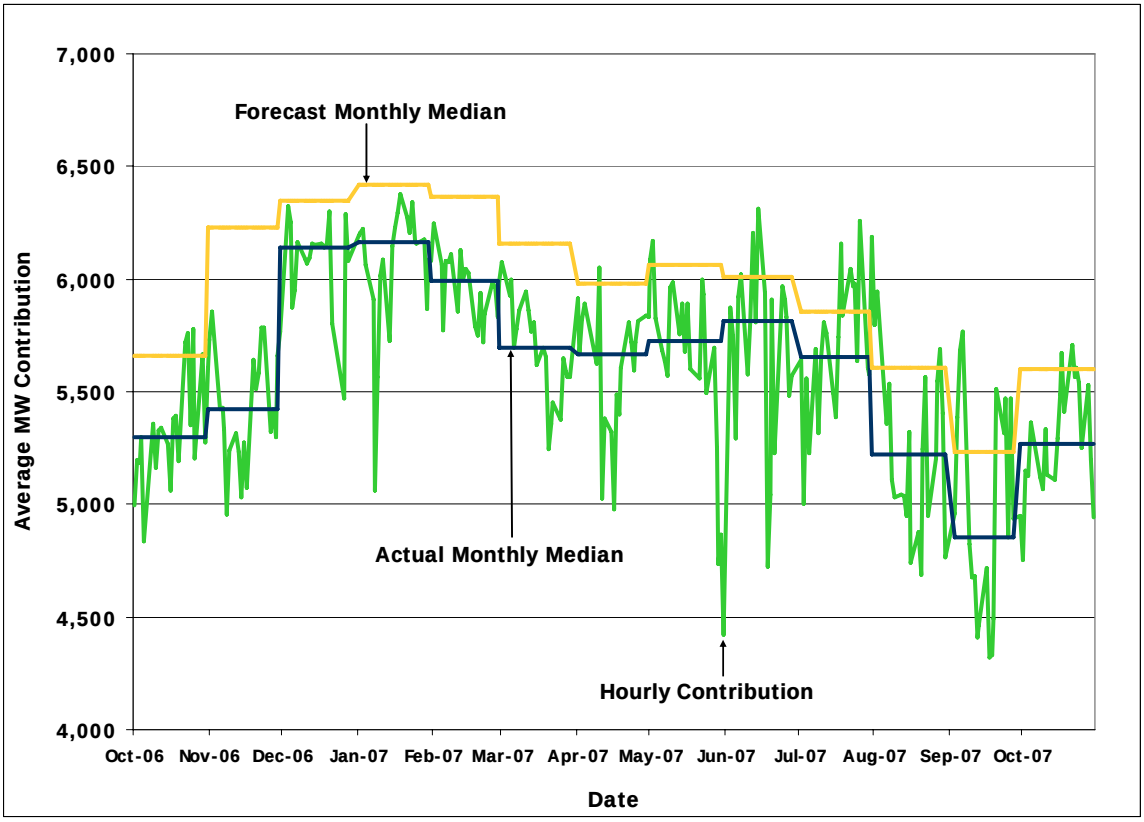


The IESO is developing monthly assumptions to forecast wind capacity contribution that will consider the actual wind data and will incorporate these in future Outlook forecasts once stakeholder review has been completed in the near future.

Figure 3.2 indicates the actual hydro contributions to energy and operating reserve markets at the time of non holiday weekday peak from October 1, 2006 to October 31, 2007, compared to forecast contributions. The forecast is based on the actual monthly median contributions from May 1, 2002 to April 30, 2007.

During the period between June 2007 and October 2007, the IESO observed an increase in hydro generation output in the northwest region of the province, combined with a decrease in load in the same region. The increase in hydro energy output was due to above normal precipitation in the area to the point where environmental and equipment concerns limited the IESO's ability to dispatch these resources. This situation, combined with both planned and forced transmission element outages, resulted in operational challenges due to the inflexible nature of these resources.

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



The IESO monitors the actual hydro contribution and periodically updates the forecast to align with the actual contribution.

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4.0 Demand Forecast

The forecast of demand has been updated to reflect the most recent economic, weather and demand information. The same economic themes that were identified in the last Outlook continue to dominate the Ontario economy. In fact, they have grown in importance over the intervening months. These issues are:

- The high Canadian dollar hurts Ontario's manufacturers. Since the last Outlook the dollar has reached parity.
- Turmoil in the financial markets hasn't caused a credit crunch but has had a negative impact on the U.S. economy. Current interest rates foster business investment and domestic consumption, fuelling vehicle sales and construction activity. A slow down in the U.S. economy could have spill over effects on Ontario's economy.
- Ontario continues to experience positive growth in construction and the service sector. However, 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.

Weather-corrected energy demand continues to lag last year's demand levels as many industrial sectors struggle with the dollar impacts. Peak demands are expected to grow as the weather sensitive portion of demand is driven by the residential and commercial sectors. Targeted conservation savings being pursued by a number of market participants, including the OPA will blunt 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.

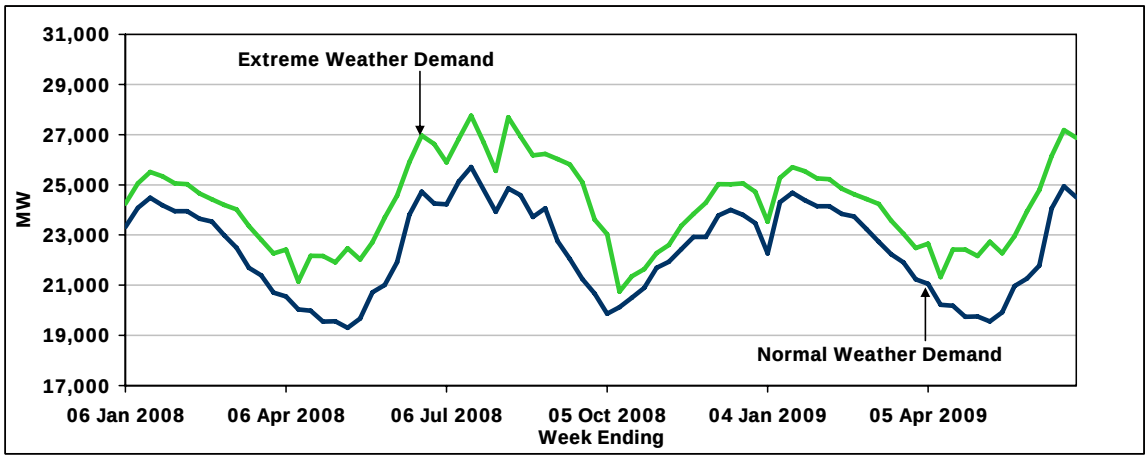
The demand forecast has two additional scenarios that differ in their treatment of conservation. The Planned Resource scenario includes the targeted impacts of conservation programs and initiatives by the OPA and electricity distributors. These impacts are decremented from the forecast. The Firm Resource 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 1.1% in 2008 (153.6 TWh) and 0.6% in 2009 (154.6 TWh). The 2008 winter monthly normal peak is predicted to be 24,485 MW and the summer 2008 monthly normal peak is expected to be 25,709 MW. Under the Planned Resource scenario energy

demand is expected to grow by 0.5% for 2008 (152.5 TWh) and shrink by 1.5% in 2009 (150.3 TWH) as the targeted levels of conservation reduce electricity demand. The monthly normal peak demands in this scenario are expected to be 23,840 MW for the winter of 2008 and 25,108 MW for the summer of 2008.

Figure 4.1 shows the Monthly Normal and Extreme (Firm Resource Scenario) 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 that 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 that are not part of the FRS.

For both scenarios, all generating resources (excluding the units that are scheduled to retire), already in-service or, once 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 PRS assumes quantities of demand measures and generation capacity based on existing resources plus significant resource changes that are scheduled to occur 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 to the existing facilities (refer to Table 5.2)

- Includes generation projects in the IESO's Connection Assessment and Approval Process (CAA) that are under construction and projects contracted by the OPA. 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.
- 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.

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 assumed vary from 398 MW to 528 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 55% 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
Ripley Wind Power Project	Southwest	Wind	76	2007-Q4	Yes	Yes
Nuclear Upgrade	N/A	Uranium	27	2007-Q4	Yes	Yes
Great Northern Tri-Gen Facility	West	Gas	12	2008-Q1	Yes	Yes
Lac Seul Project - English River	Northwest	Water	13	2008-Q1	Yes	Yes
Umbata Falls Hydroelectric Project	Northwest	Water	23	2008-Q2		Yes
Durham College District Energy Project	Toronto	Gas	2	2008-Q2		Yes
Countryside London Cogeneration Facility	West	Gas	12	2008-Q2		Yes
Portlands Energy Centre Phase I	Toronto	Gas	250	2008-Q2		Yes
Warden Energy Centre	Toronto	Gas	5	2008-Q2		Yes
Kruger Energy Port Alma Wind Power Project	West	Wind	101	2008-Q4		Yes
Greenfield Energy Centre	West	Gas	1,005	2008-Q4		Yes
Melancthon II Wind Project	Southwest	Wind	132	2008-Q4		Yes
Nuclear Upgrade	N/A	Uranium	27	2008-Q4	Yes	Yes
Wolfe Island Wind Project	East	Wind	198	2008-Q4		Yes
Enbridge Ontario Wind Power Project	Southwest	Wind	200	2008-Q4		Yes
Goreway Station	Toronto	Gas	860	2008-Q4		Yes
Retirement of Lower Sturgeon 25 Hz generation to convert to 60 Hz	Northeast	Water	-5	2009-Q1 (1)	Yes	Yes
St. Clair Energy Centre	West	Gas	570	2009-Q1		Yes
Return of Unit 7 at Beck 1 as a 60 Hz unit	Niagara	Water	59	2009-Q1	Yes	Yes
Retirement of Sandy Falls 25 Hz generation to convert to 60 Hz	Northeast	Water	-3	2009-Q2 (1)	Yes	Yes
Retirement of the 25 Hz Frequency Changer and Units 1 & 2 at Beck 1	Niagara	Water	-50	2009-Q2	Yes	Yes
Algoma Energy Cogeneration Facility	Northeast	Industrial Gas	63	2009-Q2		Yes
Portlands Energy Centre Phase II	Toronto	Gas	288	2009-Q2		Yes
Bruce Unit 2	Bruce	Uranium	750	2009-Q2		Yes
Total			**4,613**			

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 130 MW.

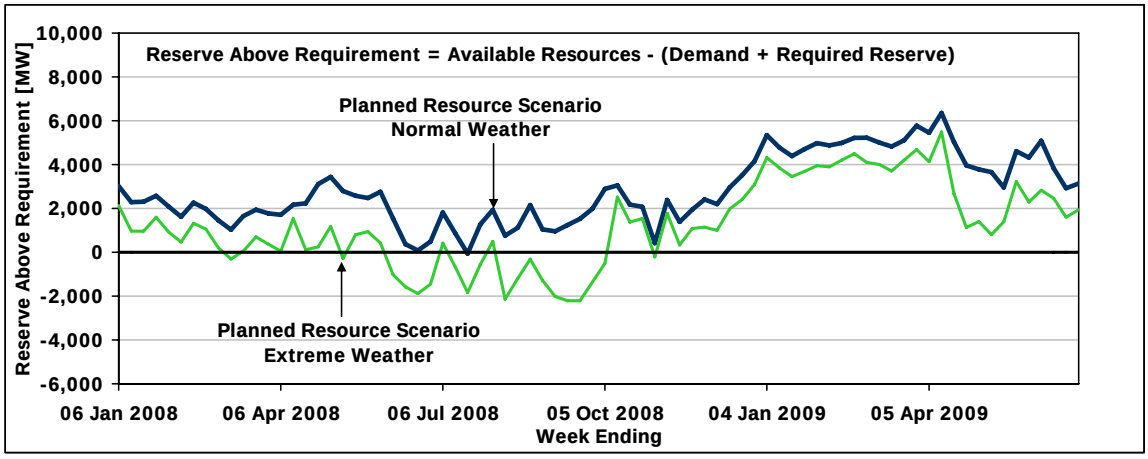
The generation capability assumptions are as follows:

- 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 FRS 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:

A. Existing Installed Resources: total capacity of 31,214 MW (refer to Table 5.1).

B. Capacity changes to some existing facilities.

C. Additional generating resources that have started their commissioning activities with contributions beginning on the date that the facility is expected to be in-service.

D. 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.

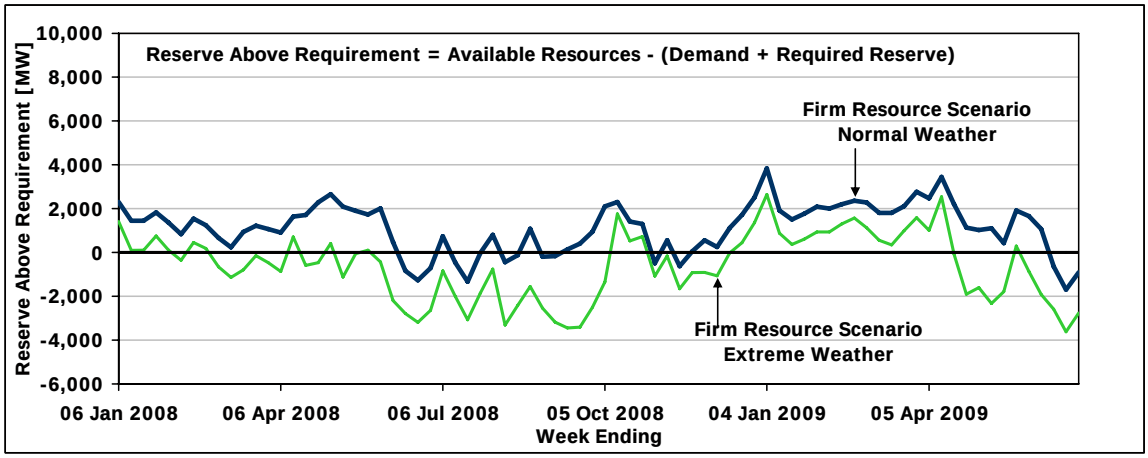
E. Existing demand measures assumed at 285 MW for the entire period of the Outlook (refer to column "Demand Measures" in Table A1 or A5 in Appendix A). Demand values (Table A3 in Appendix A) exclude targeted conservation.

With respect to forecasts of generation capabilities, the FRS is based on the same assumptions as the PRS.

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	Winter Peak 2008		Summer Peak 2008		Winter Peak 2009	
		Firm Resource Scenario	Planned Resource Scenario	Firm Resource Scenario	Planned Resource Scenario	Firm Resource Scenario	Planned Resource Scenario
1	Installed Resources (MW)	31,317	31,317	31,341	31,633	31,368	34,156
2	Imports (MW)	0	0	0	0	0	0
3	Total Resources (MW)	31,317	31,317	31,341	31,633	31,368	34,156
4	Total Reductions in Resources (MW)	2,510	2,418	3,295	3,288	2,428	3,265
5	Demand Measures (MW)	285	398	285	528	285	528
6	Available Resources (MW)	29,092	29,297	28,331	28,874	29,225	31,419

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.

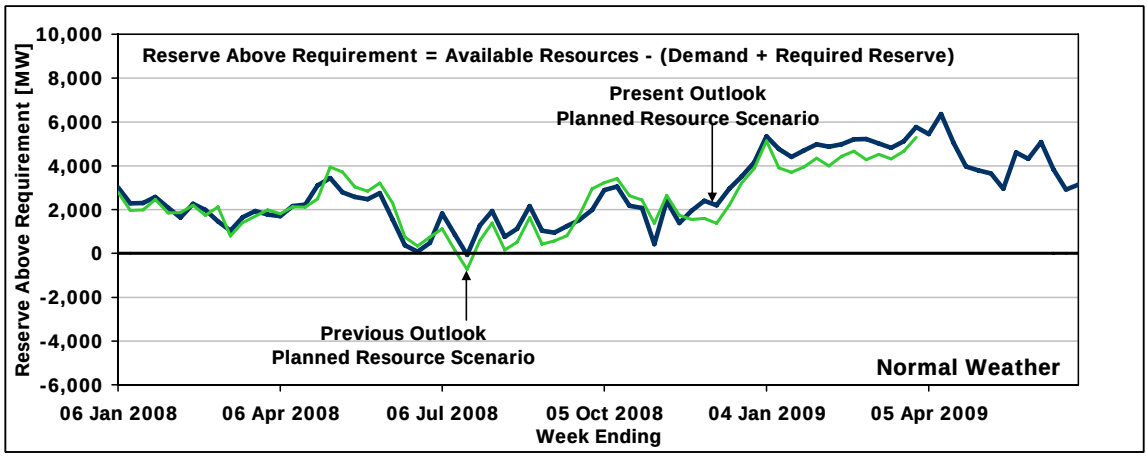
5. Demand Measures: This is the amount of demand assumed available to be reduced, under each resource scenario.

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 September 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 FRS and the PRS should be assessed bearing in mind the risks discussed below.

5.4.1 Extreme Weather

The FRS and the PRS 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 FRS and the PRS 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, conservation programs and demand measures within Ontario.

5.4.2 New Resource Risks

For the 18 month period under study, the improving demand-supply situation, seen mainly in the PRS, is dependent on the additional generation, conservation programs 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 for a significant number of the new supply projects and transmission enhancements are 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.

The OPA monitors and reports the progress of new resource projects at their web site found below:
http://www.powerauthority.on.ca/Page.asp?PageID=1212&SiteNodeID=123

5.4.3 Extensions to Generator Planned Outages

A number of large generating units are scheduled to return to service from outage prior to winter 2007/2008 and 2008/2009 and summer 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 Lower than Forecast Generator Availability

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.

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 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 in the near future.

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 and high ambient temperature deratings, may be more likely to occur at roughly the same time as the extreme weather conditions that drive peaks in demand.

In particular, there are risks that gas-fired generators may not be capable of producing the maximum capacity that the market participant has forecast to be available at the time of peak. This risk is highest during periods of high gas demand and low gas resource availability or due to gas transmission constraints. IESO is actively involved in the Ontario Gas Electric Interface Coordination Working Group to complete initiatives to mitigate these risks,

The natural gas and electricity sectors are converging as natural gas becomes one of the preferred fuels in North America for electric power generation. The IESO, in cooperation with the interconnected gas pipeline operators is developing the following initiatives:

- an Ontario gas-electric communications protocol procedure, and
- a framework for conducting gas and electricity contingency studies.

The communications protocol between the gas and electricity industries is to facilitate information exchanges for the resolution of operational issues under a variety of scenarios including periods of high demand, low resource availability or transmission constraints as they affect Ontario natural gas fired power generation. The gas electric framework is expected to assist in understanding how the gas transportation industry can affect electrical system operations and vice versa. It also provides direction for the evaluation of possible gas-electric events and contingencies that have impact on gas and electric infrastructure. These initiatives are expected to enhance the reliability of the IESO Controlled Grid as generators become dependent on the natural gas transmission.

5.4.8 Transmission Constrained Resource Utilization

There is a risk that, due to multiple unplanned outages transmission constraints occur more often than expected, or have greater impact than expected on the ability to deliver generation to load centres. Transmission equipment failures could occur and 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. A large number of transmission limitations are modeled in accordance with the recognized reliability standards. There is a risk that certain transmission limitations resulting from multiple forced transmission outages, which may not be modeled, may have an unforeseen impact.

There is also a risk that these limitations may occur due to weather conditions that result in high demand and also contribute to higher than normal equipment failure rates. 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 becomes 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 Intertie Transactions

There is a risk that transactions scheduled with neighbouring markets fail to be completed in real time. This results in changes to real-time dispatch being necessary to make up for the changes in earlier identified schedules. This can result in decreased power system reliability. The IESO is currently clarifying the issue of failed export transactions with the New York Independent System Operator. A proposal has been made that would result in more of the failed exports being deemed to be within the market participant control therefore triggering the appropriate failure charge. This change is expected to drive more appropriate market participant behaviour providing the incentive for them to make the suitable scheduling decisions. This should result in fewer failed transactions.

The IESO is working with the Midwest Independent System Operator on an intertie scheduling protocol to permit the timely release of transmission service. Once in place, the participant wishing to have transactions in the Ontario market will be able to acquire transmission service in

MISO to enable greater scheduling success. This greater scheduling success is expected to lead to an improvement in reliability.

There is a reliability risk due to both import and export transaction failures, but the impact of a failed import transaction may be greater. Import 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. The transaction failure rate continues to decrease since the implementation of the Day Ahead Commitment Process and day ahead and real time intertie failure charges.

5.4.10 Conservation and Demand Management

Since the targeted levels of conservation and demand management are significant, there is an associated risk should actual results fall short of those targets. The risk comes from both the level and the timing of conservation and demand management impacts. The PRS includes the impact of those targets and allows the IESO to study the benefits to system reliability from conservation and demand management programs. However, due to the ambitious nature of these targets it is prudent to study system reliability under the FRS which does not include those demand reductions.

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6.0 Transmission Reliability Assessment

This section provides an assessment of the reliability of the Ontario transmission system for the 18 month study period of this Outlook.

A main objective of the transmission reliability assessment is to introduce all major transmission and load supply projects that are planned for completion during the next 18 months and to present their reliability benefits.

A second objective 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.

A third objective 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, planned transmission outages are reviewed in correlation with major resources planned outages and also the scheduled completion dates of new generation and transmission projects to identify transmission system reliability concerns and to highlight those outages that should be rescheduled or changed.

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. 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 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, Ontario transmitters and 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 other cases the IESO found that the local transmission system may be reaching its maximum 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.

Transmission assessments performed by transmitters in collaboration with local distribution companies also identified transmission reinforcements required to ensure adequate supply of the Ontario electricity demand. The required reinforcements were also confirmed by the IESO during connection assessments performed for various new facilities. A number of such transmission reinforcements are currently under construction and planned for service during the study period of this Outlook. The new Essa to Stayner 230 kV transmission line, the new Cambridge-Preston autotransformer, the Hurontario switching station, the 230 kV transmission line to Jim Yarrow TS and voltage support devices installed at number of stations are examples of new transmission reinforcements that will be in service by the middle of 2009 and result in an increase in load supply security.

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.

6.3 Planned Transmission Outages

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 additional outage requirements and changes are expected 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 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 interconnection limits. Where multiple outages are scheduled during the same period, the combined effect of all outages on the reduction in transmission interface and 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).

The planned transmission outages are also reviewed in correlation with major resources planned outages and also the scheduled completion dates of new generation and transmission projects 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. 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 October 19, 2007 were used.

There is a substantial number of planned outages identified during the period of this Outlook that are required to accommodate system maintenance or future changes. Their specific impact on reliability is identified in subsequent sections of this report.

6.4 Transmission System Adequacy

The Ontario transmission system with the planned system enhancements is expected to be adequate to supply the demand under the normal weather conditions forecast for the 18-month period of this Outlook.

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 for the conditions forecast 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. It is expected that the IESO will require rescheduling of some of the system planned outages at Cherrywood TS for winter 2008, to maintain system reliability.

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 2008 and 2009. IESO has also been working closely with the OPA to specify the locations, timing and minimum generation requirements to satisfy reliability standards.

6.4.1 Toronto and Surrounding Area

The greater Toronto area electricity supply is mainly provided by the Trafalgar, Claireville, Parkway and Cherrywood autotransformers and Pickering GS units as depicted in Figure 6.1. The availability of these facilities is critical to ensure adequate electricity supply for Toronto and surrounding area.

Figure 6.1 Greater Toronto Area Electricity System

Following this year's higher than normal forced outage rate associated with the 500/230 kV autotransformers, Hydro One implemented an extensive auto transformer remediation program. Two new spare autotransformers will be available close to the end of 2008.

For the summer 2008 extreme weather forecast conditions, the projected power flows over the Trafalgar, Claireville and Cherrywood autotransformers, with all elements in service, are expected to be within their continuous capability but the total station spare capability will be low. For example, the spare capability at Claireville, the highest loaded autotransformer station in the area, may go as low as 4%. With one autotransformer out of service the continuous capability of

some autotransformers may be exceeded but the loading will be within their long term emergency capability, which is only available for a limited time. Load reduction measures may be required following the forced outage of one additional autotransformer at Claireville or Cherrywood to reduce the remaining autotransformer loadings within applicable limits.

During summer 2008, to reliably supply GTA loads under extreme weather forecast conditions, all autotransformers at Trafalgar, Claireville, Parkway and Cherrywood and a minimum of four Pickering units are required. Under these minimum conditions equipment loading should not exceed the long term emergency capability following the forced outage of one autotransformer at Trafalgar, Claireville and Parkway or one additional Pickering unit. Subsequent forced outages may require load curtailment to reduce the loading of remaining autotransformers within long term emergency limits.

Cherrywood autotransformer loading is strongly influenced by Pickering generation. If two Pickering units connected to the same 230 kV Cherrywood bus are unavailable, load reduction measures may be required to prevent equipment overloading following the loss of one Cherrywood autotransformer connected to the same bus. Availability of the Portlands Energy Centre generation may reduce, but not eliminate, the necessary amount of load curtailment.

The Parkway autotransformers are adequate to supply the load forecast within the timeframe of this Outlook. Under certain conditions their spare capability may be useful for temporary relief of the Claireville or Cherrywood autotransformers.

Power advisories for the GTA may be issued following outages of more than two Pickering units or a single autotransformer in the GTA. Supplementary contingencies or 500 kV line outages may require load reduction measures ranging from voltage reduction to load curtailment, to control equipment loadings or system voltages in the GTA.

Timely completion of the Portland Energy Centre phase 1, currently scheduled to go in service in spring 2008, and phase 2, currently scheduled to go in service in spring 2009, will also alleviate possible future overloads of the Manby TS and Leaside TS autotransformers.

Completion of the John TS to Esplanade TS link by Hydro One in the spring of 2008 will enhance supply reliability to central Toronto by providing an additional 90 MW of load transfer capability from Leaside to the Manby West supply.

The shunt capacitor at Richview TS which suffered significant damage at the beginning of 2007, as reported in the previous Outlook Report, will be returned to service at full capacity before the end of 2007.

OPG has confirmed that the reactive restrictions on Pickering GS identified in the previous 18-month Outlook have been removed. Therefore with the Richview shunt capacitor at original capacity and existing reactive capability at Pickering, the IESO expects to be able to supply the extreme weather forecast GTA demand assuming that the availability of Pickering generation will be comparable to summer 2005 and 2006 and not as low as it was during summer 2007. Nevertheless, under certain demand or outage conditions, the portion of the grid supplying the GTA may still be stressed.

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. A new transformer station is planned to be in service before the end of 2009. Until then, 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 Southwest Zone

Planned refurbishments at the Bruce nuclear station and proposed wind farm developments in southwestern Ontario will result in increased generation capacity from that region. To avoid the potential bottling of this generation a number of transmission enhancements are planned for the near term and the long term. Reinforcements that will increase the transfer capability out of Bruce in the near term, to allow the incorporation of Bruce unit 2, include the up-rating of the Hanover to Orangeville 230 kV circuits and the installation of additional voltage support facilities at Buchanan, Middleport and Nanticoke. These projects are of a high priority and are planned for completion during 2009.

In addition to the near-term reinforcements described above, interim measures are being explored to reduce potential bottling until a new 500 kV line between Bruce to Milton is placed in service. In the longer-term, the new 500 kV double-circuit line from Bruce to Milton will provide the required transmission capability to deliver the full benefits of the Bruce refurbishment project and the development of new renewable resources in the area.

The first phase of a major manufacturing development in the Woodstock area is now complete. The new load will increase the stresses on the transmission system and might result, during extreme weather conditions, in 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, installing a new transformer station and installing additional low voltage shunt capacitors. This plan will provide an increased level of supply reliability, and support further load growth in the area.

Multiple long term outages associated with transmission equipment at Nanticoke and Middleport are scheduled during the first and second quarter of 2008 and will result in a reduction in Flow Away from Bruce Complex (FABC) of up to 250 MW.

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 2010. This work will alleviate concerns related to the ability of the transmission system to supply the Burlington area loads.

6.4.3 Niagara Zone and the New York Interconnection

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 the use of both the 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.

Outages associated with the Ontario to New York interconnection circuits at Niagara, scheduled for the spring of 2008, will reduce the import and export capability of the Ontario-New York interconnection at Niagara by up to 550 MW. The outages are required by the New York Power Authority (NYPA) to allow dam inspection at their Lewiston facilities. An examination of the planned Ontario resources for this period revealed several weekly periods when major Ontario

generators are also scheduled for outage. The resource adequacy assessment results show that under the Planned Resource Scenario and normal weather conditions the Reserve above Requirement levels are positive. This indicates that Ontario may not need to rely on imports to supply the forecast demand for this period and the reduced import capability is not a concern. However, for the extreme weather scenario the Reserve above Requirement levels are negative and the system reliability could be affected due to the combined effect of interconnection and generation outages. The IESO will be monitoring the situation closely and will take any necessary mitigating action.

6.4.4 East Zone and Ottawa Zone

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

The new Reliability Must Run (RMR) contract with OPG for Lennox GS that covers the period October 2007 to September 2008 has reached the final stages of OEB consideration and is expected to be approved before this year's end. Studies performed by the IESO indicate 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, the resulting transmission improvements in the Ottawa area may reduce 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. This resource adequacy requirement cannot be achieved through an RMR under the current Market Rules. The Integrated Power System Plan filed by the OPA with the OEB in August assumes that Lennox remains in service and is categorized as a planned gas resource starting in 2011.

6.4.5 West Zone and the Michigan Interconnection

Extensive work needs to be completed at the Lambton switchyard to prepare the power system to reliably incorporate additional generation facilities consisting of Greenfield Energy Centre and St. Clair Power. 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.

The multiple outages related to Lambton and Sarnia-Scott station reconfigurations and refurbishments, Longwood station equipment refurbishments and other line work scheduled throughout 2008 will result in significant reductions in the FABC limit, the Buchanan Longwood Input (BLIP) limit and the Negative Buchanan Longwood Input (NBLIP) limit as well as a reduction of the import and export capability of the Ontario - Michigan interconnection. Outages that are coincident with the winter peak periods could reduce the FABC limit by up to 300 MW, and the BLIP/NBLIP limit by up to 700 MW. Outages that are coincident with the summer peak periods could also reduce the FABC limit by up to 250 MW, the BLIP/NBLIP limit by up to 500

MW and the import/export capability on the Michigan interconnection by up to 300 MW. Most of these outages are not recallable.

Other outages affecting these interfaces are: EPCOR Kingsbridge tap connection to the 500 kV circuit from Bruce to Longwood that could reduce the FABC by up to 1050 MW and BLIP/NBLIP by up to 700 MW and transmission line upgrades for 230 kV circuits from Scott to Buchanan that could reduce the FABC by up to 250 MW and BLIP/NBLIP by up to 500 MW.

An assessment of the scheduled generation outages in conjunction with the transmission outages and in conjunction with 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 for an extensive range of circumstances.

Phase angle regulators (PARs) are installed on the Michigan - Ontario interconnection at Lambton TS and Scott TS but are not available to regulate flows except in emergencies. 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.

Hydro One and the International Transmission Company have recently signed a facility agreement on the Michigan-Ontario interconnection phase angle regulators. Amended operating agreements and instructions are now required between the IESO and Hydro One, and the IESO and the Mid-west ISO, before all phase angle regulators become operational. The operation of the phase angle regulators can control circulating flows and assist in management of system congestion.

6.4.6 Northern Ontario

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.

Extensive line work that's scheduled to begin early 2008 and last for most of the year is required to replace tower structures of the 230 kV circuits in the Kenora area. This series of outages can reduce the Ontario – Manitoba interface transfer capacity by up to 250 MW and result in a reduction of the North West - North East interface capability by up to 75 MW.

6.4.7 Ontario 25 Hz System

The gradual retirement of the Niagara 25 Hz system is well underway. As mention in previous Outlooks, the IESO advised the 25 Hz customers in 2005 that the 25 Hz supply would be retired in April 2009, and in January 2007 National Grid, a transmission entity in the United States, informed the IESO that it had retired the US portion of the Niagara 25 Hz system. These activities pave the way for the retirement of the supporting transmission and generation facilities

at the Sir Adam Beck 1 Generating Station. The IESO has approved the decertification request for the 25 Hz Niagara frequency changer and the remaining 25 Hz generation units at Beck No.1 effective April 30, 2009.

In the Northeastern Ontario most of the 25 Hz generation facilities are scheduled to be retired in the first half of 2009 and Ontario Power Generation is planning to commence the replacement of these generating facilities with 60 Hz facilities shortly after. There is no longer any 25 Hz load in Northern Ontario.

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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 77 of 78 weeks in the study period. Reserves are forecast to be above requirements for all but one week of the Outlook timeframe. Where this situation occurs, Ontario may need to rely on external supplies. 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 generator owners will consider any future outages when reserve level are positive.
- Under the Firm Resource-Normal Weather Scenario, the reserves are forecast to be below requirements for 15 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	- there is only one week when reserves are lower than required (imports potentially required) - opportunities for additional outages/exports exist in most other weeks	- many planned outages at risk - imports required during some peak periods - higher risk of requiring emergency operating procedures
Firm Resource Scenario	- there are 15 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	- many planned outages at risk - imports required during some peak periods - higher risk of requiring emergency operating procedures

- Under the normal weather scenario, sufficient resources will be available within Ontario to meet expected requirements during all but one week over the next year and a half. For this to occur, all of the planned resource additions must meet their stated in service targets and the aggressive conservation targets set by the Ontario Power Authority (OPA) must be achieved. Even if that does occur, Ontario may need to rely on imports from neighbouring

jurisdictions to maintain reliability if extreme weather occurs or if equipment performance is below normal.

- For the 18 month period under study, the improved demand-supply situation for the Planned Resource Scenario is dependent on the additional generation, conservation programs 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 summer 2008. Meeting these planned outage schedules is critical to maintaining adequate reserve levels over the peak season.
- The reserves are above requirements during the winter under the Normal Weather, Planned Resource Scenario allowing opportunities for additional generator outages in these periods. 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 entered into a Reliability Must Run Contract with OPG for Lennox GS until the end of September 2007. A subsequent contract for another year's duration is before the Ontario Energy Board for its consideration. 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 it's 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.
- 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 is helpful in identifying situations where actual resource availability differs from the assumed forecast capability. Specifically, the IESO will be reviewing the ability of certain generators to provide stretch capability in future 18-Month Outlooks.

Transmission Adequacy

- The Ontario transmission system is expected to be adequate to supply the 2008 and 2009 demand under forecast conditions.
- As experienced in the summer of 2007, reliability of supply to the GTA is dependent on both generation and transmission facilities. To minimize the risks to the GTA as the summer of 2008 approaches, the IESO will closely monitor four key aspects:
    - availability and general condition of the 12 autotransformers feeding the GTA from Claireville, Trafalgar Parkway and Cherrywood TS,
    - availability of no less than four Pickering units during the summer months, and
    - progress of Portlands Phase 1, expected in service just prior to summer 2008

- The IESO expects to be able to supply the extreme weather forecast GTA demand assuming all autotransformers at Trafalgar, Claireville, Parkway and Cherrywood and a minimum of four Pickering units are available. However, subsequent forced outages may require power advisories or load curtailment to bring equipment loading within acceptable limits.
- Eleven new and upgraded load supply transformer stations will be placed in service during the timeframe of this Outlook and shortly after to help relieve loadings of exiting transformer stations and provide additional transformer capacity for future load growth.
- A number of transmission reinforcements required to ensure adequate supply to meet the Ontario electricity demand in the near future are currently under construction and planned to be in service during the study period of this Outlook.
- 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.
- The 1,250 MW interconnection between Hawthorne TS in Ontario and Outaouais station in Québec is scheduled for completion by March 31, 2009. The construction of the 230 kV double circuit line from Hawthorne to the border is planned for completion by November 2008.
- The multiple outages related to Lambton and Sarnia-Scott station reconfigurations and refurbishments, Longwood station equipment refurbishments and other lines work scheduled during 2008 will result in a significant reduction in FABC limit, BLIP limit and NBLIP limit as well as a reduction of the import and export capability of the Ontario - Michigan interconnection. Major concerns were not identified with respect to the adequacy of the transmission system to supply the load or to the reduced capability of the Michigan to Ontario interconnection for the period of these outages.
- Hydro One and the International Transmission Company have recently signed a facility agreement on the Michigan-Ontario interconnection phase angle regulators. Amended operating agreements and instructions are now required between the IESO and Hydro One, and the IESO and the Mid-west ISO, before all phase angle regulators become operational. The operation of the phase angle regulators can control circulating flows and assist in management of system congestion.
- 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.
- The retirement of the Niagara 25 Hz system and the deregistration of all the Northeast 25 Hz generation stations except one, will be completed during the period covered in this Outlook report.

- End of Section -

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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
06-Jan-08	31,317	2,904	285	28,698	26,398	23.1	5,376	13.2	3,076	2,300
13-Jan-08	31,317	3,010	285	28,592	27,149	18.7	4,512	12.8	3,069	1,443
20-Jan-08	31,317	2,510	285	29,092	27,646	18.8	4,607	12.9	3,161	1,446
27-Jan-08	31,317	2,377	285	29,225	27,405	20.8	5,038	13.3	3,218	1,820
03-Feb-08	31,317	3,193	285	28,409	27,040	18.6	4,461	12.9	3,092	1,369
10-Feb-08	31,329	3,736	285	27,878	27,042	16.4	3,926	12.9	3,090	836
17-Feb-08	31,329	3,333	285	28,281	26,743	19.6	4,630	13.1	3,092	1,538
24-Feb-08	31,329	3,835	285	27,779	26,541	18.0	4,241	12.8	3,003	1,238
02-Mar-08	31,329	4,886	285	26,728	26,055	16.3	3,738	13.3	3,065	673
09-Mar-08	31,341	5,634	285	25,992	25,750	15.6	3,502	14.5	3,260	242
16-Mar-08	31,341	6,053	285	25,573	24,637	17.9	3,875	13.6	2,939	936
23-Mar-08	31,341	6,064	285	25,562	24,334	19.5	4,169	13.8	2,941	1,228
30-Mar-08	31,341	6,927	285	24,699	23,630	19.3	4,000	14.2	2,931	1,069
06-Apr-08	31,341	7,110	285	24,516	23,609	19.3	3,970	14.9	3,063	907
13-Apr-08	31,341	7,147	285	24,479	22,844	22.2	4,445	14.0	2,810	1,635
20-Apr-08	31,341	7,134	285	24,492	22,781	22.5	4,504	14.0	2,793	1,711
27-Apr-08	31,341	7,187	285	24,439	22,149	25.0	4,889	13.3	2,599	2,290
04-May-08	31,341	6,550	285	25,076	22,411	28.2	5,511	14.6	2,846	2,665
11-May-08	31,341	7,346	285	24,280	22,192	25.8	4,979	15.0	2,891	2,088
18-May-08	31,341	6,880	285	24,746	22,844	25.8	5,075	16.1	3,173	1,902
25-May-08	31,341	5,771	285	25,855	24,123	24.8	5,141	16.5	3,409	1,732
01-Jun-08	31,341	5,300	285	26,326	24,318	25.3	5,315	15.7	3,307	2,008
08-Jun-08	31,341	5,985	285	25,641	25,174	17.0	3,724	14.9	3,257	467
15-Jun-08	31,341	4,959	285	26,667	27,501	12.0	2,856	15.5	3,690	-834
22-Jun-08	31,341	4,233	285	27,393	28,666	10.8	2,665	15.9	3,938	-1,273
29-Jun-08	31,341	4,081	285	27,545	28,263	13.6	3,290	16.5	4,008	-718
06-Jul-08	31,341	3,294	285	28,332	27,596	17.0	4,107	13.9	3,371	736
13-Jul-08	31,341	3,295	285	28,331	28,801	12.7	3,199	14.6	3,669	-470
20-Jul-08	31,341	3,295	285	28,331	29,660	10.2	2,622	15.4	3,951	-1,329
27-Jul-08	31,341	3,295	285	28,331	28,355	14.2	3,515	14.3	3,539	-24
03-Aug-08	31,341	3,541	285	28,085	27,284	17.4	4,159	14.0	3,358	801
10-Aug-08	31,341	3,566	285	28,060	28,497	12.9	3,201	14.6	3,638	-437
17-Aug-08	31,341	3,566	285	28,060	28,181	14.1	3,470	14.6	3,591	-121
24-Aug-08	31,341	3,566	285	28,060	26,980	18.3	4,344	13.8	3,264	1,080
31-Aug-08	31,341	4,521	285	27,105	27,300	12.6	3,037	13.4	3,232	-195
07-Sep-08	31,341	5,384	285	26,242	26,406	15.3	3,488	16.1	3,652	-164
14-Sep-08	31,341	5,899	285	25,727	25,586	16.7	3,688	16.1	3,547	141
21-Sep-08	31,341	6,645	285	24,981	24,572	17.6	3,733	15.6	3,324	409
28-Sep-08	31,341	7,510	285	24,116	23,169	16.7	3,452	12.1	2,505	947

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
05-Oct-08	31,341	6,942	285	24,684	22,574	24.3	4,820	13.6	2,710	2,110
12-Oct-08	31,341	6,562	285	25,064	22,763	24.5	4,938	13.1	2,637	2,301
19-Oct-08	31,341	7,168	285	24,458	23,044	19.3	3,956	12.4	2,542	1,414
26-Oct-08	31,341	6,593	285	25,033	23,726	19.8	4,142	13.6	2,835	1,307
02-Nov-08	31,341	7,594	285	24,032	24,524	10.8	2,336	13.0	2,828	-492
09-Nov-08	31,368	6,457	285	25,196	24,644	14.9	3,259	12.3	2,707	552
16-Nov-08	31,368	6,973	285	24,680	25,308	10.0	2,244	12.8	2,872	-628
23-Nov-08	31,368	5,738	285	25,915	25,862	13.0	2,988	12.8	2,935	53
30-Nov-08	31,368	5,223	285	26,430	25,872	15.3	3,501	12.8	2,943	558
07-Dec-08	31,368	4,603	285	27,050	26,803	13.7	3,268	12.7	3,021	247
14-Dec-08	31,368	3,562	285	28,091	26,972	17.0	4,084	12.4	2,965	1,119
21-Dec-08	31,368	3,077	285	28,576	26,858	20.1	4,773	12.8	3,055	1,718
28-Dec-08	31,368	2,561	285	29,092	26,577	23.9	5,618	13.2	3,103	2,515
04-Jan-09	31,368	2,561	285	29,092	25,260	30.7	6,826	13.5	2,994	3,832
11-Jan-09	31,368	2,409	285	29,244	27,330	20.3	4,943	12.5	3,029	1,914
18-Jan-09	31,368	2,428	285	29,225	27,718	18.4	4,543	12.3	3,036	1,507
25-Jan-09	31,368	2,402	285	29,251	27,481	20.0	4,864	12.7	3,094	1,770
01-Feb-09	31,368	2,409	285	29,244	27,153	21.1	5,096	12.4	3,005	2,091
08-Feb-09	31,363	2,465	285	29,183	27,186	20.8	5,031	12.6	3,034	1,997
15-Feb-09	31,363	2,578	285	29,070	26,865	21.9	5,224	12.7	3,019	2,205
22-Feb-09	31,363	2,578	285	29,070	26,712	22.4	5,325	12.5	2,967	2,358
01-Mar-09	31,363	3,058	285	28,590	26,306	23.1	5,357	13.2	3,073	2,284
08-Mar-09	31,422	3,892	285	27,815	26,005	22.4	5,088	14.4	3,278	1,810
15-Mar-09	31,422	4,883	285	26,824	25,020	20.6	4,589	12.5	2,785	1,804
22-Mar-09	31,422	4,883	285	26,824	24,713	22.4	4,913	12.8	2,802	2,111
29-Mar-09	31,422	4,903	285	26,804	24,039	26.2	5,568	13.2	2,803	2,765
05-Apr-09	31,418	5,268	285	26,436	23,968	25.6	5,383	13.9	2,915	2,468
12-Apr-09	31,418	5,110	285	26,594	23,151	31.5	6,377	14.5	2,934	3,443
19-Apr-09	31,418	6,371	285	25,333	23,131	25.5	5,154	14.6	2,952	2,202
26-Apr-09	31,418	8,086	285	23,618	22,478	19.7	3,881	13.9	2,741	1,140
03-May-09	31,418	8,086	285	23,618	22,597	19.6	3,866	14.4	2,845	1,021
10-May-09	31,368	8,110	285	23,544	22,443	20.4	3,986	14.8	2,885	1,101
17-May-09	31,368	8,174	285	23,480	23,054	17.9	3,562	15.7	3,136	426
24-May-09	31,368	5,489	285	26,165	24,253	24.8	5,205	15.7	3,293	1,912
31-May-09	31,368	5,489	285	26,165	24,511	23.1	4,904	15.3	3,250	1,654
07-Jun-09	31,368	5,678	285	25,976	24,910	19.3	4,195	14.4	3,129	1,066
14-Jun-09	31,368	4,673	285	26,981	27,627	12.1	2,920	14.8	3,566	-646
21-Jun-09	31,368	4,538	285	27,116	28,813	8.7	2,170	15.5	3,867	-1,697
28-Jun-09	31,368	4,108	285	27,546	28,450	12.4	3,045	16.1	3,949	-904

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
06-Jan-08	31,317	2,919	398	28,796	25,773	26.8	6,091	13.5	3,068	3,023
13-Jan-08	31,317	2,926	398	28,789	26,505	22.8	5,345	13.1	3,061	2,284
20-Jan-08	31,317	2,418	398	29,297	26,993	22.9	5,457	13.2	3,153	2,304
27-Jan-08	31,317	2,393	398	29,322	26,748	24.6	5,781	13.6	3,207	2,574
03-Feb-08	31,317	3,204	398	28,511	26,416	22.2	5,181	13.2	3,086	2,095
10-Feb-08	31,329	3,741	398	27,986	26,361	20.0	4,655	13.0	3,030	1,625
17-Feb-08	31,329	3,338	398	28,389	26,124	23.2	5,351	13.4	3,086	2,265
24-Feb-08	31,329	3,824	398	27,903	25,928	21.7	4,969	13.1	2,994	1,975
02-Mar-08	31,329	4,890	398	26,837	25,382	20.0	4,467	13.5	3,012	1,455
09-Mar-08	31,341	5,649	398	26,090	25,058	19.2	4,206	14.5	3,174	1,032
16-Mar-08	31,341	6,068	398	25,671	24,025	21.7	4,575	13.9	2,929	1,646
23-Mar-08	31,341	6,079	398	25,660	23,724	23.4	4,866	14.1	2,930	1,936
30-Mar-08	31,341	6,941	398	24,798	23,024	23.4	4,694	14.5	2,920	1,774
06-Apr-08	31,341	7,124	528	24,745	23,035	23.8	4,756	15.2	3,046	1,710
13-Apr-08	31,341	7,420	528	24,449	22,284	25.5	4,966	14.4	2,801	2,165
20-Apr-08	31,341	7,429	528	24,440	22,212	25.8	5,014	14.3	2,786	2,228
27-Apr-08	31,341	7,149	528	24,720	21,613	30.0	5,702	13.6	2,595	3,107
04-May-08	31,364	6,561	528	25,331	21,893	32.9	6,275	14.9	2,837	3,438
11-May-08	31,364	7,383	528	24,509	21,716	30.1	5,672	15.3	2,879	2,793
18-May-08	31,364	6,949	528	24,943	22,366	29.8	5,732	16.4	3,155	2,577
25-May-08	31,364	5,764	528	26,128	23,651	29.0	5,867	16.7	3,390	2,477
01-Jun-08	31,364	5,335	528	26,557	23,798	29.5	6,047	16.0	3,288	2,759
08-Jun-08	31,633	5,978	528	26,184	24,646	22.4	4,790	15.2	3,252	1,538
15-Jun-08	31,633	4,952	528	27,210	26,838	17.0	3,945	15.4	3,573	372
22-Jun-08	31,633	4,226	528	27,936	27,858	16.1	3,871	15.8	3,793	78
29-Jun-08	31,633	4,089	528	28,073	27,591	18.4	4,367	16.4	3,885	482
06-Jul-08	31,633	3,330	528	28,832	27,015	21.9	5,183	14.2	3,366	1,817
13-Jul-08	31,633	3,288	528	28,874	28,011	18.0	4,395	14.4	3,532	863
20-Jul-08	31,633	3,288	528	28,874	28,933	15.0	3,766	15.2	3,825	-59
27-Jul-08	31,633	3,288	528	28,874	27,609	19.3	4,676	14.1	3,411	1,265
03-Aug-08	31,633	3,534	528	28,628	26,699	22.7	5,290	14.4	3,361	1,929
10-Aug-08	31,633	3,559	528	28,603	27,843	17.6	4,283	14.5	3,523	760
17-Aug-08	31,633	3,559	528	28,603	27,487	19.1	4,584	14.4	3,468	1,116
24-Aug-08	31,633	3,559	528	28,603	26,450	23.5	5,447	14.2	3,294	2,153
31-Aug-08	31,633	4,514	528	27,648	26,605	17.7	4,153	13.2	3,110	1,043
07-Sep-08	31,633	5,377	528	26,785	25,831	20.4	4,536	16.1	3,582	954
14-Sep-08	31,633	5,892	528	26,270	25,030	22.1	4,760	16.4	3,520	1,240
21-Sep-08	31,633	6,638	528	25,524	23,996	23.5	4,850	16.1	3,322	1,528
28-Sep-08	31,633	7,503	528	24,659	22,674	22.3	4,497	12.5	2,512	1,985

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
05-Oct-08	31,735	7,286	528	24,977	22,086	28.9	5,599	14.0	2,708	2,891
12-Oct-08	31,735	6,906	528	25,357	22,306	28.9	5,689	13.4	2,638	3,051
19-Oct-08	31,735	7,512	528	24,751	22,575	23.6	4,719	12.7	2,543	2,176
26-Oct-08	31,735	6,937	528	25,326	23,252	24.0	4,905	13.9	2,831	2,074
02-Nov-08	31,735	7,938	528	24,325	23,909	14.8	3,144	12.9	2,728	416
09-Nov-08	33,096	7,098	528	26,527	24,135	24.2	5,167	13.0	2,775	2,392
16-Nov-08	33,096	7,614	528	26,011	24,632	18.9	4,135	12.6	2,756	1,379
23-Nov-08	33,096	6,379	528	27,246	25,301	21.7	4,864	13.0	2,919	1,945
30-Nov-08	33,096	5,864	528	27,761	25,357	24.3	5,419	13.5	3,015	2,404
07-Dec-08	33,096	5,244	528	28,381	26,185	22.5	5,214	13.0	3,018	2,196
14-Dec-08	33,096	4,203	528	29,422	26,469	25.9	6,052	13.3	3,099	2,953
21-Dec-08	33,096	3,718	528	29,907	26,397	29.1	6,732	13.9	3,222	3,510
28-Dec-08	33,096	3,316	528	30,309	26,155	32.5	7,425	14.3	3,271	4,154
04-Jan-09	33,096	3,454	528	30,171	24,832	39.2	8,501	14.6	3,162	5,339
11-Jan-09	34,156	3,243	528	31,441	26,669	34.2	8,007	13.8	3,235	4,772
18-Jan-09	34,156	3,265	528	31,419	27,029	32.1	7,631	13.6	3,241	4,390
25-Jan-09	34,156	3,215	528	31,469	26,775	34.0	7,989	14.0	3,295	4,694
01-Feb-09	34,156	3,255	528	31,429	26,451	35.2	8,190	13.8	3,212	4,978
08-Feb-09	34,151	3,292	528	31,387	26,514	34.9	8,111	13.9	3,238	4,873
15-Feb-09	34,151	3,498	528	31,181	26,197	35.7	8,208	14.0	3,224	4,984
22-Feb-09	34,151	3,410	528	31,269	26,057	36.7	8,388	13.9	3,176	5,212
01-Mar-09	34,151	3,831	528	30,848	25,627	38.1	8,504	14.7	3,283	5,221
08-Mar-09	34,780	4,897	528	30,411	25,407	39.2	8,556	16.3	3,552	5,004
15-Mar-09	34,780	6,020	528	29,288	24,467	37.0	7,910	14.5	3,089	4,821
22-Mar-09	34,780	6,030	528	29,278	24,169	39.0	8,213	14.7	3,104	5,109
29-Mar-09	34,780	6,038	528	29,270	23,500	43.5	8,877	15.2	3,107	5,770
05-Apr-09	34,776	6,434	528	28,871	23,421	42.8	8,655	15.9	3,205	5,450
12-Apr-09	34,776	6,294	528	29,011	22,656	49.3	9,579	16.6	3,224	6,355
19-Apr-09	34,776	7,632	528	27,673	22,651	42.6	8,268	16.7	3,246	5,022
26-Apr-09	34,776	9,351	528	25,954	21,987	37.0	7,008	16.1	3,041	3,967
03-May-09	34,776	9,418	528	25,887	22,108	36.4	6,913	16.5	3,134	3,779
10-May-09	34,726	9,542	528	25,713	22,060	36.1	6,826	16.8	3,173	3,653
17-May-09	34,726	9,663	528	25,592	22,638	33.1	6,360	17.7	3,406	2,954
24-May-09	34,726	6,788	528	28,467	23,860	40.2	8,167	17.5	3,560	4,607
31-May-09	34,726	6,821	528	28,434	24,120	38.0	7,835	17.1	3,521	4,314
07-Jun-09	35,827	6,685	528	29,671	24,586	40.9	8,608	16.7	3,523	5,085
14-Jun-09	35,827	5,461	528	30,895	27,060	32.6	7,588	16.1	3,753	3,835
21-Jun-09	35,827	5,342	528	31,014	28,095	28.3	6,846	16.3	3,927	2,919
28-Jun-09	35,827	5,510	528	30,846	27,712	30.9	7,273	17.6	4,139	3,134

Table A3 Demand Forecast Range 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
06-Jan-08	23,322	24,253	05-Oct-08	19,864	23,031
13-Jan-08	24,080	25,055	12-Oct-08	20,126	20,739
20-Jan-08	24,485	25,511	19-Oct-08	20,502	21,358
27-Jan-08	24,187	25,344	26-Oct-08	20,891	21,639
03-Feb-08	23,948	25,056	02-Nov-08	21,696	22,280
10-Feb-08	23,952	25,027	09-Nov-08	21,937	22,604
17-Feb-08	23,651	24,658	16-Nov-08	22,436	23,368
24-Feb-08	23,538	24,419	23-Nov-08	22,927	23,845
02-Mar-08	22,990	24,195	30-Nov-08	22,929	24,287
09-Mar-08	22,490	24,017	07-Dec-08	23,782	25,026
16-Mar-08	21,698	23,356	14-Dec-08	24,007	25,023
23-Mar-08	21,393	22,811	21-Dec-08	23,803	25,055
30-Mar-08	20,699	22,262	28-Dec-08	23,474	24,718
06-Apr-08	20,546	22,418	04-Jan-09	22,266	23,528
13-Apr-08	20,034	21,143	11-Jan-09	24,301	25,276
20-Apr-08	19,988	22,169	18-Jan-09	24,682	25,707
27-Apr-08	19,550	22,161	25-Jan-09	24,387	25,544
04-May-08	19,565	21,912	01-Feb-09	24,148	25,256
11-May-08	19,301	22,476	08-Feb-09	24,152	25,227
18-May-08	19,671	22,027	15-Feb-09	23,846	24,854
25-May-08	20,714	22,713	22-Feb-09	23,745	24,626
01-Jun-08	21,011	23,699	01-Mar-09	23,233	24,437
08-Jun-08	21,917	24,566	08-Mar-09	22,727	24,234
15-Jun-08	23,811	25,902	15-Mar-09	22,235	23,573
22-Jun-08	24,728	26,966	22-Mar-09	21,911	23,048
29-Jun-08	24,255	26,626	29-Mar-09	21,236	22,480
06-Jul-08	24,225	25,900	05-Apr-09	21,053	22,655
13-Jul-08	25,132	26,835	12-Apr-09	20,217	21,326
20-Jul-08	25,709	27,760	19-Apr-09	20,179	22,418
27-Jul-08	24,816	26,707	26-Apr-09	19,737	22,419
03-Aug-08	23,926	25,559	03-May-09	19,752	22,165
10-Aug-08	24,859	27,692	10-May-09	19,558	22,731
17-Aug-08	24,590	26,922	17-May-09	19,918	22,270
24-Aug-08	23,716	26,175	24-May-09	20,960	22,960
31-Aug-08	24,068	26,239	31-May-09	21,261	23,942
07-Sep-08	22,754	26,027	07-Jun-09	21,781	24,790
14-Sep-08	22,039	25,811	14-Jun-09	24,061	26,152
21-Sep-08	21,248	25,103	21-Jun-09	24,946	27,184
28-Sep-08	20,664	23,609	28-Jun-09	24,501	26,872

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
06-Jan-08	22,705	23,636	05-Oct-08	19,378	22,572
13-Jan-08	23,444	24,420	12-Oct-08	19,668	20,268
20-Jan-08	23,840	24,865	19-Oct-08	20,032	20,888
27-Jan-08	23,541	24,698	26-Oct-08	20,421	21,169
03-Feb-08	23,330	24,438	02-Nov-08	21,181	21,816
10-Feb-08	23,331	24,407	09-Nov-08	21,360	22,041
17-Feb-08	23,038	24,019	16-Nov-08	21,876	22,809
24-Feb-08	22,934	23,787	23-Nov-08	22,382	23,270
02-Mar-08	22,370	23,575	30-Nov-08	22,342	23,693
09-Mar-08	21,884	23,410	07-Dec-08	23,167	24,410
16-Mar-08	21,096	22,747	14-Dec-08	23,370	24,386
23-Mar-08	20,794	22,208	21-Dec-08	23,175	24,427
30-Mar-08	20,104	21,653	28-Dec-08	22,884	24,128
06-Apr-08	19,989	21,846	04-Jan-09	21,670	22,900
13-Apr-08	19,483	20,594	11-Jan-09	23,434	24,409
20-Apr-08	19,426	21,776	18-Jan-09	23,788	24,814
27-Apr-08	19,018	21,757	25-Jan-09	23,480	24,637
04-May-08	19,056	21,509	01-Feb-09	23,239	24,347
11-May-08	18,837	22,015	08-Feb-09	23,276	24,352
18-May-08	19,211	21,563	15-Feb-09	22,973	23,950
25-May-08	20,261	22,260	22-Feb-09	22,881	23,731
01-Jun-08	20,510	23,202	01-Mar-09	22,344	23,549
08-Jun-08	21,394	24,042	08-Mar-09	21,855	23,327
15-Jun-08	23,265	25,356	15-Mar-09	21,378	22,718
22-Jun-08	24,065	26,303	22-Mar-09	21,065	22,192
29-Jun-08	23,706	26,077	29-Mar-09	20,393	21,634
06-Jul-08	23,649	25,324	05-Apr-09	20,216	21,801
13-Jul-08	24,479	26,181	12-Apr-09	19,432	20,520
20-Jul-08	25,108	27,158	19-Apr-09	19,405	21,899
27-Jul-08	24,198	26,090	26-Apr-09	18,946	21,877
03-Aug-08	23,338	24,971	03-May-09	18,974	21,616
10-Aug-08	24,320	27,153	10-May-09	18,887	22,197
17-Aug-08	24,019	26,351	17-May-09	19,232	21,596
24-Aug-08	23,156	25,615	24-May-09	20,300	22,300
31-Aug-08	23,495	25,667	31-May-09	20,599	23,290
07-Sep-08	22,249	25,522	07-Jun-09	21,063	24,073
14-Sep-08	21,510	25,251	14-Jun-09	23,307	25,398
21-Sep-08	20,674	24,561	21-Jun-09	24,168	26,406
28-Sep-08	20,162	23,109	28-Jun-09	23,573	25,944

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
06-Jan-08	31,317	3,019	285	28,583	27,170	17.9	4,330	12.0	2,917	1,413
13-Jan-08	31,317	3,389	285	28,213	28,113	12.6	3,158	12.2	3,058	100
20-Jan-08	31,317	2,848	285	28,754	28,649	12.7	3,243	12.3	3,138	105
27-Jan-08	31,317	2,391	285	29,211	28,449	15.3	3,867	12.3	3,105	762
03-Feb-08	31,317	3,284	285	28,318	28,201	13.0	3,262	12.6	3,145	117
10-Feb-08	31,329	3,801	285	27,813	28,166	11.1	2,786	12.5	3,139	-353
17-Feb-08	31,329	3,428	285	28,186	27,730	14.3	3,528	12.5	3,072	456
24-Feb-08	31,329	3,938	285	27,676	27,494	13.3	3,257	12.6	3,075	182
02-Mar-08	31,329	4,851	285	26,763	27,415	10.6	2,568	13.3	3,220	-652
09-Mar-08	31,341	5,594	285	26,032	27,171	8.4	2,015	13.1	3,154	-1,139
16-Mar-08	31,341	6,023	285	25,603	26,395	9.6	2,247	13.0	3,039	-792
23-Mar-08	31,341	6,045	285	25,581	25,722	12.1	2,770	12.8	2,911	-141
30-Mar-08	31,341	6,894	285	24,732	25,196	11.1	2,470	13.2	2,934	-464
06-Apr-08	31,341	7,099	285	24,527	25,390	9.4	2,109	13.3	2,972	-863
13-Apr-08	31,341	7,131	285	24,495	23,778	15.9	3,352	12.5	2,635	717
20-Apr-08	31,341	7,166	285	24,460	25,051	10.3	2,291	13.0	2,882	-591
27-Apr-08	31,341	7,177	285	24,449	24,912	10.3	2,288	12.4	2,751	-463
04-May-08	31,341	6,550	285	25,076	24,666	14.4	3,164	12.6	2,754	410
11-May-08	31,341	7,307	285	24,319	25,438	8.2	1,843	13.2	2,962	-1,119
18-May-08	31,341	6,782	285	24,844	24,899	12.8	2,817	13.0	2,872	-55
25-May-08	31,341	5,771	285	25,855	25,746	13.8	3,142	13.4	3,033	109
01-Jun-08	31,341	5,296	285	26,330	26,765	11.1	2,631	12.9	3,066	-435
08-Jun-08	31,341	5,985	285	25,641	27,837	4.4	1,075	13.3	3,271	-2,196
15-Jun-08	31,341	4,959	285	26,667	29,448	3.0	765	13.7	3,546	-2,781
22-Jun-08	31,341	4,233	285	27,393	30,583	1.6	427	13.4	3,617	-3,190
29-Jun-08	31,341	4,081	285	27,545	30,187	3.5	919	13.4	3,561	-2,642
06-Jul-08	31,341	3,253	285	28,373	29,213	9.6	2,473	12.8	3,313	-840
13-Jul-08	31,341	3,295	285	28,331	30,342	5.6	1,496	13.1	3,507	-2,011
20-Jul-08	31,341	3,295	285	28,331	31,406	2.1	571	13.1	3,646	-3,075
27-Jul-08	31,341	3,295	285	28,331	30,191	6.1	1,624	13.1	3,484	-1,860
03-Aug-08	31,341	3,541	285	28,085	28,847	9.9	2,526	12.9	3,288	-762
10-Aug-08	31,341	3,566	285	28,060	31,376	1.3	368	13.3	3,684	-3,316
17-Aug-08	31,341	3,566	285	28,060	30,474	4.2	1,138	13.2	3,552	-2,414
24-Aug-08	31,341	3,566	285	28,060	29,609	7.2	1,885	13.1	3,434	-1,549
31-Aug-08	31,341	4,521	285	27,105	29,643	3.3	866	13.0	3,404	-2,538
07-Sep-08	31,341	5,384	285	26,242	29,423	0.8	215	13.1	3,396	-3,181
14-Sep-08	31,341	5,899	285	25,727	29,169	-0.3	-84	13.0	3,358	-3,442
21-Sep-08	31,341	6,645	285	24,981	28,387	-0.5	-122	13.1	3,284	-3,406
28-Sep-08	31,341	7,510	285	24,116	26,617	2.2	507	12.7	3,008	-2,501

(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
05-Oct-08	31,341	6,942	285	24,684	26,022	7.2	1,653	13.0	2,991	-1,338
12-Oct-08	31,341	6,562	285	25,064	23,300	20.9	4,325	12.4	2,561	1,764
19-Oct-08	31,341	7,168	285	24,458	23,931	14.5	3,100	12.1	2,573	527
26-Oct-08	31,341	6,593	285	25,033	24,312	15.7	3,394	12.4	2,673	721
02-Nov-08	31,341	7,594	285	24,032	25,107	7.9	1,752	12.7	2,827	-1,075
09-Nov-08	31,368	6,457	285	25,196	25,353	11.5	2,592	12.2	2,749	-157
16-Nov-08	31,368	6,973	285	24,680	26,336	5.6	1,312	12.7	2,968	-1,656
23-Nov-08	31,368	5,757	285	25,896	26,808	8.6	2,051	12.4	2,963	-912
30-Nov-08	31,368	5,223	285	26,430	27,335	8.8	2,143	12.6	3,048	-905
07-Dec-08	31,368	4,603	285	27,050	28,117	8.1	2,024	12.4	3,091	-1,067
14-Dec-08	31,368	3,587	285	28,066	28,080	12.2	3,043	12.2	3,057	-14
21-Dec-08	31,368	3,077	285	28,576	28,131	14.1	3,521	12.3	3,076	445
28-Dec-08	31,368	2,582	285	29,071	27,714	17.6	4,353	12.1	2,996	1,357
04-Jan-09	31,368	2,615	285	29,038	26,397	23.4	5,510	12.2	2,869	2,641
11-Jan-09	31,368	2,530	285	29,123	28,246	15.2	3,847	11.8	2,970	877
18-Jan-09	31,368	2,513	285	29,140	28,769	13.4	3,433	11.9	3,062	371
25-Jan-09	31,368	2,465	285	29,188	28,584	14.3	3,644	11.9	3,040	604
01-Feb-09	31,368	2,493	285	29,160	28,222	15.5	3,904	11.7	2,966	938
08-Feb-09	31,363	2,521	285	29,127	28,193	15.5	3,900	11.8	2,966	934
15-Feb-09	31,363	2,578	285	29,070	27,764	17.0	4,216	11.7	2,910	1,306
22-Feb-09	31,363	2,578	285	29,070	27,501	18.1	4,444	11.7	2,875	1,569
01-Mar-09	31,363	3,058	285	28,590	27,464	17.0	4,153	12.4	3,027	1,126
08-Mar-09	31,422	3,892	285	27,815	27,261	14.8	3,581	12.5	3,027	554
15-Mar-09	31,422	4,883	285	26,824	26,484	13.8	3,251	12.4	2,911	340
22-Mar-09	31,422	4,883	285	26,824	25,828	16.4	3,776	12.1	2,780	996
29-Mar-09	31,422	4,903	285	26,804	25,216	19.2	4,324	12.2	2,736	1,588
05-Apr-09	31,418	5,268	285	26,436	25,421	16.7	3,781	12.2	2,766	1,015
12-Apr-09	31,418	5,110	285	26,594	24,049	24.7	5,268	12.8	2,723	2,545
19-Apr-09	31,418	6,371	285	25,333	25,414	13.0	2,915	13.4	2,996	-81
26-Apr-09	31,418	8,086	285	23,618	25,521	5.4	1,199	13.8	3,102	-1,903
03-May-09	31,418	8,086	285	23,618	25,224	6.6	1,453	13.8	3,059	-1,606
10-May-09	31,368	8,087	285	23,567	25,889	3.7	836	13.9	3,158	-2,322
17-May-09	31,368	8,087	285	23,567	25,354	5.8	1,297	13.9	3,084	-1,787
24-May-09	31,368	5,489	285	26,165	25,872	14.0	3,205	12.7	2,912	293
31-May-09	31,368	5,489	285	26,165	27,027	9.3	2,223	12.9	3,085	-862
07-Jun-09	31,368	5,678	285	25,976	27,894	4.8	1,186	12.5	3,104	-1,918
14-Jun-09	31,368	4,673	285	26,981	29,571	3.2	829	13.1	3,419	-2,590
21-Jun-09	31,368	4,514	285	27,140	30,758	-0.2	-44	13.2	3,574	-3,618
28-Jun-09	31,368	4,035	285	27,619	30,387	2.8	747	13.1	3,515	-2,768

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
06-Jan-08	31,317	3,033	398	28,682	26,553	21.4	5,046	12.3	2,917	2,129
13-Jan-08	31,317	3,405	398	28,310	27,353	15.9	3,890	12.0	2,933	957
20-Jan-08	31,317	2,864	398	28,851	27,892	16.0	3,986	12.2	3,027	959
27-Jan-08	31,317	2,407	398	29,308	27,709	18.7	4,610	12.2	3,011	1,599
03-Feb-08	31,317	3,301	398	28,414	27,478	16.3	3,976	12.4	3,040	936
10-Feb-08	31,329	3,805	398	27,922	27,451	14.4	3,515	12.5	3,044	471
17-Feb-08	31,329	3,433	398	28,294	26,975	17.8	4,275	12.3	2,956	1,319
24-Feb-08	31,329	3,943	398	27,784	26,728	16.8	3,997	12.4	2,941	1,056
02-Mar-08	31,329	4,855	398	26,872	26,674	14.0	3,297	13.2	3,099	198
09-Mar-08	31,341	5,584	398	26,155	26,459	11.7	2,745	13.0	3,049	-304
16-Mar-08	31,341	6,037	398	25,702	25,646	13.0	2,955	12.7	2,899	56
23-Mar-08	31,341	6,059	398	25,680	24,980	15.6	3,472	12.5	2,772	700
30-Mar-08	31,341	6,909	398	24,830	24,457	14.7	3,177	13.0	2,804	373
06-Apr-08	31,341	7,113	528	24,756	24,701	13.3	2,910	13.1	2,855	55
13-Apr-08	31,341	7,145	528	24,724	23,192	20.1	4,130	12.6	2,598	1,532
20-Apr-08	31,341	7,178	528	24,691	24,580	13.4	2,915	12.9	2,804	111
27-Apr-08	31,341	7,191	528	24,678	24,429	13.4	2,921	12.3	2,672	249
04-May-08	31,364	6,561	528	25,331	24,163	17.8	3,822	12.3	2,654	1,168
11-May-08	31,364	7,300	528	24,592	24,872	11.7	2,577	13.0	2,857	-280
18-May-08	31,364	6,775	528	25,117	24,311	16.5	3,554	12.7	2,748	806
25-May-08	31,364	5,764	528	26,128	25,184	17.4	3,868	13.1	2,924	944
01-Jun-08	31,364	5,289	528	26,603	26,184	14.7	3,401	12.9	2,982	419
08-Jun-08	31,633	5,978	528	26,184	27,203	8.9	2,142	13.2	3,161	-1,019
15-Jun-08	31,633	4,952	528	27,210	28,788	7.3	1,854	13.5	3,432	-1,578
22-Jun-08	31,633	4,226	528	27,936	29,823	6.2	1,633	13.4	3,520	-1,887
29-Jun-08	31,633	4,074	528	28,088	29,545	7.7	2,011	13.3	3,468	-1,457
06-Jul-08	31,633	3,246	528	28,916	28,506	14.2	3,592	12.6	3,182	410
13-Jul-08	31,633	3,288	528	28,874	29,547	10.3	2,693	12.9	3,366	-673
20-Jul-08	31,633	3,288	528	28,874	30,714	6.3	1,716	13.1	3,556	-1,840
27-Jul-08	31,633	3,288	528	28,874	29,436	10.7	2,784	12.8	3,346	-562
03-Aug-08	31,633	3,534	528	28,628	28,136	14.6	3,657	12.7	3,165	492
10-Aug-08	31,633	3,559	528	28,603	30,743	5.3	1,450	13.2	3,590	-2,140
17-Aug-08	31,633	3,559	528	28,603	29,800	8.6	2,252	13.1	3,449	-1,197
24-Aug-08	31,633	3,559	528	28,603	28,917	11.7	2,988	12.9	3,302	-314
31-Aug-08	31,633	4,514	528	27,648	28,938	7.7	1,981	12.7	3,271	-1,290
07-Sep-08	31,633	5,377	528	26,785	28,806	5.0	1,263	12.9	3,284	-2,021
14-Sep-08	31,633	5,892	528	26,270	28,485	4.0	1,019	12.8	3,234	-2,215
21-Sep-08	31,633	6,638	528	25,524	27,735	3.9	963	12.9	3,174	-2,211
28-Sep-08	31,633	7,503	528	24,659	26,015	6.7	1,550	12.6	2,906	-1,356

(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
05-Oct-08	31,735	7,286	528	24,977	25,476	10.7	2,405	12.9	2,904	-499
12-Oct-08	31,735	6,906	528	25,357	22,833	25.1	5,089	12.7	2,565	2,524
19-Oct-08	31,735	7,512	528	24,751	23,373	18.5	3,863	11.9	2,485	1,378
26-Oct-08	31,735	6,937	528	25,326	23,782	19.6	4,157	12.3	2,613	1,544
02-Nov-08	31,735	7,938	528	24,325	24,533	11.5	2,509	12.5	2,717	-208
09-Nov-08	33,096	7,119	528	26,506	24,735	20.3	4,465	12.2	2,694	1,771
16-Nov-08	33,096	7,659	528	25,966	25,629	13.8	3,157	12.4	2,820	337
23-Nov-08	33,096	6,443	528	27,182	26,095	16.8	3,912	12.1	2,825	1,087
30-Nov-08	33,096	5,873	528	27,752	26,609	17.1	4,059	12.3	2,916	1,143
07-Dec-08	33,096	5,244	528	28,381	27,381	16.3	3,971	12.2	2,971	1,000
14-Dec-08	33,096	4,274	528	29,351	27,380	20.4	4,965	12.3	2,994	1,971
21-Dec-08	33,096	3,721	528	29,904	27,504	22.4	5,477	12.6	3,077	2,400
28-Dec-08	33,096	3,268	528	30,357	27,270	25.8	6,229	13.0	3,142	3,087
04-Jan-09	33,096	3,362	528	30,263	25,942	32.2	7,363	13.3	3,042	4,321
11-Jan-09	34,156	3,340	528	31,344	27,499	28.4	6,935	12.7	3,090	3,845
18-Jan-09	34,156	3,325	528	31,359	27,904	26.4	6,545	12.5	3,090	3,455
25-Jan-09	34,156	3,277	528	31,407	27,727	27.5	6,770	12.5	3,090	3,680
01-Feb-09	34,156	3,305	528	31,379	27,436	28.9	7,032	12.7	3,089	3,943
08-Feb-09	34,151	3,347	528	31,332	27,441	28.7	6,980	12.7	3,089	3,891
15-Feb-09	34,151	3,442	528	31,237	27,030	30.4	7,287	12.9	3,080	4,207
22-Feb-09	34,151	3,372	528	31,307	26,811	31.9	7,576	13.0	3,080	4,496
01-Mar-09	34,151	3,831	528	30,848	26,749	31.0	7,299	13.6	3,200	4,099
08-Mar-09	34,780	4,768	528	30,540	26,530	30.9	7,213	13.7	3,203	4,010
15-Mar-09	34,780	5,847	528	29,461	25,755	29.7	6,743	13.4	3,037	3,706
22-Mar-09	34,780	5,875	528	29,433	25,229	32.6	7,241	13.7	3,037	4,204
29-Mar-09	34,780	5,934	528	29,374	24,687	35.8	7,740	14.1	3,053	4,687
05-Apr-09	34,776	6,336	528	28,969	24,836	32.9	7,168	13.9	3,035	4,133
12-Apr-09	34,776	6,252	528	29,053	23,563	41.6	8,533	14.8	3,043	5,490
19-Apr-09	34,776	7,647	528	27,658	24,999	26.3	5,759	14.2	3,100	2,659
26-Apr-09	34,776	9,360	528	25,945	24,820	18.6	4,068	13.5	2,943	1,125
03-May-09	34,776	9,359	528	25,946	24,546	20.0	4,330	13.6	2,930	1,400
10-May-09	34,726	9,307	528	25,948	25,150	16.9	3,751	13.3	2,953	798
17-May-09	34,726	9,325	528	25,930	24,538	20.1	4,334	13.6	2,942	1,392
24-May-09	34,726	6,688	528	28,567	25,344	28.1	6,267	13.7	3,044	3,223
31-May-09	34,726	6,629	528	28,626	26,333	22.9	5,336	13.1	3,043	2,293
07-Jun-09	35,827	6,441	528	29,915	27,090	24.3	5,842	12.5	3,017	2,825
14-Jun-09	35,827	5,304	528	31,052	28,590	22.3	5,654	12.6	3,192	2,462
21-Jun-09	35,827	5,132	528	31,224	29,633	18.3	4,818	12.2	3,227	1,591
28-Jun-09	35,827	5,201	528	31,155	29,215	20.1	5,211	12.6	3,271	1,940

Table A7 Energy Production Capability Forecast

Month	Firm Resource Scenario Forecast Energy Production Capability (GWh)	Planned Resource Scenario Forecast Energy Production Capability (GWh)
Jan 2008	17,600	17,619
Feb 2008	16,408	16,433
Mar 2008	16,473	16,500
Apr 2008	13,818	13,843
May 2008	15,493	15,520
Jun 2008	17,189	17,373
Jul 2008	17,932	18,122
Aug 2008	18,257	18,447
Sep 2008	16,189	16,373
Oct 2008	14,288	14,501
Nov 2008	15,577	16,462
Dec 2008	17,051	17,966
Jan 2009	18,091	19,554
Feb 2009	16,730	18,048
Mar 2009	17,381	19,203
Apr 2009	11,534	13,294
May 2009	13,413	15,233
Jun 2009	13,537	15,298

- 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	2007-Ex333	Hydro One Networks Inc.	Whitby DESN 1: New shunt capacitor	2008-Q3
	N/A	Hydro One Networks Inc.	Kingston-Gardiner TS#2 new transformer station	2008-Q4
	2000-001	Hydro One Networks Inc.	Hawthorne TS: Switchyard expansion to facilitate connection of the HQ 230 kV ties lines.	2008-Q4
	2000-001	Hydro One Networks Inc.	Hawthorne to Quebec border 230 kV double circuit interconnection line	2009-Q1
	2006-245	Hydro Ottawa	Cyrville TS new transformer station	2008-Q3
Essa	2006-233	Hydro One Networks Inc.	Orangeville TS Shunt Capacitor	2008-Q2
	2006-211	Hydro One Networks Inc.	Holland Marsh TS new transmformer station	2009-Q3
	2005-190	Hydro One Networks Inc.	Stayner TS modifications and new 230 kV line	2009-Q1
Niagara	2002-085	Hydro One Networks Inc.	Queenston Flow West	To be determined
	2007-257	Hydro One Networks Inc.	Improve thermal rating of 115 kV circuits D9HS, D10S and Q11S	2008-Q3
	2007-258	Hydro One Networks Inc.	Vansickle TS transformer station replacement	2009-Q3
		Hydro One Networks Inc.	Venessa jct to Norfolk TS new 115 kV	2009-Q2
Northeast	N/A	Great Lakes Power Ltd.	Replacement of 250 MVA Autotransformer @ Third Line TS	2007-Q4
	N/A	Great Lakes Power Ltd.	Magpie 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
	2005-207	Five Nations Energy Inc.	New transfomer at Kashechewan	2009-Q3
	2005-207	Five Nations Energy Inc.	New back up transfomer at Fort Albany	2007-Q4
	2000-015	Five Nations Energy Inc.	New 115 kV transmission line from Moosonee to Victor Mine	2007-Q3
	2002-086	Hydro One Networks Inc.	Modify Moosonee SS	2008-Q2
	2002-086	Hydro One Networks Inc.	Modify Otter Rapids SS	2008-Q2
	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-Q4

(Table B continued)

Zone	CAA-ID#	Transmitter	Description	Proposed I/S Date
Northwest	2006-228	Hydro One Networks Inc.	Red Lake TS new transformer station	2007-Q4
	2006-247	Hydro One Networks Inc.	Lakehead TS static var compensator (SVC)	2009-Q4
Southwest	2006-233	Hydro One Networks Inc.	DetweilerTS Shunt Capacitor	2008-Q2
	2006-225	Hydro One Networks Inc.	Woodstock TS low voltage shunt capacitors	2008-Q2
	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 2010-Q3
	2006-249	Hydro One Networks Inc.	Bruce to Orangeville 230 kV circuits upgrade	2009-Q1
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	2010-Q2
	2006-213	Hydro One Networks Inc.	Pleasant TS new transformer station	2008-Q2
	2006-224	Hydro One Networks Inc.	Hurontario SS new 230 kV switching station and new 230 kV line Cardiff to Hurontario	2009-Q2
	2006-248	Hydro One Networks Inc.	Hurontario SS to Jim Yarrow TS 230 kV double circuit line	2009-Q4
	2006-230	Hydro One Networks Inc.	Mississauga TS new transformer station	2010-Q2
West	2006-212	Hydro One Networks Inc.	London Talbot TS new transformer station	2008-Q1
	2007-EX318	Hydro One Networks Inc.	Belle River TS low voltage shunt capacitors	2007-Q4
	2007-EX328	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
	2007-260	Hydro One Networks Inc.	Rodney TS new transformer station	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	Major Transmission Interface Impacted	Reduction in Limit
Mar 31 2008 5:00 AM	May 02 2008 6:00 PM	Bruce A TS: R28, R28S	5541928	8 Hour	CWW	None	N/A

Table C2 East Zone

Planned Start Date	Planned End Date	Equipment O/S	Outage Request Id	Recall Time	Type	Major Transmission Interface Impacted	Reduction in Limit
May 30 2008 2:01 PM	Oct 31 2008 2:01 PM	Dobbin TS: T2, T2-K, T2-A	4796540	Immediate	CWW	None	N/A
Oct 06 2008 7:00 AM	Oct 31 2008 6:00 PM	Dobbin TS: AL27, C27P::GALETTA_JCT::CHATS_FALLS_SS, C27P::DOBBIN_TS::GALETTA_JCT, DL33, C27P::DOBBIN_TS::GALETTA_JCT, DL3, C27P::GALETTA_JCT::CHATS_FALLS_SS, D_BUS, HL27	5277035	8 Hour	CWW	FIO	30 MW
Apr 07 2008 6:00 AM	Apr 25 2008 6:00 PM	Crosby TS: L20H::CROSBY_JCT::CROSBY_TS, T3-L20H, L20H::EASTON_JCT::CROSBY_JCT, 49-L20H, T2-L20H, L20H::CROSBY_JCT::HINCHINBROOKE_SS, 24T2-L20H, L20H::ST.LAWRENCE_TS::EASTON_JCT, L20H::EASTON_JCT::CROSBY_JCT, 10-L20H, L20H::EASTON_JCT::BROCKVILLE_TS, L20H::EASTON_JCT::BROCKVILLE_TS, L20H::CROSBY_JCT::CROSBY_TS, L20H::ST.LAWRENCE_TS::EASTON_JCT, L20H::CROSBY_JCT::HINCHINBROOKE_SS	5299333	12 Hour	CWW	None	N/A
Jan 26 2009 6:00 AM	Feb 13 2009 4:00 PM	Hinchinbrooke SS: L22H::EASTON_JCT::HINCHINBROOKE_SS, L22H::EASTON_JCT::HINCHINBROOKE_SS, L22H::EASTON_YULE_JCT::EASTON_JCT, T3-L22H, L22H::EASTON_YULE_JCT::SMITHS_FALLS_TS, L22H::BROCKVILLE_TS::EASTON_JCT, L22H::EASTON_YULE_JCT::EASTON_JCT, L22H::EASTON_YULE_JCT::SMITHS_FALLS_TS, L22H::BROCKVILLE_TS::EASTON_JCT, 49-L22H, 10-L22H, L22H::EASTON_YULE_JCT::ST.LAWRENCE_TS, L22H::EASTON_YULE_JCT::ST.LAWRENCE_TS, 24T1-L22H	5310000	8 Hour	CWW	None	N/A
Sep 09 2008 6:00 AM	Sep 26 2008 6:00 PM	Crosby JCT: L21H::EASTON_YULE_JCT::CROSBY_JCT, T3-L21H, L21H::EASTON_YULE_JCT::SMITHS_FALLS_TS, L21H::EASTON_YULE_JCT::SMITHS_FALLS_TS, L21H::CROSBY_JCT::CROSBY_TS, L21H::CROSBY_JCT::CROSBY_TS, L21H::CROSBY_JCT::HINCHINBROOKE_SS, L21H::CROSBY_JCT::HINCHINBROOKE_SS, L21H::ST.LAWRENCE_TS::EASTON_YULE_JCT, L21H::ST.LAWRENCE_TS::EASTON_YULE_JCT, 10-L21H, 49-L21H, T1-L21H, L21H::EASTON_YULE_JCT::CROSBY_JCT, T4-L21H	5326751	8 Hour	CWW	None	N/A
Oct 13 2008 5:00 AM	Nov 07 2008 6:00 PM	Dobbin TS: T5, T5-H, T5-D	5541971	8 Hour	CWW	None	N/A
Mar 03 2008 5:00 AM	Mar 28 2008 6:00 PM	Chenaux TS: TR4, TR4-T, TR4-P	5541976	8 Hour	CWW	None	N/A
Aug 25 2008 5:00 AM	Oct 02 2008 6:00 PM	St.Lawrence TS: PS33-2, PS33, PS33-1, L33P::FDRX-USA_LXP_TS::ST.LAWRENCE_TS, L33P::FDRX-USA_LXP_TS::ST.LAWRENCE_TS, PS33-S, PS33-2, PS33-1, R33, R33-2, PS33-S, PS33-2, R33-1	5542138	16 Hour	CWW	None	N/A

Table C3 Essa Zone

Planned Start Date	Planned End Date	Equipment O/S	Outage Request Id	Recall Time	Type	Major Transmission Interface Impacted	Reduction in Limit
Apr 28 2008 5:00 AM	May 09 2008 6:00 PM	Essa TS: T3-R3, T3-J, 18T3-AT3, T3	5541981	8 Hour	CWW	None	N/A
May 12 2008 5:00 AM	May 23 2008 6:00 PM	Essa TS: T4, T4-D, 18T4-HT4	5542008	8 Hour	CWW	None	N/A

Table C4 Niagara Zone

Planned Start Date	Planned End Date	Equipment O/S	Outage Request Id	Recall Time	Type	Major Transmission Interface Impacted	Reduction in Limit
Apr 07 2008 5:00 AM	Apr 12 2008 6:00 PM	Beck #2 TS: PA301::BECK_#2_TS::NIAGARA_345_CTS, 28-PA301, PA301::BECK_#2_TS::NIAGARA_345_CTS	5128143	48 Hour	CWW	NY import W NY export W	550 MW 540 MW
Apr 07 2008 7:00 AM	Apr 18 2008 5:00 PM	Beck #2 TS: TL21L23	5205809	6 Day	CWW	None	N/A
Apr 21 2008 7:00 AM	May 02 2008 5:00 PM	Beck #2 TS: DL24	5205847	6 Day	CWW	None	N/A
May 05 2008 7:00 AM	May 16 2008 5:00 PM	Beck #2 TS: KL23	5205899	6 Day	CWW	None	N/A
May 20 2008 7:00 AM	May 30 2008 5:00 PM	Beck #2 TS: L25T302	5205913	6 Day	CWW	None	N/A
May 12 2008 4:00 AM	May 23 2008 6:00 PM	Carlton TS: 40-D10S, 69D10S-23, 69D10S-4, D10S::LOUTH_JCT::CARLTON_TS, D10S::LOUTH_JCT::CARLTON_TS	5287194	4 Hour	CWW	None	N/A
May 27 2008 4:00 AM	Jun 06 2008 6:00 PM	Louth JCT: D9HS::VANSICKLE_TS::LOUTH_JCT, D9HS::VANSICKLE_TS::LOUTH_JCT, T5-D9HS, 69D9HS-4, D9HS::HOOPER'S_JCT::VANSICKLE_TS, D9HS::HOOPER'S_JCT::VANSICKLE_TS, D9HS::LOUTH_JCT::CARLTON_TS, D9HS::LOUTH_JCT::CARLTON_TS, 23-D9HS, 40-D9HS, D9HS::DECEW_FALLS_SS::HOOPER'S_JCT, D9HS::DECEW_FALLS_SS::HOOPER'S_JCT	5287421	4 Hour	CWW	None	N/A
Apr 14 2008 5:00 AM	Apr 19 2008 6:00 PM	Beck #2 TS: PA302::BECK_#2_TS::NIAGARA_345_CTS, PA302::BECK_#2_TS::NIAGARA_345_CTS, 28-PA302	5499751	48 Hour	CWW	NY import W NY export W	550 MW 540 MW

Table C5 Northeast Zone

Planned Start Date	Planned End Date	Equipment O/S	Outage Request Id	Recall Time	Type	Major Transmission Interface Impacted	Reduction in Limit
Apr 07 2008 5:30 AM	Apr 18 2008 4:00 PM	Hanmer TS: R2, 33R2-L504	5482235	4 Hour	CWW	None	N/A
Aug 25 2008 5:00 AM	Sep 18 2008 6:00 PM	Crystal Falls TS: T6-H24S, 1820H24S-7, 9-H24S	5503015	4 Hour	CWW	None	N/A
Oct 06 2008 5:00 AM	Oct 24 2008 6:00 PM	Martindale TS: 9-S22A, T2-S22A, S22A::CLARABELLE_JCT::ALGOMA_TS, S22A::CLARABELLE_JCT::ALGOMA_TS, S22A::MARTINDALE_TS::CLARABELLE_JCT, S22A::MARTINDALE_TS::CLARABELLE_JCT, S22A::CLARABELLE_JCT::CLARABELLE_TS, S22A::CLARABELLE_JCT::CLARABELLE_TS, 26-S22A	5525309	4 Hour	CWW	EWTE	50 MW
Apr 21 2008 7:00 AM	May 30 2008 7:00 PM	Fauquier JCT: 42H9K-MSO-2, 33H9K-27	5527123	4 Hour	CWW	None	None. Note: may require control actions
Jan 14 2008 7:00 AM	Feb 29 2008 7:00 PM	Crystal Falls GS: 7-L5H, 62L5H-7	5527338	4 Hour	CWW	None	Note: Reduces DAL
Jul 07 2008 5:00 AM	Jul 25 2008 6:00 PM	Widdifield SS: H24S::OTTO_HOLDEN_TS::WIDDIFIELD_SS, 6-H24S, H24S::OTTO_HOLDEN_TS::WIDDIFIELD_SS, 38H24S-6, 38H24S-6, 6-H24S	5528280	4 Hour	CWW	None	N/A
Mar 25 2008 5:00 AM	Apr 25 2008 6:00 PM	Widdifield SS: 38H23S-9, T5-H23S, 9-H23S	5528287	4 Hour	CWW	None	N/A
Jul 21 2008 5:00 AM	Aug 01 2008 6:00 PM	Porcupine TS: 30T7-T, T7, 30T7-H	5542165	8 Hour	CWW	None	Note: may require SPS arming
Aug 11 2008 5:00 AM	Aug 22 2008 6:00 PM	Porcupine TS: T8, 30T8-H2, 30T8-T	5542170	8 Hour	CWW	None	Note: may require SPS arming

Table C6 Northwest Zone

Planned Start Date	Planned End Date	Equipment O/S	Outage Request Id	Recall Time	Type	Major Transmission Interface Impacted	Reduction in Limit
Jan 28 2008 9:00 AM	Mar 07 2008 7:00 PM	Fort Frances TS: 22-F25A, F25A::FORT_FRANCES_TS::MACKENZIE_TS, F25A::FORT_FRANCES_TS::MACKENZIE_TS, 20-F25A	5394471	4 Hour	CWW	OMTE, OMTW, EWTE, EWTW, MPFN, MPFS	OMTE - 70 MW OMTW - 250 MW EWTE - 75 MW EWTW - 50 MW MPFN - 50 MW MPFS - 140 MW
Feb 25 2008 8:00 AM	Mar 28 2008 7:00 PM	Reserve JCT: M1-J6, 4-A6P, A6P::RESERVE_JCT::PORT_ARTHUR_TS_#1, A6P::RESERVE_JCT::PORT_ARTHUR_TS_#1, A6P::ALEXANDER_SS::RESERVE_JCT, A6P::ALEXANDER_SS::RESERVE_JCT, 2A6P	5402679	4 Hour	CWW	None	N/A
Apr 07 2008 7:00 AM	May 23 2008 7:00 PM	Ignace JCT: M2D-D, 25-M2D	5405100	4 Hour	CWW	None	N/A
Mar 24 2008 8:00 AM	Mar 28 2008 6:00 PM	Lakehead TS: C8A, SS8-X, KL8, T8-K	5408926	6 Hour	CWW	None	N/A
Jan 16 2008 7:00 AM	Jan 22 2008 5:00 PM	Kenora TS: 34-K21W, K21W::WHITESHELL_CTS::KENORA_TS, K21W::WHITESHELL_CTS::KENORA_TS	5442900	4 Hour	CWW	OMTE, OMTW, EWTE	OMTE - 100 MW OMTW - 100 MW EWTE - 50 MW
Jan 30 2008 7:00 AM	Feb 05 2008 5:00 PM	Whiteshell CTS: K21W::WHITESHELL_CTS::KENORA_TS, K21W::WHITESHELL_CTS::KENORA_TS, 34-K21W	5442968	4 Hour	CWW	OMTE, OMTW, EWTE	OMTE - 100 MW OMTW - 100 MW EWTE - 50 MW
Feb 13 2008 7:00 AM	Feb 19 2008 5:00 PM	Kenora TS: K21W::WHITESHELL_CTS::KENORA_TS, K21W::WHITESHELL_CTS::KENORA_TS, 34-K21W	5442972	4 Hour	CWW	OMTE, OMTW, EWTE	OMTE - 100 MW OMTW - 100 MW EWTE - 50 MW
Feb 27 2008 7:00 AM	Mar 04 2008 5:00 PM	Whiteshell CTS: K21W::WHITESHELL_CTS::KENORA_TS, 34-K21W, K21W::WHITESHELL_CTS::KENORA_TS	5442976	4 Hour	CWW	OMTE, OMTW, EWTE	OMTE - 100 MW OMTW - 100 MW EWTE - 50 MW
Mar 12 2008 7:00 AM	Mar 18 2008 5:00 PM	Kenora TS: K22W::WHITESHELL_CTS::KENORA_TS, 34-K22W, K22W::WHITESHELL_CTS::KENORA_TS	5442980	4 Hour	CWW	OMTE, OMTW, EWTE	OMTE - 100 MW OMTW - 100 MW EWTE - 50 MW
Mar 26 2008 7:00 AM	Apr 01 2008 5:00 PM	Whiteshell CTS: K22W::WHITESHELL_CTS::KENORA_TS, 34-K22W, K22W::WHITESHELL_CTS::KENORA_TS	5443018	4 Hour	CWW	OMTE, OMTW, EWTE	OMTE - 100 MW OMTW - 100 MW EWTE - 50 MW
Apr 09 2008 7:00 AM	Apr 15 2008 5:00 PM	Kenora TS: 34-K22W, K22W::WHITESHELL_CTS::KENORA_TS, K22W::WHITESHELL_CTS::KENORA_TS	5443022	4 Hour	CWW	OMTE, OMTW, EWTE	OMTE - 100 MW OMTW - 100 MW EWTE - 50 MW
Apr 23 2008 7:00 AM	Apr 29 2008 5:00 PM	Kenora TS: K22W::WHITESHELL_CTS::KENORA_TS, 34-K22W, K22W::WHITESHELL_CTS::KENORA_TS	5443026	4 Hour	CWW	OMTE, OMTW, EWTE	OMTE - 100 MW OMTW - 100 MW EWTE - 50 MW
May 21 2008 7:00 AM	May 27 2008 5:00 PM	Dryden TS: 25-D26A, 20-D26A, D26A::DRYDEN_TS::MACKENZIE_TS, D26A::DRYDEN_TS::MACKENZIE_TS	5443030	4 Hour	CWW	OMTE, OMTW, EWTE, EWTW, MPFN	OMTE - 70 MW OMTW - 250 MW EWTE - 75 MW EWTW - 50 MW MPFN - 50 MW
Jun 18 2008 7:00 AM	Jun 24 2008 5:00 PM	Fort Frances TS: K24F::KENORA_TS::FORT_FRANCES_TS, K24F::KENORA_TS::FORT_FRANCES_TS, 34-K24F, 22-K24F	5443051	4 Hour	CWW	OMTE, OMTW, EWTE, MPFN, MPFS	OMTE - 50 MW OMTW - 250 MW EWTE - 75 MW MPFN - 50 MW MPFS - 140 MW
Jul 02 2008 7:00 AM	Jul 08 2008 5:00 PM	Fort Frances TS: 22-K24F, K24F::KENORA_TS::FORT_FRANCES_TS, 34-K24F, K24F::KENORA_TS::FORT_FRANCES_TS	5443056	4 Hour	CWW	OMTE, OMTW, EWTE, MPFN, MPFS	OMTE - 50 MW OMTW - 250 MW EWTE - 75 MW MPFN - 50 MW MPFS - 140 MW
Jul 16 2008 7:00 AM	Jul 22 2008 5:00 PM	Kenora TS: 34-K24F, K24F::KENORA_TS::FORT_FRANCES_TS, K24F::KENORA_TS::FORT_FRANCES_TS, 22-K24F	5443061	4 Hour	CWW	OMTE, OMTW, EWTE, MPFN, MPFS	OMTE - 50 MW OMTW - 250 MW EWTE - 75 MW MPFN - 50 MW MPFS - 140 MW
Jul 30 2008 7:00 AM	Aug 05 2008 5:00 PM	Fort Frances TS: 22-K24F, 34-K24F, K24F::KENORA_TS::FORT_FRANCES_TS, K24F::KENORA_TS::FORT_FRANCES_TS	5443066	4 Hour	CWW	OMTE, OMTW, EWTE, MPFN, MPFS	OMTE - 50 MW OMTW - 250 MW EWTE - 75 MW MPFN - 50 MW MPFS - 140 MW
Aug 13 2008 7:00 AM	Aug 19 2008 5:00 PM	Kenora TS: 34-K24F, 22-K24F, K24F::KENORA_TS::FORT_FRANCES_TS, K24F::KENORA_TS::FORT_FRANCES_TS	5443071	4 Hour	CWW	OMTE, OMTW, EWTE, MPFN, MPFS	OMTE - 50 MW OMTW - 250 MW EWTE - 75 MW MPFN - 50 MW MPFS - 140 MW
Aug 27 2008 7:00 AM	Sep 02 2008 5:00 PM	Fort Frances TS: 22-K24F, K24F::KENORA_TS::FORT_FRANCES_TS, K24F::KENORA_TS::FORT_FRANCES_TS, 34-K24F	5443076	4 Hour	CWW	OMTE, OMTW, EWTE, MPFN, MPFS	OMTE - 50 MW OMTW - 250 MW EWTE - 75 MW MPFN - 50 MW MPFS - 140 MW

Table C7 Ottawa Zone

Planned Start Date	Planned End Date	Equipment O/S	Outage Request Id	Recall Time	Type	Major Transmission Interface Impacted	Reduction in Limit
Apr 28 2008 5:00 AM	May 16 2008 4:00 PM	Merivale TS: L31L32	5505242	24 Hour	CWW	None	N/A
May 20 2008 5:00 AM	Jun 06 2008 3:00 PM	Merivale TS: PL31	5505258	24 Hour	CWW	None	N/A

Table C8 Southwest Zone

Planned Start Date	Planned End Date	Equipment O/S	Outage Request Id	Recall Time	Type	Major Transmission Interface Impacted	Reduction in Limit
Apr 07 2008 4:00 AM	May 30 2008 7:00 PM	Nanticoke TS: T12-F, T12, T12-H	4674837	4 Hour	CWW	None	N/A
Jan 05 2009 6:00 AM	Jan 30 2009 3:00 PM	Trafalgar TS: K1K2	4702290	3 Day	CWW	None	N/A
Apr 07 2008 7:00 AM	Apr 18 2008 5:00 PM	Burlington TS: H2L23	5286504	6 Day	CWW	None	N/A
May 05 2008 7:00 AM	May 16 2008 5:00 PM	Burlington TS: L23L37	5286569	6 Day	CWW	None	N/A
May 19 2008 7:00 AM	May 30 2008 5:00 PM	Middleport TS: L5L25	5286665	6 Day	CWW	None	N/A
May 19 2008 7:00 AM	May 30 2008 5:00 PM	Burlington TS: A2L25	5286681	6 Day	CWW	None	N/A
Jun 02 2008 7:00 AM	Jun 13 2008 5:00 PM	Middleport TS: KL25	5286695	6 Day	CWW	None	N/A
Sep 15 2008 7:00 AM	Sep 26 2008 5:00 PM	Middleport TS: KL30	5286709	6 Day	CWW	None	N/A
Sep 29 2008 7:00 AM	Oct 10 2008 5:00 PM	Middleport TS: L1L30	5286754	6 Day	CWW	None	N/A
Oct 14 2008 7:00 AM	Oct 24 2008 5:00 PM	Burlington TS: A2L37	5286839	6 Day	CWW	None	N/A
Oct 27 2008 7:00 AM	Nov 07 2008 5:00 PM	Burlington TS: H2L36	5286908	6 Day	CWW	None	N/A
Sep 02 2008 6:00 AM	Nov 21 2008 3:00 PM	Milton SS: L70L73	5335735	5 Day	CWW	None	N/A
Mar 18 2008 6:00 PM	Jul 05 2008 5:00 AM	Nanticoke TS: L1L22, P1L22, K1L1, 59-N1M, 59-N22J	5531226	Non-Recallable	CWW	FABC	Mar. 18 to May 1 50 to 250 MW May 1 to 5 0 to 150 MW May 5 to 29 50 to 250 MW May 29 to Jun. 2 0 to 150 MW Jun. 2 to 10 50 to 250 MW Jun. 10 to Jun 19. 0 to 150 MW Jun. 19 to Jul 5 50 to 250 MW
Nov 23 2008 6:00 PM	Dec 12 2008 5:00 AM	Nanticoke TS: P1P2, K1_BUS, K1L1, RSS4-F, L5F, T12-F, F_BUS, P1L22, P1_BUS, P1F, K1L5, P1F, K1K2	5532936	Non-Recallable	CWW	FABC	100 to 200 MW
Sep 12 2008 6:00 PM	Nov 20 2008 6:00 PM	Nanticoke TS: P1F, T12-F, RSS4-F, F_BUS, L5F, K1L5, 59-N5M	5536764	Non-Recallable	CWW	FABC FABC when BLIP pos. FABC when BLIP neg.	Sept. 12 to Oct. 20 50 to 100 MW Oct. 30 to Nov. 20 50 to 100 MW Oct. 20 to 30 1000 to 1050 MW Oct. 20 to 30 650 to 700 MW
Feb 04 2008 5:00 AM	Feb 15 2008 6:00 PM	Middleport TS: T3, T3-LT3, T3-TL580	5541951	8 Hour	CWW	FABC	0 to 200 MW
Feb 18 2008 5:00 AM	Feb 29 2008 6:00 PM	Middleport TS: T6, T6-TL581, T6-LT6	5542048	8 Hour	CWW	FABC	0 to 200 MW
Jun 16 2008 6:00 AM	Sep 05 2008 7:00 PM	Nanticoke TS: T11, T11-E, T11-H	5542119	36 Hour	CWW	None	N/A
Mar 11 2008 6:45 AM	Mar 28 2008 3:00 PM	Nanticoke TS: T7T12	5555333	4 Hour	CWW	None	N/A
Sep 08 2008 7:45 AM	Sep 19 2008 6:00 PM	Nanticoke TS: T7L581	5555508	4 Hour	CWW	None	N/A
Jul 21 2008 7:00 AM	Aug 01 2008 6:00 PM	Nanticoke TS: T6T11	5555708	4 Hour	CWW	None	N/A
Jun 16 2008 8:45 AM	Sep 05 2008 3:00 PM	Nanticoke TS: T11-E, T11, T11-H	5555841	4 Hour	CWW	None	N/A
Feb 04 2008 7:15 AM	Feb 15 2008 3:00 PM	Middleport TS: T3-LT3, T3, T3-TL580	5556196	4 Hour	CWW	FABC	0 to 200 MW
Feb 18 2008 7:15 AM	Feb 29 2008 3:00 PM	Middleport TS: T6-TL581, T6, T6-LT6	5556213	4 Hour	CWW	FABC	0 to 200 MW

Table C9 Toronto Zone

Planned Start Date	Planned End Date	Equipment O/S	Outage Request Id	Recall Time	Type	Major Transmission Interface Impacted / Reliability Concerns	Reduction in Limit
Apr 07 2008 8:40 AM	Apr 25 2008 3:10 PM	Hearn SS: SC12, SC12A, SC12A-A, SC12SC	5298978	15 Day	CWW	None	N/A
Oct 19 2007 11:15 AM	Jan 25 2008 4:00 PM	Claireville TS: DL560, DL560	5336453	7 Day	CWW	None	N/A
Feb 18 2008 7:00 AM	Feb 23 2008 6:00 PM	Cherrywood TS: 81-B540C, R56-B540C, B540C::BOWMANVILLE_SS::CHERRYWOOD_TS, B540C::BOWMANVILLE_SS::CHERRYWOOD_TS	5405298	4 Hour	CWW	None	N/A
Mar 24 2008 4:00 AM	Jun 13 2008 7:00 PM	Cherrywood TS: T15-HT15, T15-HT15, T15-W2, DT15, T15-HT15, T15, T15L35	5541956	36 Hour	CWW	None	N/A
Feb 24 2008 3:00 PM	Mar 01 2008 4:30 PM	Cherrywood TS: B541C::BOWMANVILLE_SS::CHERRYWOOD_TS, JL541, 81-B541C, B541C::BOWMANVILLE_SS::CHERRYWOOD_TS, 81-B541C, R56-B541C, W2L541	5546354	3 Hour	CWW	In combination with the 5442860, 5548407 outages, AL551 Breaker Failure contingency leaves only 1 Cherrywood Transformer in service. The outage needs to be rescheduled.	
May 05 2008 4:00 AM	May 16 2008 7:00 PM	Cherrywood TS: B543C::BOWMANVILLE_SS::CHERRYWOOD_TS, B543C::BOWMANVILLE_SS::CHERRYWOOD_TS, L27L43, JL543, AL543, H4L543	5547497	3 Day	CWW	None	N/A
Apr 28 2008 6:15 AM	May 14 2008 2:30 PM	Cherrywood TS: AL543	5547707	8 Hour	CWW	None	N/A
Sep 02 2008 6:15 AM	Sep 18 2008 2:30 PM	Cherrywood TS: L540A	5547780	8 Hour	CWW	None	N/A
Mar 24 2008 9:00 AM	Jun 13 2008 6:00 PM	Cherrywood TS: T15-HT15, T15-W2, T15	5548419	2 Hour	CWW	None	N/A
Mar 03 2008 4:00 AM	Mar 14 2008 7:00 PM	Claireville TS: T16-W4, T16-HT16, T16-HT16, T16-W4, T16L75, W4L571, T16, T16L72, W4L551	5553348	3 Day	CWW	FETT	250 MW

Table C10 West Zone

Planned Start Date	Planned End Date	Equipment O/S	Outage Request Id	Recall Time	Type	Major Transmission Interface Impacted	Reduction in Limit
Apr 07 2008 4:00 AM	Apr 25 2008 6:00 PM	Sarnia Scott TS: L21L43	4300795	Non-Recallable	CWW	None	N/A
Apr 28 2008 4:00 AM	May 16 2008 5:00 PM	Sarnia Scott TS: L6L23	4385678	Non-Recallable	CWW	None	N/A
Mar 03 2008 4:00 AM	Mar 27 2008 5:00 PM	Sarnia Scott TS: L7L22	4385681	Non-Recallable	CWW	None	N/A
May 05 2008 4:00 AM	Jun 13 2008 6:00 PM	Lambton TS #2: T7, T7-L4D, 27-T7	4622862	2 Day	CWW	Michigan Import Michigan Export	about 300 MW about 300 MW
Sep 02 2008 5:00 AM	Oct 10 2008 6:00 PM	Lambton TS #2: T8-L4D, 27-T8, T8	4622886	3 Day	CWW	Michigan Import Michigan Export	about 300 MW about 300 MW
Oct 20 2008 5:00 AM	Oct 30 2008 6:00 PM	Longwood TS: B562L::LONGWOOD_TS::BRUCE_A_TS, B562L::LONGWOOD_TS::BRUCE_A_TS, 21-B562L, W52-B562L	4675791	8 Hour	CWW	FABC when BLIP pos. FABC when BLIP neg. NBLIP	1000 to 1050 MW 650 to 700 MW 500
May 05 2008 8:00 AM	May 29 2008 6:00 PM	Wonderland TS: N21W::BOSTWICK_ROAD_JCT::WONDERLAND_TS, 19-N21W, 62N21W-36, T6-N21W, N21W::BOSTWICK_ROAD_JCT::WONDERLAND_TS, N21W::BOSTWICK_ROAD_JCT::BUCHANAN_TS, N21W::BOSTWICK_ROAD_JCT::BUCHANAN_TS	5205060	4 Hour	CWW	FABC NBLIP BLIP	50 to 250 MW 500 MW 500 MW
Jan 07 2008 5:00 AM	Mar 13 2008 6:00 PM	Modeland TS: N22W::LUCASVILLE_JCT::MODELAND_TS, T4-N22W, N22W::BOSTWICK_ROAD_JCT::LUCASVILLE_JCT, N22W::BOSTWICK_ROAD_JCT::LUCASVILLE_JCT, N22W::LUCASVILLE_JCT::MODELAND_TS, N22W::LUCASVILLE_JCT::SARNIA_SCOTT_TS, 40-N22W, N22W::LUCASVILLE_JCT::SARNIA_SCOTT_TS, N22W::BOSTWICK_ROAD_JCT::WONDERLAND_TS, N22W::BOSTWICK_ROAD_JCT::WONDERLAND_TS, N22W::BOSTWICK_ROAD_JCT::BUCHANAN_TS, N22W::BOSTWICK_ROAD_JCT::BUCHANAN_TS, 19-N22W, T5-N22W	5208516	4 Hour	CWW	FABC NBLIP BLIP	Jan. 7 to 21 0 to 150 MW 500 MW 500 MW Jan.21 to Feb. 4 0 to 300 MW 700 MW 700 MW Feb. 4 to Feb. 15 0 to 200 MW 500 MW 500 MW Feb. 15 to Feb. 18 0 to 150 MW 500 MW 500 MW Feb. 18 to Feb. 29 0 to 200 MW 500 MW 500 MW Feb. 29 to Feb. 13 0 to 150 MW 500 MW 500 MW
Jan 07 2008 5:00 AM	Mar 30 2008 6:00 PM	Sydenham JCT: W2S::SYDENHAM_JCT::STRATHROY_TS, W2S::BUCHANAN_TS::SYDENHAM_JCT, 29-W2S, W2S::BUCHANAN_TS::SYDENHAM_JCT, W2S::SYDENHAM_JCT::STRATHROY_TS, 19-W2S	5208976	4 Hour	CWW	None	N/A
Mar 17 2008 8:00 AM	May 01 2008 6:00 PM	Lucasville JCT: N21W::BOSTWICK_ROAD_JCT::LUCASVILLE_JCT, N21W::BOSTWICK_ROAD_JCT::LUCASVILLE_JCT, 62N21W-36, 36N21W-62	5225447	4 Hour	CWW	FABC NBLIP BLIP	Mar. 17 to 18 0 to 150 MW Mar.18 to May 1 50 to 250 MW 500 MW 500 MW
Apr 18 2008 6:00 AM	May 09 2008 4:00 PM	Buchanan TS: L5L37	5249592	Non-Recallable	CWW	None	N/A
Jan 20 2008 4:00 AM	Feb 12 2008 5:00 PM	Lambton TS #2: L25L29	5368970	Non-Recallable	CWW	None	N/A
Jan 21 2008 4:00 AM	Feb 04 2008 5:00 PM	Lambton TS #2: L25L29, KL25, 27-L25V	5369000	4 Hour	CWW	FABC BLIP NBLIP	0 to 300 MW 700 MW 700 MW
Feb 13 2008 4:00 AM	Mar 05 2008 5:00 PM	Lambton TS #2: L23L51	5369389	Non-Recallable	CWW	None	N/A
Mar 07 2008 4:00 AM	Mar 29 2008 5:00 PM	Lambton TS #2: KL51	5369716	Non-Recallable	CWW	None	N/A
Mar 29 2008 4:00 AM	Apr 23 2008 5:00 PM	Lambton TS #2: PL27	5372138	Non-Recallable	CWW	None	N/A
Apr 27 2008 4:00 AM	May 23 2008 5:00 PM	Lambton TS #2: PL4	5372422	Non-Recallable	CWW	None	N/A
May 25 2008 4:00 AM	Jun 17 2008 5:00 PM	Lambton TS #2: KL4	5372561	Non-Recallable	CWW	None	N/A
Jun 02 2008 4:00 AM	Jun 10 2008 5:00 PM	Lambton TS #2: KL26, L26L38, 27-L26L	5372593	4 Hour	CWW	FABC BLIP NBLIP	50 to 250 MW 500 MW 500 MW
Jun 18 2008 4:00 AM	Jul 15 2008 5:00 PM	Lambton TS #2: L27L28	5372672	Non-Recallable	CWW	None	N/A
Jun 19 2008 4:00 AM	Jul 05 2008 5:00 PM	Lambton TS #2: L27L28, 27-L27V, PL27	5372685	Non-Recallable	CWW	FABC BLIP NBLIP	50 to 250 MW 500 MW 500 MW
Aug 13 2008 4:00 AM	Sep 05 2008 5:00 PM	Lambton TS #2: PL23	5372721	Non-Recallable	CWW	None	N/A
Sep 07 2008 4:00 AM	Oct 02 2008 5:00 PM	Lambton TS #2: PL29	5372957	Non-Recallable	CWW	None	N/A
Oct 06 2008 4:00 AM	Oct 31 2008 5:00 PM	Lambton TS #2: P1P2	5373391	Non-Recallable	CWW	None	N/A
Nov 01 2008 4:00 AM	Nov 25 2008 5:00 PM	Lambton TS #2: KL28	5373638	Non-Recallable	CWW	None	N/A
Nov 26 2008 4:00 AM	Dec 19 2008 5:00 PM	Lambton TS #2: K1K2	5373729	Non-Recallable	CWW	None	N/A
May 12 2008 6:00 AM	Jun 06 2008 4:00 PM	Buchanan TS: L42L45	5468321	Non-Recallable	CWW	None	N/A

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