



Ontario Energy Board

Commission de l'énergie de l'Ontario

**Technical Requirements:
East-West Tie Line
(EB-2011-0140)**

January 10, 2012

Technical Requirements for Reference Option

Board Document: Minimum Technical Requirements for the Reference Option of the East-West Tie dated November 9, 2011

- provides general design concepts for the Reference Option:
 - general conditions
 - engineering standards and procedures - CSA, ASCE, ASTM, IEEE etc.
 - environmental commitments and procedures
 - documentation and approvals
- Appendix A provides more specific design criteria:
 - codes, standards and reference documents
 - conductor and skywire data
 - insulation requirements
 - lightning performance
 - structural requirements, clearances, grounding etc.
- intended to establish a threshold or floor for the parameters/attributes that are mentioned



Some Notes on Technical Requirements

- Load duration curve on page 5 of Appendix A was provided by OPA
- Conductor sizes, ampacities and temperature limits referenced in Appendix A are from the IESO Report for the Reference option.
- The IESO's feasibility study assumed a conductor size of 1192.5 kcmil conductor with continuous/emergency rating of 466/599 MVA based on:
 - Voltage of 240 kV
 - Ambient temp of 30°C & wind speed of 4 km per hour
 - Conductor temperature of 93°C for continuous rating and 127°C for emergency rating
- Other conductor sizes and capacities would be possible if the overall requirement is met.
- The fault levels on page 3 of Appendix A are the actual values for the stations but the TSC requires new and upgraded stations to have a short circuit capability of 50 kA.
- Page 7 of the Technical Requirements document indicates a nominal operating voltage of 230 kV. Note that the maximum operating voltage is 250 kV as advised by the IESO.



Line Terminations

- The proposed E-W Tie Line consists of two segments:
 - Wawa TS to Marathon TS
 - Marathon TS to Lakehead TS
- Each segment is to be terminated at a dead-end structure that is within 250 meters of the transformer station fence (Marathon TS will have two dead-end structures - one for each segment)



Alternatives to the Reference Plan

- The Board welcomes technical innovation
- Transmitters may propose alternatives to the Reference Option as long as they meet overall requirements
- Transmitter would bear the onus of proving that an alternative solution is equivalent or superior to the Reference Option
- Transmitter must provide a feasibility study prepared or approved by the IESO for any alternative solution proposed

