Interconnection Request

Appendix 1 to GIP

Nova Scotia POWER An Emera Company

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

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

5. **Applicable deposit amount as specified in the GIP ($15,000) (Wire Transfer, 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 or electronic submissions will be accepted**

Nova Scotia Power Inc.,
5 Long Lake Drive, Halifax, NS
B3S 1N8
Attention: Interconnection Engineer

Wire transfer details available on request
Interconnect@nspower.ca

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

NOVA SCOTIA POWER
An Emera Company

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	$X2_v$			
Negative Sequence – unsaturated	$X2_i$			
Zero Sequence – saturated	$X0_v$			
Zero Sequence – unsaturated	$X0_i$			
Leakage Reactance	XI_m			

d. FIELD TIME CONSTANT DATA (SEC)

Open Circuit	T'_{do}		T'_{qo}	
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. **TRANSFORMER DATA**

a. **GENERATOR STEP-UP TRANSFORMER RATINGS**

Capacity kVA	Self-cooled	kVA	Max. nameplate	kVA			
Voltage ratio	Low Voltage	kV	High Voltage	kV	Tertiary Voltage	kV	
Winding Connections	Low Voltage	☐ WYE	or ☐ DELTA	or other			
	High Voltage	☐ WYE	or ☐ DELTA	or other			
	Tertiary Voltage	☐ WYE	or ☐ DELTA	or other			
Fixed Taps Available	%	Present/Proposed Tap Setting	%				
Positive Sequence Impedance: **Z1** (on self-cooled rating)	**%**	**X/R**					
Zero Sequence Impedance: **Z0** (on self-cooled rating)	**%**	**X/R**					

b. **SUBSTATION STEP-UP TRANSFORMER RATINGS**

Capacity kVA	Self-cooled	kVA	Max. nameplate	kVA			
Voltage ratio	Low Voltage	kV	High Voltage	kV	Tertiary Voltage	kV	
Winding Connections	Low Voltage	☐ WYE	or ☐ DELTA	or other			
	High Voltage	☐ WYE	or ☐ DELTA	or other			
	Tertiary Voltage	☐ WYE	or ☐ DELTA	or other			
Fixed Taps Available	%	Present/Proposed Tap Setting	%				
Positive Sequence Impedance: **Z1** (on self-cooled rating)	**%**	**X/R**					
Zero Sequence Impedance: **Z0** (on self-cooled rating)	**%**	**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:	
Field Amperes:	
Motoring Power (kW):	
Neutral Grounding Resistor (If Applicable) :	
I_2^2t or K (Heating Time Constant):	
Rotor Resistance:	
Stator Resistance:	
Stator Reactance:	
Rotor Reactance:	
Magnetizing Reactance:	
Short Circuit Reactance:	
Exciting Current:	
Temperature Rise:	
Frame Size:	
Design Letter:	
Reactive Power Required In Vars (No Load) :	
Reactive Power Required In Vars (Full Load) :	
Total Rotating Inertia, H:	

8 ADDITIONAL INFORMATION