Appendices

Appendix 1. INTERCONNECTION REQUEST FOR A LARGE GENERATING FACILITY

APPENDIX 1 to LGIP
INTERCONNECTION REQUEST FOR A LARGE GENERATING FACILITY

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

2. This Interconnection Request is for (check one):
   _____ A proposed new Large 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. _____ Check here only if Interconnection Customer requesting Network Resource Interconnection Service also seeks to have its Generating Facility studied for Energy Resource Interconnection Service.

5. Interconnection Customer provides the following information:
   a. Address or location or the proposed new Large Generating Facility site (to the extent known) or, in the case of an existing Generating Facility, the name and specific location of the existing Generating Facility;
   b. Maximum summer at _____ degrees C and winter at _____ degrees C megawatt electrical output of the proposed new Large Generating Facility or the amount of megawatt increase in the generating capacity of an existing Generating Facility;
   c. General description of the equipment configuration;
   d. Commercial Operation Date (Day, Month, and Year);
e. Name, address, telephone number, and e-mail address of Interconnection Customer's contact person;

f. Approximate location of the proposed Point of Interconnection (optional); and

g. Interconnection Customer Data (set forth in Attachment A).

h. Primary frequency response operating range for electric storage resources.

i. Requested capacity (in MW) of Interconnection Service (if lower than the Generating Facility Capacity).

6. Applicable Initial Deposit amount as specified in the LGIP.

7. Evidence of Site Control as specified in the LGIP (check one)
   _____ Is attached to this Interconnection Request
   _____ Is NOT attached to this Interconnection Request, but a Deposit in Lieu of Site Control is provided

8. This Interconnection Request shall be submitted to the representative indicated below:

   [To be completed by Transmission Provider]

9. Representative of Interconnection Customer to contact:

   [To be completed by Interconnection Customer]

10. This Interconnection Request is submitted by:

    Name of Interconnection Customer: ____________________________

    By (signature): _____________________________________________

    Name (type or print): ________________________________________

    Title: _____________________________________________________

    Date: ___________________
Attachment A.  LARGE GENERATING FACILITY DATA

Attachment A to Appendix 1
Interconnection Request

LARGE GENERATING FACILITY DATA
UNIT RATINGS

kVA _____________ °F_____________ Voltage _____________
Power Factor ______________
Speed (RPM) ______________
Connection (e.g. Wye) _____________
Short Circuit Ratio _____________ Frequency, Hertz ______________
Stator Amperes at Rated kVA _____________ Field Volts ______________
Max Turbine MW _____________ °F ____
Primary frequency response operating range for electric storage resources:
  Minimum State of Charge: ______________
  Maximum State of Charge: ______________

COMBINED TURBINE-GENERATOR-EXCITER INERTIA DATA

Inertia Constant, H = _______________ kW sec/kVA
Moment-of-Inertia, WR2 = ____________________ lb. ft.2

REACTANCE DATA (PER UNIT-RATED KVA)

<table>
<thead>
<tr>
<th></th>
<th>DIRECT AXIS</th>
<th>QUADRATURE AXIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synchronous - saturated</td>
<td>X_{dv} _____</td>
<td>X_{qv} _____</td>
</tr>
<tr>
<td>Synchronous - unsaturated</td>
<td>X_{di} _____</td>
<td>X_{qi} _____</td>
</tr>
<tr>
<td>Transient - saturated</td>
<td>X'_{dv} _____</td>
<td>X'_{qv} _____</td>
</tr>
<tr>
<td>Transient - unsaturated</td>
<td>X'_{di} _____</td>
<td>X'_{qi} _____</td>
</tr>
<tr>
<td>Subtransient - saturated</td>
<td>X''_{dv} _____</td>
<td>X''_{qv} _____</td>
</tr>
<tr>
<td>Subtransient - unsaturated</td>
<td>X''_{di} _____</td>
<td>X''_{qi} _____</td>
</tr>
<tr>
<td>Negative Sequence - saturated</td>
<td>X2_v _____</td>
<td></td>
</tr>
<tr>
<td>Negative Sequence - unsaturated</td>
<td>X2_i _____</td>
<td></td>
</tr>
<tr>
<td>Zero Sequence - saturated</td>
<td>X0_v _____</td>
<td></td>
</tr>
<tr>
<td>Zero Sequence - unsaturated</td>
<td>X0_i _____</td>
<td></td>
</tr>
<tr>
<td>Leakage Reactance</td>
<td>X_{lm} _____</td>
<td></td>
</tr>
</tbody>
</table>
FIELD TIME CONSTANT DATA (SEC)

<table>
<thead>
<tr>
<th>Open Circuit T' do</th>
<th>T' do</th>
<th>T qo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three-Phase Short Circuit Transient T' d3</td>
<td>T' q</td>
<td></td>
</tr>
<tr>
<td>Line to Line Short Circuit Transient T' d2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Line to Neutral Short Circuit Transient T' d1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short Circuit Subtransient T&quot; d</td>
<td>T&quot; q</td>
<td></td>
</tr>
<tr>
<td>Open Circuit Subtransient T&quot; do</td>
<td>T&quot; qo</td>
<td></td>
</tr>
</tbody>
</table>

ARMATURE TIME CONSTANT DATA (SEC)

| Three Phase Short Circuit | T a3 |
| Line to Line Short Circuit | T a2 |
| Line to Neutral Short Circuit | T a1 |

NOTE: If requested information is not applicable, indicate by marking "N/A."

MW CAPABILITY AND PLANT CONFIGURATION
LARGE GENERATING FACILITY DATA

ARMATURE WINDING RESISTANCE DATA (PER UNIT)

| Positive | R1 |
| Negative | R2 |
| Zero     | R0 |

Rotor Short Time Thermal Capacity I2 t =
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
CURVES

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

GENERATOR STEP-UP TRANSFORMER DATA RATINGS

Capacity Self-cooled/
Maximum Nameplate
____________/___________ kVA

Voltage Ratio(Generator Side/System side/Tertiary)
____________/___________/___________ kV

Winding Connections (Low V/High V/Tertiary V (Delta or Wye))
____________/___________/___________

Fixed Taps Available
________________________________________________________________________

Present Tap Setting
________________________________________________________________________

IMPEDANCE

Positive  \( Z_1 \) (on self-cooled kVA rating)____________ % _____ X/R

Zero  \( Z_0 \) (on self-cooled kVA rating)____________ % _____ X/R
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.

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.

WIND GENERATORS

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

Elevation: ______________  _____ Single Phase  _____ Three Phase

Inverter manufacturer, model name, number, and version:
________________________________________________________________________

List of adjustable setpoints for the protective equipment or software:
________________________________________________________________________

Note: A completed General Electric Company Power Systems Load Flow (PSLF) data sheet or other compatible formats, such as IEEE and PTI power flow models, 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.
INDUCTION GENERATORS

(* ) Field Volts: _________________
(* ) Field Amperes: ______________
(* ) Motoring Power (kW): __________
(* ) Neutral Grounding Resistor (If Applicable): _____________
(* ) 122t 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: _______ Per Unit on KVA Base

Note: Please consult Transmission Provider prior to submitting the Interconnection Request to determine if the information designated by (*) is required.