



Facilities Study Infrastructure Report

**Generator Interconnection Request #234
Establishing a 138 kV System Interconnection for a
41.4MW Wind Powered Generating Facility
Loganville Nova Scotia**

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Project Implementation & Planning

Facilities Study Report

IR 234 – Loganville



EXECUTIVE SUMMARY

This project provides for the establishment of a 138kV system connection for a 41.4MW wind powered generation facility (IR 234) located at Loganville, NS. It is assumed that this project will be an addition to IR225 which comprises a 59.8MW generating facility.

The 41.4MW generating facility will be comprised of 18 Enercon E-82 E2 FT wind turbines; each turbine will be rated at 2.3MW. Each individual wind turbine voltage will be transformed to 34.5kV at the collector circuit; the voltage will be further transformed to 138kV in order to connect to the transmission system. This facility study assumes that IR 225, which is a 59.8MW facility, has been implemented and that a new 11.7km, 138kV spur line has already been constructed from the generating facility to the Point-of-Interconnection (POI). The POI will be a line tap on L6503. This study also assumes that the POI substation, located about 25km from the 1N-Onslow substation has been implemented and will have a three-breaker-ring bus configuration. Appendix A shows the proposed system interconnection.

IR 234 will be an expansion of the IR 225 generation facility and both IR's will share a common bus on the high side of the respective power transformers. As such, the POI for both IR225 & IR234 will be the connection point of the 11.7km Transmission Line to the 138kV three-breaker-ring bus.

The modifications to the Protection and Control (P&C) circuitry at the 1N-Onslow and 50N-Trenton substations as a part of IR225 will be sufficient to accommodate IR 234. However, a load transfer scheme on the 69kV bus at 1N-Onslow will be implemented to reduce over loading on L6513 in the event that 1N-B61 is de-energized. The introduction of the load transfer scheme will lead to SCADA and communication upgrades at 1N-Onslow

With the exception of a new 69kV breaker to facilitate the load transfer scheme on the 69kV bus at 1N-Onslow, the primary equipment upgrades carried out at the 1N and 50N substations as a part of IR 225 will be sufficient to accommodate IR234.

The estimated cost of this project is \$2,701,995.

The estimated project duration is 16 months.