NERC

NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

2012 Long-Term Reliability Assessment

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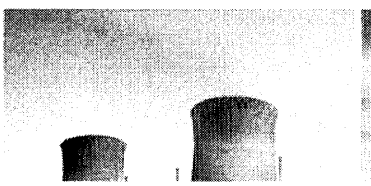
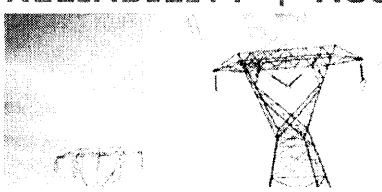
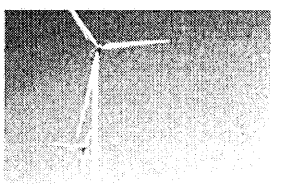
RELIABILITY | ACCOUNTABILITY

The project also includes the addition of two 735/315 kV, 1,650 MVA transformers in 2014. This new 735 kV source will allow redistribution of load around the Greater Montréal Area and will absorb load growth in the eastern part of Montréal. This project will enable future major modifications to the Montréal Area regional subsystem. Many of the present 120 kV distribution stations will be rebuilt into 315 kV stations, and the Montréal regional network will be converted to 315 kV.

The Northern Pass Project

This project to increase interconnection transfer capability between Québec and New England by 1,200 MW is now being studied. The project involves construction of a ±300 kV dc transmission line about 46 miles long from Des Cantons 735/230 kV substation to the Canadian-U.S. border. This line will be extended into the United States to a substation built in Franklin, New Hampshire.

The project in Québec also includes the construction of two 600 MW converters at Des Cantons and a 300 kV dc switchyard. Permitting for this project is presently ongoing but the initial commissioning date of 2015 may be delayed.

Wind Generation Integration Projects

A number of wind transmission projects with voltages ranging from 120 kV to 315 kV are either under construction or in planning stages in order to integrate wind generation planned to come on-line in the next few years. These wind generation projects are distributed in many areas of the Province of Québec, but most are near the shores of the Gaspésie Peninsula, along the Gulf of St. Lawrence down to the New Brunswick border.

Projects on the main system include 735 kV series compensation additions, and the addition of a second SVC at Bout-de-l'Île substation after the addition of the previously mentioned 735 kV section, and an SVC at Jacques-Cartier substation. Nominal current upgrades will also be done on some existing series compensation, and a thermal capacity upgrade will be done on two 735 kV lines. However, the future construction of the Chamouchouane–Bout-de-l'Île 735 kV line (see below) will replace a number of the above-mentioned projects.

Chamouchouane – Bout-de-l'Île 735 kV Line

The large generation additions and transmission services coming up over the next years require, as shown above, a number of system additions to maintain reliability. Moreover, planning studies have shown that to optimize the different solutions and to significantly reduce marginal losses on the system due to this new generation, a new 735 kV line from Chamouchouane substation on the eastern James Bay subsystem to Bout-de-l'Île substation in Montréal (about 230 miles) is required. Planning, permitting and construction delays are such that the line is scheduled for the 2017/2018 winter peak period. This optimization will result in replacing some of the above-mentioned projects, and in other cases will result in reducing additional equipment that was previously planned. The new line will also reduce transfers on other parallel lines on the Manicouagan–Québec 735 kV interface, thus optimizing operation flexibility and reducing losses.

Public information meetings have begun on this project. Final line route has not been determined yet and government authorization processes are ongoing.

Other 735 kV Conceptual Projects

A new 735/315 kV transformer station near the existing Arnaud 735 kV station is being projected for 2018. This station, tentatively named Arnaud-2, will be about 9.3 miles from Arnaud. It will be integrated into the Churchill Falls–Manicouagan subsystem using two existing lines and one new 15-km (9.3 mi.) 735 kV line from Arnaud Station. Two 735/315 kV, 1650 MVA transformers and six 315 kV line feeders will complete the station. Two double-circuit 315 kV lines will eventually feed the Alouette Aluminum Smelter Complex, replacing the 161 kV feeders now in service.

A new 735/315 kV transformer station is being projected near the existing Lebel 315/120 kV station in the Abitibi region of the system. This will consolidate the Abitibi subsystem, which presently has a 120 kV infrastructure with a 315 kV feed at Lebel and Figuery substations. A new 142 km (88 miles) 735 kV line is projected from Abitibi 735 kV Station on the James