



System Impact Study Report Report GIP-IR506-SIS-R0

**Generator Interconnection Request #506
6 MW Increase to the 24MW Tusket Gas Turbine
Yarmouth County, NS**

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Transmission Planning
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Executive Summary

This report presents the results of a System Impact Study (SIS) for a proposed 6 MW increase to the existing 24MW Tusket Gas Turbine (Tusket CT) interconnected to the NSPI transmission system via the 69kV transmission Line L-5537. The study analysed the impact of the proposed development on the NSPI power grid. System studies, including short circuit, power factor, steady state, stability, Bulk Power System analysis, under-frequency operation, low voltage ride through and loss factor were performed, and NSPI & NPCC planning criteria were applied.

The results of the analysis show that...

- Provided that the western valley transmission system is operated within historical limits, the additional 6 MW capacity does not adversely impact the thermal capacity of the NSPI transmission system.
- The upgrades to the Tusket CT do not cause issues with the stability of the interconnected system or adjacent control areas.
- IR#506 is not classified as part of the Bulk Power System.
- IR#506 does not cause a rise in fault levels above existing equipment and breaker ratings.
- IR#506 complies with Low-Voltage Ride-Through requirements and remains on-line though simulated under frequency events.
- The Tusket CT has the reactive power range to meet the required net power factor of 0.95 leading and lagging at the Point of Interconnection.

It is therefore concluded that the incorporation of the proposed 6 MW increase in facility capacity into the NSPI transmission system at the specified location has no negative impacts on the reliability of the NSPI power grid.

The increase in capacity of the Tusket CT does not require additional interconnection facilities, additional network upgrades, or additional SCADA/communication upgrades. As such, there are no upgrade costs associated with either NRIS or ERIS service for this facility.