Énergie NB Power

TECHNICAL SPECIFICATION FOR NET METERED GENERATION

NB Power Customer Service and Distribution

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1.0 Introduction

This document establishes technical specifications for the connection of net metered generation to NB Power's secondary distribution system.

The requirements outlined in this document do not constitute a complete design or installation specification.

The Applicant shall discuss the proposed project with NB Power prior to any purchase or installation of equipment.

2.0 NB Power Policy on Net-Metered Generation

Details about NB Power's Net Metering Program and the qualification requirements can be found at -
http://www.nbpower.ca/html/en/conservation/renewable_projects/net_metering/net_metering.html

3.0 General Information

NB Power's review of any proposal - its design, protection philosophy, and choice of devices and equipment - shall not be construed as confirming or endorsing the design. Nor is any warranty of safety, durability or reliability implied. NB Power shall not, by reason of such review or failure to review, be responsible for any inadequacy in the design. The Applicant must agree to change interconnection equipment or protective devices as may be reasonably required by NB Power to meet the changing requirements of NB Power's system.

The installation shall meet the requirements of the Canadian Electrical Code and the *New Brunswick Electrical Installation and Inspection Act*. In New Brunswick, the Code and the *Act*, including wiring permits, plan approvals and inspections, are under the jurisdiction of the NB Department of Public Safety, Technical Inspection Services.

4.0 Nominal Voltage Levels and Variation Limits

NB Power adopts Canadian Standards Association (CSA) Standard CAN3 C235-83 – "Preferred Voltage Levels for AC Systems 0 to 50,000V" and its "Recommended Voltage Variation Limits". NB Power's nominal secondary system voltages are 120/240V single phase, and 120/208V and 347/600V three phase.

5.0 Equipment Certification

Electrical installation and construction is governed by the *New Brunswick Electrical Installation and Inspection Act*. The *Act* is enforced by the Inspection Authority - NB Department of Public Safety, Technical Inspection Services. Under the *Act,* all electrical equipment must be approved by a certification organization recognized by Technical Inspection Services (examples - CSA and ULc).

6.0 Inverter Based Systems

As per the Net Metering Interconnection Application (section "Additional Information", item 3) the Applicant shall submit manufacturer's literature describing the inverter type, its protection system and the operating thresholds for each abnormal system condition.

Grid-dependent inverters meeting the "Anti-Islanding Protection" certification requirements of UL1741/IEEE1547 or CSA C22.2 No. 107.1 do not require additional protection.

Inverters which are grid-independent shall require passive protection which typically includes sensing of the following conditions - over and under-voltage, over and under-frequency, and loss of utility-supply.

Inverter output shall be a sinusoidal waveform (a.k.a. true sine wave).

7.0 Disconnecting Means

Disconnecting devices must be approved by the NB Department of Public Safety, Technical Inspection Services, and meet the requirements of section 84 of the Canadian Electrical Code.

NB Power does not require a disconnect switch for generation connected at or below 600V via a certified grid-dependent inverter.

8.0 Review by NB Power and Permission to Connect

The Applicant or his agent shall submit a completed Net Metering Interconnection Application.

NB Power will review only the portion of the design which requires conformance to NB Power's Net Metering Program.

Interconnected operation of the generator shall not commence until NB Power has granted permission by way of a letter of approval.

NB Power reserves the right to witness any part of the work, including, but not limited to, acceptance tests, commissioning tests, trip tests and the initial unit synchronization.

9.0 Operating Requirements

The interconnection of privately-owned generation shall not adversely affect the distribution system nor deteriorate the quality of electrical service provided to other Customers.

Poor voltage regulation, harmonic voltage distortion, or transient voltages cannot be permitted and could result in disconnection. Mitigation and correction of operational problems is solely the responsibility of the generator Owner.

References

Canadian Standards Association Standard C22.3 No. 9 – “Interconnection of Distributed Resources with Electricity Supply Systems” (latest revision).

UL 1741 - Standard for Inverters, Converters, Controllers and Interconnection System Equipment for Use with Distributed Energy Resources (latest revision).

CSA C22.3 No.107.1 – General Use Power Supplies.