

Interconnection Request

Appendix 1 to GIP



1. **The undersigned Interconnection Customer submits this request to interconnect its Generating Facility with the Transmission Provider's Transmission System pursuant to a Tariff.**

2. **This Interconnection Request is for (check one):**
 A proposed new Generating Facility.
 An increase in the generating capacity or a Material Modification of an existing Generating Facility.

3. **The type of interconnection service requested (check one):**
 Energy Resource Interconnection Service
 Network Resource Interconnection Service

4. **The Interconnection Customer Provides the following Information:**

a. **Address or location of the proposed new Generating Facility (to the extent known) or, in the case of an existing Generating Facility, the name and specific location of the existing facility:**

b. **Maximum megawatt electrical output of the proposed new Generating Facility:**
 MW summer at degrees C MW winter at degrees C
 OR
 MW increase in the generating capacity of an existing Generating Facility

c. **General description of the equipment configuration:**

d. **Commercial Operation Date**
Day Month Year

e. **Interconnection Customer's Contact Person:**

| | |
|---------------|--------------|
| Contact Name: | Street: |
| Phone: | Unit/Suite: |
| Fax: | City: |
| E-Mail: | Province: |
| | Postal Code: |

f. **Approximate location of the point of Interconnection (optional):**

5. **Applicable deposit amount as specified in the GIP (\$15,000) (Certified Cheque or Bank Draft)**

6. **Evidence of Site Control as specified in the GIP (check one)**
 Is attached to this Interconnection Request
 Will be provided at a later date in accordance with this GIP

7. **This Interconnection Request shall be submitted to the representative indicated below. Hardcopy only (no fax or electronic submissions will be accepted)**
 Nova Scotia Power Inc.,
 5 Long Lake Drive, Halifax, NS
 B3S 1N8
 Attention: Interconnection Engineer

8. **Representative of the Interconnection Customer to contact:**

| | | |
|-------|--------|--------|
| Name: | Phone: | Email: |
|-------|--------|--------|

9. **This Interconnection Request is Submitted by:**

Name of Interconnection Customer (Type or Print) _____

Submitted By: (Type or print) _____ Title: _____

Signature _____ Date: _____

NS Power - Generator Interconnection Coordinator Use

Received By: _____ Date and Time Received: _____

Signature _____

| | | | | | | | | | |
|-------------------------------------------------------------------------------------------------------------|--------------------|------------|----------|-----------------------|------------------------|--|------------|----------------------|--|
| 1. GENERATING FACILITY DATA | | | | | | | | | |
| a. UNIT RATINGS | | | | | | | | | |
| kVA | | Degrees C | | Voltage | | | | | |
| Power Factor | | | | Connection (e.g. wye) | | | | | |
| Short Circuit Ratio | | | | Frequency (hz) | | | | | |
| Stator Amps at Rated kVA | | | | Field Volts | | | | | |
| Max MW | | Degrees C | | Speed (RPM) | | | | | |
| b. COMBINED TURBINE-GENERATOR-EXCITER INERTIA DATA | | | | | | | | | |
| Inertia Constant | H | kW-sec/kVA | | Moment-of-Inertia | WR ² | | | lb.-ft. ² | |
| c. REACTANCE DATA (PER UNIT-RATED KVA) | | | | | | | | | |
| | DIRECT AXIS | | | | QUADRATURE AXIS | | | | |
| Synchronous – saturated | X_{dv} | | | | X_{qv} | | | | |
| Synchronous – unsaturated | X_{di} | | | | X_{qi} | | | | |
| Transient – saturated | X'_{dv} | | | | X'_{qv} | | | | |
| Transient – unsaturated | X'_{di} | | | | X'_{qi} | | | | |
| Subtransient – saturated | X''_{dv} | | | | X''_{qv} | | | | |
| Subtransient – unsaturated | X''_{di} | | | | X''_{qi} | | | | |
| Negative Sequence – saturated | X_{2v} | | | | | | | | |
| Negative Sequence – unsaturated | X_{2i} | | | | | | | | |
| Zero Sequence – saturated | X_{0v} | | | | | | | | |
| Zero Sequence – unsaturated | X_{0i} | | | | | | | | |
| Leakage Reactance | X_{lm} | | | | | | | | |
| | | | | | | | | | |
| d. FIELD TIME CONSTANT DATA (SEC) | | | | | | | | | |
| Open Circuit | T'_{do} | | | | T'_{go} | | | | |
| Three-Phase Short Circuit Transient | T'_{d3} | | | | T'_{q} | | | | |
| Line to Line Short Circuit Transient | T'_{d2} | | | | | | | | |
| Line to Neutral Short Circuit Transient | T'_{d1} | | | | | | | | |
| Short Circuit Subtransient | T''_d | | | | T''_q | | | | |
| Open Circuit Subtransient | T''_{do} | | | | T''_q | | | | |
| e. ARMATURE TIME CONSTANT (SEC) | | | | | | | | | |
| Three Phase Short Circuit | T_{a3} | | | | | | | | |
| Line to Line Short Circuit | T_{a2} | | | | | | | | |
| Line to Neutral Short Circuit | T_{a1} | | | | | | | | |
| NOTE: If information requested above is not applicable, indicate by marking "N/A" for each constant. | | | | | | | | | |
| 2. MW CAPABILITY AND PLANT CONFIGURATION - GENERATING FACILITY DATA | | | | | | | | | |
| a. ARMATURE WINDING RESISTANCE DATA (PER UNIT) | | | | | | | | | |
| Positive | R1 | | | | | | | | |
| Negative | R2 | | | | | | | | |
| Zero | R0 | | | | | | | | |
| Rotor Short Time Thermal Capacity | | | I_2^2t | | | | | | |
| Field Current at Rated kVA, Armature Voltage and PF | | | | | | | AMPS | | |
| Field Current at Rated kVA and Armature Voltage, 0 PF | | | | | | | AMPS | | |
| Three Phase Armature Winding Capacitance | | | | | | | MICROFARAD | | |
| Field Winding Resistance | | | | | OHMS | | | °C | |
| Armature Winding Resistance (Per Phase) | | | | | OHMS | | | °C | |

b. CURVES
 Provide Saturation, Vee, Reactive Capability, Capacity Temperature Correction curves.
 Designate normal and emergency Hydrogen Pressure operating range for multiple curves

3. SUBSTATION STEP-UP TRANSFORMER DATA

a. RATINGS

| | | | | | | |
|----------------------------|----------------------|----------------------|-------------------------------------------------------------------------|----------------------|----------------------|-----|
| Capacity kVA | Self-cooled | <input type="text"/> | kVA | Max. nameplate | <input type="text"/> | kVA |
| Voltage ratio | Low Voltage | <input type="text"/> | kV | High Voltage | <input type="text"/> | kV |
| Winding Connections | | Low Voltage | <input type="checkbox"/> WYE or <input type="checkbox"/> DELTA or other | <input type="text"/> | | |
| | | High Voltage | <input type="checkbox"/> WYE or <input type="checkbox"/> DELTA or other | <input type="text"/> | | |
| | | Tertiary Voltage | <input type="checkbox"/> WYE or <input type="checkbox"/> DELTA or other | <input type="text"/> | | |
| Fixed Taps Available | <input type="text"/> | % | Present/Proposed Tap Setting | <input type="text"/> | % | |

b. IMPEDANCE

| | | | | | |
|----------|-----------------------------------|----------------------|---|----------------------|-----|
| Positive | Z1 (on self-cooled rating) | <input type="text"/> | % | <input type="text"/> | X/R |
| Zero | Z0 (on self-cooled rating) | <input type="text"/> | % | <input type="text"/> | X/R |

4. EXCITATION SYSTEM DATA

Identify appropriate IEEE model block diagram of excitation system and power system stabilizer (PSS) for computer representation in power system stability simulations and the corresponding excitation system and PSS constants for use in the model.

5. GOVERNOR SYSTEM DATA

Identify appropriate IEEE model block diagram of governor system for computer representation in power system stability simulations and the corresponding governor system constants for use in the model.

6. WIND GENERATORS

Number of generators to be interconnected pursuant to this Interconnection Request:

Elevation: Single Phase Three Phase

Inverter: Manufacturer: Model Number
 Model name: Version:

List of adjustable set points for the protective equipment or software:

Note: A completed PTI - PSS/E load flow data sheet for the WEC must be supplied with the Interconnection Request. If other data sheets are more appropriate to the proposed device then they shall be provided and discussed at Scoping Meeting.

7. INDUCTION GENERATORS

| | |
|-----------------------------------------------------------|----------------------|
| Field Volts: | <input type="text"/> |
| Field Amperes: | <input type="text"/> |
| Motoring Power (kW): | <input type="text"/> |
| Neutral Grounding Resistor (If Applicable) : | <input type="text"/> |
| I ₂ ^t or K (Heating Time Constant): | <input type="text"/> |
| Rotor Resistance: | <input type="text"/> |
| Stator Resistance: | <input type="text"/> |
| Stator Reactance: | <input type="text"/> |
| Rotor Reactance: | <input type="text"/> |
| Magnetizing Reactance: | <input type="text"/> |
| Short Circuit Reactance: | <input type="text"/> |
| Exciting Current: | <input type="text"/> |
| Temperature Rise: | <input type="text"/> |
| Frame Size: | <input type="text"/> |
| Design Letter: | <input type="text"/> |
| Reactive Power Required In Vars (No Load) : | <input type="text"/> |
| Reactive Power Required In Vars (Full Load) : | <input type="text"/> |
| Total Rotating Inertia, H: | <input type="text"/> |