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Northeast Power Coordinating Council Reliability Assessment For Summer 2011 Final Report

Conducted by the
NPCC CO-12 & CP-8 Working Groups
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Winter 2010/2011 Review

NPCC

The sections below describe briefly each Reliability Coordinator area's 2010/2011 winter operational experience. Total NPCC non-coincident peak demand was 111,416 MW for the period.

Maritimes

Peak demand occurred on January 24, 2011 HB 07:00 AST.

Demand was 5,252 MW.

Control actions were not required.

NB Power Corporation issued a public appeal for energy conservation.

New England

Peak load occurred January 24, 2011.

Load was 21,060 MW.

Implementation of Operating Procedure 4 (OP 4) was not required at the time of the peak.

New York

The forecasted peak for winter 2010-2011 was 24,289 MW.

Peak load occurred December 20, 2010.

The demand was 24,654 MW.

No particular issues.

Ontario

The winter peak demand of 22,733 MW occurred on January 24, 2011. This was 1.2 percent higher than the forecasted demand of 22,474 MW. Peak demand was higher than the forecast, despite conservation initiatives and growth in embedded generation, due to colder weather and economic recovery.

Québec

Demand, Imports and Exports, and Load Management

Winter 2010-2011 experienced relatively normal temperatures but one cold spell worth mentioning occurred from January 21 to 25, 2011. This drove the winter peak demand to a new all-time record in Québec. Post-seasonal assessments are presently ongoing in the Québec Reliability Coordinator area. All of the following information is preliminary.

Internal peak hourly demand was established to be 37,717 MW on Monday, January 24, 2011 at 8h00 EST. This value includes 1,560 MW of interruptible demand that was used at the time. Therefore, actual metered demand (Served Internal Demand) was 36,157 MW at peak. The annual forecast was 36,945 MW. Daytime temperatures in Montréal during the cold spell were around -26 °C to -28 °C (-15 °F to -18 °F) during the weekend leading to the Monday peak. Montréal temperature at peak time was -28 °C and wind speed was 9 km/hour (6 mph). Temperature in most other areas of the province was below -30 °C (-22 °F).

Net transfers to and from neighboring Reliability Coordinator areas are detailed as follows:

- New Brunswick, export of 722 MW (Eel River and Madawaska)
- New England, export of 1,554 MW (Sandy Pond, Highgate and Stanstead)
- New York, import of 110 MW (Dennison to feed Cornwall load)
- Ontario, import of 1,584 MW (Holden, Chat-Falls, Outaouais and Beauharnois)

At peak time, 1,560 MW of Interruptible Load was called. The two Interruptible Load Programs available in Québec were fully in use at the time. Prior to the weekend a public appeal was called by Hydro-Québec to inform customers of the upcoming cold conditions for Monday and Tuesday and to reduce their consumption during peak hours. The effect was estimated at 200 MW at peak time but is not included in any calculation of peak demand.

Generation and Reserves

At the time of peak, maximum generation capacity either belonging to HQP or under contract with HQP and HQD was about 42,250 MW, including Churchill Falls, various firm contracts and the TransCanada (T.C.E) gas generating station.

Generation outages totaled 818 MW. T.C.E. (547 MW in winter) is still under a temporary shutdown agreement with HQD and is included in the outages. Tracy oil-fueled G.S. had one unit (150 MW) on outage (Now retired). Hydraulic, wind, and mechanical restrictions totaled 2,026 MW. Thus, total available capacity was about 39,400 MW.

Wind farm generation output was approximately 484 MW, corresponding to 73 percent of installed capacity.

Thirty-minute operating reserve at peak time was 1,960 MW, 460 MW over the requirement. At peak time, 450 MW of capacity was called from Rio Tinto Alcan as a backup to the Châteauguay HVdc converter refusal to start-up. This refusal to start was due to a number of adjacent breakers leaking air because of extreme low temperature.

Transmission

Synchronous condenser CS23 at Duvernay has been out of service for over two years due to a major transformer fault. The transformer was returned on-site late fall 2010 but suffered another major fault during commissioning. The prognosis is another two-year outage. Shunt capacitor availability was within target so that voltage support in the load areas was adequate.

No other particular transmission condition occurred during the Winter Operating Period.