



**System Impact Study Report  
Report GIP-IR507-SIS-R0**

**Generator Interconnection Request #507  
1.95 MW Tidal Generating Facility  
Digby County, NS**

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## Executive Summary

This report presents the results of a transmission System Impact Study (SIS) for a proposed 1.95 MW tidal turbine generating facility interconnected to the NSPI transmission system as Energy Resource Interconnection Service (ERIS). The study performed analyzed the impact of the proposed development that would have on the NSPI transmission system. System studies, including short circuit, steady state and under-frequency performance were analyzed. NSPI and NPCC planning criteria were applied.

This tidal facility will be interconnected to distribution feeder 77V-303 which is fed from 77V-Conway substation. The Distribution System Impact Study (DSIS) for this project was previously studied under Interconnection Request (IR) #470 (attached in Appendix F) and will still be valid for assessing distribution impacts caused by the proposed development. This SIS only focuses on the transmission system impacts caused by the proposed IR#507 generation.

The increase in short circuit levels due to the addition of IR #507 are within the capability of the associated transmission circuit breakers. There are no concerns with regard to increased short circuits levels.

Existing NSPI transmission in the Western Valley is not designed for maximum dispatch of all local generation under all possible system conditions. Under light load and high ambient (summer) temperature conditions, generation is dispatched to maintain system reliability. Currently, hydro generation is curtailed during certain stressed conditions to prevent overloading during system normal and single contingencies. Therefore, IR #507 shall have the capability to be curtailed to maintain system reliability.

In order to operate the proposed IR#507 as ERIS, it will require installation of 900 MHz Point to Point link from NSPI 407V Lansdowne Radio site to the IR#507 Point of interconnection on circuit 77V-303 in addition to the costs identified in the Distribution System Impact Study for IR #470. The total high level estimated cost for Interconnection Costs and Network Upgrades is \$86,000. The Facility Study will provide a more detailed cost estimate. All cost of associated facilities required at the Interconnection Customer's generating facility are in addition to this estimate.