Attachment A (page 1)
To Appendix 1
Interconnection Request
Technical Data Required For
Interconnection System Impact Study

The technical data required below must be submitted no later than the date of execution of the System Impact Study Agreement pursuant to Section 7.2 of the LGIP.

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	

GREATEST UNIT RATING AT AMBIENT TEMPERATURE OF 90^{o} OR ABOVE

Gross Unit Rating (MW)	Gross Lagging (MVAR)
Net Unit Rating (MW)	Gross Leading (MVAR)
Station Service (MW)	Station Service (MVAR)
Temperature (^{o}F)	

GREATEST UNIT RATING AT AMBIENT TEMPERATURE OF 50^{o} OR ABOVE

Gross Unit Rating (MW)	Gross Lagging (MVAR)
Net Unit Rating (MW)	Gross Leading (MVAR)
Station Service (MW)	Station Service (MVAR)
Temperature (^{o}F)	

Attachment A (page 2)
To Appendix 1
Interconnection Request
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GREATEST UNIT RATING AT AMBIENT TEMPERATURE OF 0^0 OR ABOVE

Gross Unit Rating (MW)	Gross Lagging (MVAR)
Net Unit Rating (MW)	Gross Leading (MVAR)
Station Service (MW)	Station Service (MVAR)
Temperature (^oF)	

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)

	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	
Leakage Reactance	Xlm	
Zero Sequence – unsaturated	X0i	

Attachment A (page 3)
To Appendix 1
Interconnection Request
Technical Data Required For
Interconnection System Impact Study

FIELD TIME CONSTANT DATA (SEC)

Open Circuit	T'qo	T'do
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

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."

Attachment A (page 4)
To Appendix 1
Interconnection Request
Technical Data Required For
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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 I^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

CURVES

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

Attachment A (page 5)
To Appendix 1
Interconnection Request
Technical Data Required For
Interconnection System Impact Study

GENERATOR STEP-UP TRANSFORMER DATA RATINGS

Capacity Self-cooled/Maximum Nameplate
/ Kva

Voltage Ratio Generator side/System side/Tertiary
/ kV

Winding Connections Generator side/System side/Tertiary (Delta or Wye)
/

Fixed Taps Available

Present Tap Setting

IMPEDANCE

Positive	Z1 (on self-cooled kVA rating)	%	X/R
Zero	Z0 (on self-cooled kVA rating)	%	X/R

Attachment A (page 6)
To Appendix 1
Interconnection Request
Technical Data Required For
Interconnection System Impact Study

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 set points for the protective equipment or software:

For all generator types: A completed fully functioning, non-proprietary or non-confidential Siemens PTI's ("PSSE") power flow model or other compatible formats, such as IEEE and General Electric Company Power Systems Load Flow ("PSLF") data sheet, must be supplied with this Attachment A. If additional non-proprietary or non-confidential data sheets are more appropriate to the proposed device then they shall be provided and discussed at Scoping Meeting.

A PSCAD model shall be provided pursuant to Section 7.2 of the LGIP if deemed required at the Scoping Meeting..

Attachment A (page 7)
To Appendix 1
Interconnection Request
Technical Data Required For
Interconnection System Impact Study

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: Per Unit on KVA Base

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

Applicant Signature

I hereby certify that, to the best of my knowledge, all the information provided in this Attachment A to the Interconnection Request is true and accurate.

For Interconnection Customer: _____ Date: _____

Attachment B (page 1)
To Appendix 1
Interconnection Request
Technical Data Required For
Interconnection Feasibility Study

The technical data required below must be submitted no later than the date of execution of the Feasibility Study Agreement pursuant to Section 6.1 of the LGIP.

LARGE GENERATING FACILITY DATA

UNIT RATING

kVA	°F	Phase to Phase Voltage, kV
Rated Power Factor		
Speed (RPM)		Connection (e.g. Wye) _____
Short Circuit Ratio		Frequency, Hertz _____
Stator Amperes at Rated, kVA		Field Volts _____
Max Turbine MW	°F	

GREATEST UNIT RATING AT AMBIENT TEMPERATURE OF 50°F OR ABOVE

Gross Unit Rating (MW)	Gross Lagging (MVAR)
Net Unit Rating (MW)	Gross Leading (MVAR)
Station Service (MW)	Station Service (MVAR)
Temperature (°F)	

DATA (PER UNIT-RATED KVA AND RATED VOLTAGE)

Saturated Reactance

Direct axis positive sequence X''_{dv}
negative sequence X''_{2v} _____
zero sequence X''_{0v}

Resistance

Generator AC resistance R_a _____
negative sequence R_2 _____
zero sequence R_0 _____

Time Constant (seconds)

Three-phase short circuit armature time constant T_{a3} _____

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 Generator side/System side/Tertiary (Delta or Wye)

/

Fixed Taps Available

Present Tap Setting

IMPEDANCE

For 2-Winding Transformers

Positive	Z1 (on self-cooled kVA rating)	%	X/R
Zero	Z0 (on self-cooled kVA rating)	%	X/R

Attachment B (page 3)
To Appendix 1
Interconnection Request
Technical Data Required For
Interconnection Feasibility Study

IMPEDANCE

For 3-winding transformers

Positive $Z1_{H-L}$ (on self-cooled kVA rating)_____ %, X/R _____

$Z1_{H-T}$ (on self-cooled kVA rating)_____ %, X/R _____

$Z1_{L-T}$ (on self-cooled kVA rating)_____ %, X/R _____

Zero $Z0_{H-L}$ (on self-cooled kVA rating)_____ %, X/R _____

$Z0_{H-T}$ (on self-cooled kVA rating)_____ %, X/R _____

$Z0_{L-T}$ (on self-cooled kVA rating)_____ %, X/R _____

FEEDER IMPEDANCE (Per Unit)

From GSU to Point of Interconnection

Positive R1 _____ + j X1 _____ on 100 MVA base

Zero R0 _____ + j X0 _____ on 100 MVA base

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

Attachment B (page 4)
To Appendix 1
Interconnection Request
Technical Data Required For
Interconnection Feasibility Study

For all generator types: A completed fully functioning, non-proprietary or non-confidential Siemens PTI's ("PSSE") power flow model or other compatible formats, such as IEEE and General Electric Company Power Systems Load Flow ("PSLF") data sheet, must be supplied with this Attachment B. If additional non-proprietary or non-confidential data sheets are more appropriate to the proposed device then they shall be provided and discussed at Scoping Meeting.

Applicant Signature

I hereby certify that, to the best of my knowledge, all the information provided in this Attachment B to the Interconnection Request is true and accurate.

For Interconnection Customer: _____ Date: _____