**Attachment C to Appendix 1**

**Interconnection Request**

**GENERATING FACILITY DATA**

**SYNCHRONOUS GENERATOR APPLICATIONS**

**NOTE**: If requested information is not applicable, indicate by marking “N/A.” If none of this data applies for the Generation Facility, such as for a wind generation project, or PV solar generation project, then do not use this form, and use the other Attachment forms (Attachment A for Wind, Attachment B for PV Solar) instead of this Attachment C form.

1. **GENERATOR 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 \_\_\_\_\_\_

1. **COMBINED TURBINE-GENERATOR-EXCITER INERTIA DATA**

Inertia Constant, H = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ kW sec/kVA

Moment-of-Inertia, WR2 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ lb. ft.2

1. **REACTANCE DATA (PER UNIT-RATED KVA)**

 **DIRECT AXIS QUADRATURE AXIS**

Synchronous – saturated Xdv Xqv \_\_\_\_\_\_\_

Synchronous – unsaturated Xdi Xqi \_\_\_\_\_\_\_

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 X2v

Negative Sequence – unsaturated X2i

Zero Sequence – saturated X0v

Zero Sequence – unsaturated X0i

Leakage Reactance Xlm

1. **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”qo \_\_\_

1. **ARMATURE TIME CONSTANT DATA (SEC)**

Three Phase Short Circuit Ta3 \_\_\_\_\_\_\_

Line to Line Short Circuit Ta2 \_\_\_\_\_\_\_

Line to Neutral Short Circuit Ta1 \_\_\_\_\_\_\_

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

1. **ARMATURE WINDING RESISTANCE DATA (PER UNIT)**

Positive R1 \_\_\_\_\_\_\_

Negative R2 \_\_\_\_\_\_\_

Zero R0 \_\_\_\_\_\_\_

Rotor Short Time Thermal Capacity I22t = \_\_\_\_\_\_\_

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

1. **GENERATOR OPERATING CURVES**

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

1. **GENERATOR STEP-UP TRANSFORMER DATA RATINGS**

Capacity ONAN / ONAF1 / ONAF2 (as applicable): \_\_\_\_\_\_\_/\_\_\_\_\_\_/\_\_\_\_\_\_ MVA

Voltage Ratio (Generator Side/System side/Tertiary)

 / / kV

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

 /\_\_\_\_\_\_\_\_\_\_\_\_\_\_/\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

HV Fixed Voltage Taps (DETC) Available \_\_\_\_\_\_\_\_\_\_\_\_\_ kV

HV Fixed Voltage Tap (DETC) Set (Planned):\_\_\_\_\_\_\_\_\_\_\_kV

1. **GSU TRANSFORMER IMPEDANCE**

Positive Seq. Z1 (on self-cooled kVA rating

Z1 (H-X): % \_\_\_\_\_\_\_ X/R

Z1 (H-Y): % \_\_\_\_\_\_\_ X/R

Z1 (X-Y): % \_\_\_\_\_\_\_ X/R

Zero Seq. Z0 (on self-cooled kVA rating):

Z0 (H-X): % \_\_\_\_\_\_\_ X/R

Z0 (H-Y): % \_\_\_\_\_\_\_ X/R

Z0 (X-Y): % \_\_\_\_\_\_\_ X/R

1. **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.

1. **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.

1. **INDUCTION GENERATORS**

(\*) Field Volts: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(\*) Field Amperes: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

(\*) Motoring Power (kW): \_\_\_\_\_\_\_\_

(\*) Neutral Grounding Resistor (If Applicable): \_\_\_\_\_\_\_\_\_\_\_\_

(\*) I22t 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.