Southern Company

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 including a USGS map of the proposed plant site (to the extent known) or, in the case of an existing Generating Facility, the name and specific location of the existing Generating Facility;

      Georgia Power Plant Yates approx 708 Dyer Rd, Newnan, GA 30263

   b. Maximum summer at 95 degrees F and winter at 50-70 degrees F gross and net 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;

      Max Summer (Evap Cooler on): 1224.3 MW gross, 1215.3 MW net

      Winter (Evap Cooler on): 1339.8 MW gross, 1330.8 MW net

      Winter Max (Evap Cooler off): 1371 MW gross, 1362.0 MW net

   c. General description of the equipment configuration;

      The project is a simple cycle combustion turbine facility with 3 units. Each unit is nominally 450 MW and is capable of firing with natural gas or oil. The REDACTED REDACTED will be utilized for the gas turbine technology for each unit. The facility will include a 230 kV collector yard. This is for CT2 of the 3 unit facility.

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d. Estimated In-Service Date, Initial Synchronization Date and Commercial Operation Date (Day, Month, and Year);

In-Service Date 12/1/2025	*The date upon which the Interconnection Customer reasonably expects it will be ready to begin use of the Transmission Provider's Interconnection Facilities to obtain back feed power.*
Initial Synchronization Date 8/1/2026	*The date upon which the Generating Facility is initially synchronized and upon which Trial Operation begins.*
Commercial Operation Date 12/1/2026	*The date on which the Generating Facility commences Commercial Operation as agreed to by the Parties pursuant to Appendix E to the Standard Large Generator Interconnection Agreement.*

e. Name, address, telephone number, and e-mail address of Interconnection Customer's contact person;

REDACTED REDACTED REDACTED REDACTED
REDACTED REDACTED REDACTED
and/or
REDACTED REDACTED REDACTED REDACTED
REDACTED REDACTED REDACTED

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

New Build 230 kV Plant Yates Substation approx 33°27'57.7"N 84°53'55.4"W

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

h. Running Station Service Load 9 MW; 8.046 Mvar, and connection location (i.e., attach single-line diagram).

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

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

6. Applicable 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

☐ Will be provided at a later date in accordance with this LGIP

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INTERCONNECTION REQUEST FOR A LARGE GENERATING FACILITY

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

Southern Company Services
Interconnections Project Manager
Transmission Policy and Service / 13N-8812
600 North 18th Street
Birmingham, AL 35203

9. Representative of Interconnection Customer to contact:

REDACTED REDACTED REDACTED REDACTED
REDACTED REDACTED REDACTED
and/or
REDACTED REDACTED REDACTED REDACTED
REDACTED REDACTED REDACTED

10. This Interconnection Request is submitted by:

Name of Interconnection Customer: Georgia Power Company

By (signature): [redacted]

Name (type or print): REDACTED

Title: Manager, Generation Support

Date: 08/09/23

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Attachment A to Appendix 1-Interconnection Request

LARGE GENERATING FACILITY DATA

UNIT RATINGS

MVA	546	°F	59 Cooling Water
Power Factor	0.85	Voltage	19,000
Speed (RPM)	3,600	Connection (e.g. Wye)	Wye
Short Circuit Ratio	0.5	Frequency, Hertz	60
Stator Amperes at Rated MVA	16,591	Field Volts	440

Maximum Gross Turbine MW at 50-70°F	447
Maximum Gross Turbine MW at 95°F	408
Maximum Gross Reactive production at Maximum MW output (95°F) and rated voltage	Mvar
Maximum Gross Reactive absorption at Maximum MW output (95°F) and rated voltage	Mvar

COMBINED TURBINE-GENERATOR-EXCITER INERTIA DATA

Inertia Constant, H 4.83 kW sec/kVA

or

Moment-of-Inertia, WR^2 lb. $ft.^2$

REACTANCE DATA (PER UNIT-RATED KVA)

		DIRECT AXIS		QUADRATURE AXIS
Synchronous – saturated	X_{dv}	2.00	X_{qv}	2.00
Synchronous – unsaturated	X_{di}	2.26	X_{qi}	2.26
Transient – saturated	X'_{dv}	0.18	X'_{qv}	0.30
Transient – unsaturated	X'_{di}	0.22	X'_{qi}	0.38
Subtransient – saturated	X''_{dv}	0.15	X''_{qv}	0.15
Subtransient – unsaturated	X''_{di}	0.19	X''_{qi}	0.19
Negative Sequence – saturated	$X2_v$	0.15		

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Attachment A to Appendix 1-Interconnection Request

Negative Sequence – unsaturated	$X2_i$	0.19
Zero Sequence – saturated	$X0_v$	0.08
Zero Sequence – unsaturated	$X0_i$	0.08
Leakage Reactance	Xl_m	0.13

FIELD TIME CONSTANT DATA (SEC)

Open Circuit	T'_{do}	9.0	T'_{qo}	1.0
Three-Phase Short Circuit Transient	T'_{d3}	0.9	T'_{q}	0.016
Line to Line Short Circuit Transient	T'_{d2}	1.5		
Line to Neutral Short Circuit Transient	T'_{d1}	1.8		
Short Circuit Subtransient	T''_{d}	1.025	T''_{q}	0.025
Open Circuit Subtransient	T''_{do}	0.03	T''_{qo}	0.05

ARMATURE TIME CONSTANT DATA (SEC)

Three Phase Short Circuit	T_{a3}	0.4
Line to Line Short Circuit	T_{a2}	0.4
Line to Neutral Short Circuit	T_{a1}	0.4

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	R_1	N/A
Negative	R_2	N/A
Zero	R_0	N/A

Rotor Short Time Thermal Capacity I_2^2t = N/A

Field Current at Rated MVA, Armature Voltage and PF = N/A amps

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Attachment A to Appendix 1-Interconnection Request

Field Current at Rated MVA and Armature Voltage, 0 PF = 3,347 at 0PF Lagging amps

Three Phase Armature Winding Capacitance = N/A microfarad

Field Winding Resistance = N/A ohms N/A °C

Armature Winding Resistance (Per Phase) = N/A ohms N/A °C

CURVES

Provide Generator Vendor Data Sheets, including reactances, time constants, 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

TWO-WINDING GENERATOR STEP-UP TRANSFORMER DATA (if applicable)

Capacity (i.e., OA/FA/FA): 324/432/540 MVA

Voltage Ratio (Generator Side/System side): 19/242 kV

Winding Connections (Low V/High V (Delta or Wye or Wye Grounded)): DELTA/WYE GROUNDED

Fixed Taps Available: 229.9/236/242/248/254.1 kV

Present Tap Setting (if applicable): N/A kV

IMPEDANCE

Positive	Z_1 (on OA MVA rating) 9.5 % 76 X/R
Zero	Z_0 (on OA MVA rating) 9.5 % 76 X/R

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Attachment A to Appendix 1-Interconnection Request

THREE-WINDING GENERATOR STEP-UP TRANSFORMER DATA (if applicable)

GSU connection and winding (please attach diagram and mark to reference this form).

H Winding Data
Full load ratings (i.e. OA/FA/FA): / / MVA
Rated high side voltage base: kV Delta or Wye or Wye Grounded connected
Tap positions available: / / / / kV
Present Tap Setting (if applicable): kV
Neutral solidly grounded? (or) Neutral Grounding Resistor (if applicable) Ohms
BIL rating: kV

X Winding Data
Full load ratings (i.e. OA/FA/FA): / / MVA
Rated high side voltage base: kV Delta or Wye or Wye Grounded connected
Tap positions available: / / / / kV
Present Tap Setting (if applicable): kV
Neutral solidly grounded? (or) Neutral Grounding Resistor (if applicable) Ohms
BIL rating: kV

Y Winding Data
Full load ratings (i.e. OA/FA/FA): / / MVA
Rated high side voltage base: kV Delta or Wye or Wye Grounded connected
Tap positions available: / / / / kV
Present Tap Setting (if applicable): kV
Neutral solidly grounded? (or) Neutral Grounding Resistor (if applicable) Ohms
BIL rating: kV

IMPEDANCE

H-X Winding data
Transformer base for impedances provided below: MVA
Positive sequence impedance Z_1(H-X) % X/R
Zero sequence impedance Z_0(H-X) % X/R

H-Y Winding data
Transformer base for impedances provided below: MVA
Positive sequence impedance Z_1(H-Y) % X/R
Zero sequence impedance Z_0(H-Y) % X/R

X-Y Winding data

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Attachment A to Appendix 1-Interconnection Request

Transformer base for impedances provided below: MVA
Positive sequence impedance Z_1(X-Y) % X/R
Zero sequence impedance Z_0(X-Y) % X/R

EXCITATION SYSTEM DATA

Identify appropriate IEEE or PTI 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 or PTI 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 power system load flow and dynamic data in IEEE or PTI format must be supplied with the Interconnection Request. If other data sheets provide additional information for consideration in the Interconnection Request, then they shall be provided and discussed at the Scoping Meeting.

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Attachment A to Appendix 1-Interconnection Request

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