Summary Report
May 6, 2003

NPCC 2003 SUMMER RELIABILITY ASSESSMENTS

Who is NPCC?
The Northeast Power Coordinating Council (NPCC) is the international, regional reliability organization responsible for the development, compliance assessment and enforcement of operating and planning criteria for the Northeastern United States and Eastern Canada. NPCC provides the common foundation of regionally specific reliability criteria necessary to support open and competitive markets.

Adequate Summer Electricity Supplies Expected

Summer 2003 Reliability Assessments

Comprehensive reliability assessments have been completed by NPCC that indicate the region's electric system reliability criteria will be met, assuming that existing and planned resources are available and typical weather will be experienced during the upcoming summer season. However, there continues to be a local reliability concern for southwest Connecticut because transmission lines may not be sufficient to deliver available electricity supplies during peak demand periods.

On a regional basis, the assessments indicate that New England, New York and Ontario will have sufficient supplies of electricity under normal summer time conditions. Moreover, even under extreme weather conditions, such as a wide spread and prolonged heat wave with high humidity and near record temperatures, the implementation of operating procedures and programs would keep electricity supplies and demand in balance. The Canadian Provinces of Québec and the Maritimes experience their highest electricity demand in the winter and are expected to have ample resources throughout the summer 2003 period.

Projected NPCC Load Growth

The non-coincident (sum of the individual Areas) forecasted peak demand for NPCC during the summer of 2003 is 104,694 MW (May – September period). This forecasted peak demand translates to a coincident peak demand for NPCC during the summer of 2003 of 103,013 MW and is expected to occur during July 2003. The forecast is 593 MW (0.6%) lower than last year’s actual coincident NPCC peak demand of 103,606 MW in August 2002. Ambient weather conditions are the single most important variable impacting the demand forecasts during the summer months. Historically the peak loads and temperatures between New England and New York have a high degree of correlation due to the relative locations of their respective load centers. Depending upon the extent
of the weather system and duration, there is some potential for the Ontario peak demand to be coincident with New England and New York.

**New England**
The Independent System Operator of New England’s (ISO-NE’s) forecast summer 2003 peak demand is 25,120 MW. This demand is 228 MW (0.9%) lower than last year's actual and all time peak summer peak of 25,348 MW that occurred during unusually hot and humid weather on August 14, 2002.

**New York**
The forecast peak for this summer by the New York Independent System Operator (NYISO) is 31,430 MW, which is 786 MW (2.5%) higher than the summer 2002 peak of 30,644 MW that occurred on July 29, 2002.

**Ontario**
The 2003 summer peak Ontario demand forecasted by the Independent Market Operator (the IMO) is 23,684 MW. This forecast is 1,730 MW (6.8%) lower than last summer’s peak of 25,414 MW that happened on August 13, 2002. As was seen in 2001 and again in 2002, weather extremes can drive the demands significantly higher than the weather normal values. The demand models used to create the 2003 load profiles have been updated to increase the sensitivities to hot weather as a result of experiences during the summer and fall of 2002.

**Québec**
The forecasted 2003 summer peak for Québec is 20,740 MW. This is 215 MW (1%) higher than last summer's peak of 20,525 MW that happened on August 13, 2002.

**Maritimes**
Based on the Maritimes Area 2003 demand forecast, a summer peak of 3,813 MW is predicted to occur in May 2003. This is a 2.2% increase over the Summer 2002 actual peak of 3,731 MW, which occurred in May 2002.

**Resource Adequacy Summary**

**NPCC 2003 Summary**
Due to the coincidence of peak demand, there is very little diversity between the New England, New York and Ontario Areas. This limits the available resources that can be shared between these Areas.

With this in mind, the assessment of resources was made for the time period in June with the lowest overall NPCC margin. The overall resource adequacy for the NPCC region during this time indicates that there will be approximately 8,100 MW of excess capacity (excess capacity - over and above reserve requirements). However, over half of this excess capacity is in the Québec and Maritimes Areas. The power transfer capability between the Québec and Maritimes Areas to the remainder of NPCC will not permit the
usage of all the estimated excess capacity. In addition, transmission constraints may limit the ability to transmit excess capacity in southeastern New England to other NPCC Areas. Therefore it is estimated that the useable margins for NPCC are reduced by approximately 2,800 MW to account for this bottled capacity. As a result, the excess capacity available to the remainder of NPCC is approximately 5,300 MW.

The projected excess capacity available to the remainder of NPCC during the July peak load period is about 7,300 MW. By comparison the projected excess capacity available to the remainder of NPCC for the 2002 summer peak load period was about 3,400 MW. While New York and Ontario are projecting some relatively low margins during portions of the report period, after accounting for deliverable excess capacity from other Areas, there should be sufficient resources to meet the forecasted load projections and operating reserve requirements within NPCC.

The above assessment was performed on the basis of projected available capacity. Based on NPCC Area assessments there should be little impact to overall NPCC reliability due to inadequate fuel supply, lower than normal water reservoirs, higher than anticipated forced outages or delays in anticipated new facilities.

**New England**

Capacity within New England is forecasted to be sufficient to meet operating reserve requirements during all weeks of the summer peak load period. Excess capacity ranging from 1,600 MW to 5,700 MW is anticipated.

ISO-NE projects 2,918 MW of new generation to be on-line before the 2003 summer peak season. This includes:

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<tr>
<th>MW</th>
<th>Project</th>
<th>Location</th>
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<tbody>
<tr>
<td>678</td>
<td>AES Granite Ridge</td>
<td>New Hampshire</td>
</tr>
<tr>
<td>1,414</td>
<td>Mystic Units 8&amp;9</td>
<td>Boston, Massachusetts</td>
</tr>
<tr>
<td>700</td>
<td>Fore River</td>
<td>Southeast Massachusetts</td>
</tr>
<tr>
<td>126</td>
<td>Great Northern Hydro</td>
<td>Bangor, Maine</td>
</tr>
</tbody>
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While it is projected that capacity is expected to be surplus for New England, southwest Connecticut may face reliability problems due to transmission constraints into and within that sub-Area. To meet critical near-term electric system reliability needs in southwest Connecticut for the summer of 2003, Connecticut Light and Power Company implemented an emergency plan for the period of June 1, 2003 through September 31, 2003 that includes:

1. Installation of temporary generation, to address reliability needs and other power emergencies this summer;
2. Installation of voltage stabilization and performance equipment to maximize transmission import capabilities into southwest Connecticut; and,
3. Aggressively supporting and participating in ISO New England-administered Demand Side Management (DSM) programs in southwest Connecticut.
New York
The NYISO expects up to 1,179 MW of capacity additions and enhancements for this summer, of which 99 MW are located in Long Island, NY. The New York additions include:

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<tr>
<th>MW</th>
<th>Project</th>
<th>Location</th>
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<tbody>
<tr>
<td>1,080</td>
<td>PG&amp;E Athens</td>
<td>Central New York</td>
</tr>
<tr>
<td>52</td>
<td>FPL/Far Rockaway #2</td>
<td>Long Island, New York</td>
</tr>
<tr>
<td>47</td>
<td>Calpine - Stony Brook</td>
<td>Long Island, New York</td>
</tr>
</tbody>
</table>

While the balance of supply and demand is expected to be tight again in New York City and Long Island, there is adequate generating capacity and demand response programs in each locality to meet their installed capability requirements. New York State, as a whole, should have an adequate supply of electricity, although the state could require significant amounts of electricity to be imported during peak demand periods. Future reliability would be enhanced with more generation installed within New York State, especially New York City.

Any delay in the restoration of full capability of the existing underwater cable from Norwalk, Connecticut to Northport, New York, (scheduled for completion before the summer peak period) may impact reliability in the Long Island load zone. The commercial operation of the New Haven Harbor, Connecticut to Shoreham, New York (Long Island) HVDC merchant transmission facility continues to be delayed by regulatory issues.

Ontario
Adequate resources (within and external to Ontario) are expected to be available to meet forecast summer peak demand and energy requirements within Ontario. During extreme weather conditions and at a time when generator outages are greater than anticipated, support from neighbors may be required.

The new TransAlta-Sarnia Cogeneration Project, which provides a net capacity increase of 510 MW, became fully operational on March 27, 2003.

The return to service of three nuclear units is scheduled in 2003. Bruce A units G4 and G3 are scheduled to be generating electricity by the end of May and the end of June respectively. Each unit will provide a net capacity addition of 770 MW to the grid. Pickering A G4 is scheduled to begin generating electricity by June 2003. This unit will provide a net capacity addition of 515 MW.

Québec and the Maritimes
Québec and the Maritimes (the Provinces of New Brunswick, Nova Scotia and Prince Edward Island) are winter peaking. Adequate resources are expected to be available to serve forecast summer peak demand and meet operating reserve requirements.
Load Response Programs
Each Area utilizes various methods of demand management associated with interruptible loads. In those Areas where market based structures have been implemented or are evolving, there has been a shift in contractual obligations of the interruptible loads in order to give industrial and commercial customers the ability to respond to price signals in the wholesale electricity marketplace. The following is a summary of current interruptible load programs available, or in development to be available, for the summer period in each Area.

New England
ISO-NE and NEPOOL Participants are continuing the Load Response Program (LRP), which reduces peak electricity demand by large power users. Through the LRP, NEPOOL Participants or Demand Response Providers enrolled directly with ISO-NE can enter into agreements with retail customers to encourage them to reduce their electricity consumption during periods of high prices or peak demand. As of April 1, 2003 there were 227 customers signed up for the LRP representing 291.5 MW of possible load relief.

New York
The Emergency Demand Response Program is a program in which customers are paid to reduce their consumption by either interrupting load or switching to emergency standby generation when requested by the NYISO. The NYISO estimates that approximately 700 MW of load relief will be available to support the New York State power system during capacity emergency periods through this program.

Ontario
Under the IMO, there are about 300 MW of price responsive loads. These loads are treated as a resource dispatched off the system by the IMO once the price of energy in the real time market has exceeded the bid price submitted by the load. The load must reduce their demand according to the dispatch instructions or the load will face compliance proceedings.

Estimated Need for Operating Procedures
A wide range of assumptions were analyzed, including weather conditions derived through almost 40 years of experience, unexpected plant outages, transmission constraints between and within regions, implementation of operating procedures and estimated impact of demand response programs.

The Figure below shows the estimated potential range of use (from normal to extreme weather assumptions) of the indicated operating procedures for Base Case and Severe Case assumptions this summer. Capacity added in New England and New York in 2002, in addition to the capacity planned and Demand Response Programs expected to be available this year in New York and New England will reduce the need for the use of operating procedures designed to mitigate resource shortages in 2003, as compared to last year.
Operational Readiness

The Reliability Adequacy Assessments are key elements in determining NPCC’s ability to meet the demands of the summer. To mitigate the uncertainty surrounding load forecasts, forced outages and other conditions that cannot be controlled or predicted, the Areas of NPCC are prepared to deal with contingencies in real time.

To be prepared to deal with the constantly changing conditions on the power system, NPCC routinely conducts weekly operational planning calls between Areas to coordinate short-term system operations. NPCC has also refined and expanded its emergency conference call mechanism to enable Areas and neighboring regions to communicate current operating conditions and facilitate the procurement of assistance under emergency conditions.