Interconnection Request IC-1199

Version: 1
Phase: Edit
Data submitted: 11/03/2023

General Information

1. Requestor Information

✔ a) Select a primary contact for this request
REDACT REDACT

Email Address: REDACT REDACT REDACT
Phone Number: REDACT REDACT

✔ b) IRS Form W-9

GPC Corp Data Sheet W9 Tax Permit.pdf

2. Interconnection Request Type

✔ a) The interconnection request is for

- ○ A proposed new generating facility
- ● An increase to the generating capacity (gross or net) of an existing generator or active interconnection request
- ○ An existing interconnection request whose data is not currently in SIMPL

✔ b) Facility generation type

- ○ Solar
- ○ Energy storage
- ● Solar with energy storage

✔ c) Existing facility's interconnection request queue number
IC-736

✔ d) Facility name and company this request is incremental to
Moody Air Force Base Solar Facility; Company: Georgia Power Company

✔ e) ✓ Has this interconnection signed a Generator Interconnection Agreement

✔ f) ☐ Do you intend to pursue a State Jurisdictional QFIA

3. Interconnection Requested Service

✔ a) ✓ Energy resource interconnection service

✔ b) ☐ Network resource interconnection service

4. Interconnection Service Amount

a) Maximum net export capability at POI (MW)
46

b) Megawatt capacity increase
3.5

5. PV Capability

a) Gross solar PV capability (MVA) (Auto populated)
50.4

6. Energy Storage Data

a) Charging strategy

- (●) AC
- ( ) DC

b) Gross energy storage capability (MVA) (Auto populated)
66

7. Milestone Dates

a) In-service date
01/01/2026

b) Initial synchronization date
05/01/2026

c) Commercial operation date
09/01/2026

Site Location

8. Generating Facility Location

a) Facility name
Moody Air Force Base Battery Facility
Address: 5288 George Miller Road, Valdosta, GA

b) State
Georgia

c) County
Lowndes Couty

d) USGS map of the plant site

Moody Map.pdf

9. Point of Interconnection Location

a) POI Latitude (Decimal Degrees)

30.953432

b) POI Longitude (Decimal Degrees)

-83.21947

c) Line name or substation (optional)

Mission Pond Substation

10. Facility Description

a) Upload your single-line diagram

SoCo_Moody_Oneline Rev C - 20231006.pdf

REDACT 11/18/2023 Ver.1

The single line diagram must be stamped and signed by a Licensed Professional Engineer. On the Main Power Transformer, please remove the ground from the delta connected high voltage winding.

b) Describe the arrangement of this facility

The request is to add 3.5 MW of generation capability to the Moody Air Force Base Solar facility [increasing POI from 46 MW to 49.5 MW] and to add 49.5 MW / 198 MWh of BESS behind the existing Moody Air Force Base solar facility POI. The BESS portion is designed to deliver 49.5 MW at the POI [115kV] using REDACT REDACT inverters. Inverter output is scaled up from 690 kV to 34.5 kV using 22 [3 MVA] generator step-up transformers. Power is delivered at the POI by stepping up the output from 34.5 kV to 115 kV using the existing MPT's.

c) General description of equipment (optional)

Facility Data

11. Generator Interconnection Tie Line

a) Tie line voltage (kV)

115

b) Tie line rating at 95°F ambient (MVA)

53.2

c) Tie line length (miles)

0.019

d) R1 (p.u.)
0.0001

e) X1 (p.u.)
0.0002

f) B1 (p.u.)
0.00007

g) R0 (p.u.)
0.0011

h) X0 (p.u.)
0.0009

i) B0 (p.u.)
0.00007

12. PV Main Transformer

a) Choose a main transformer type
- (●) Two-Winding Main Transformer
- ( ) Three-Winding Main Transformer

b) Number of main transformers
1

c) Rating at 65°F ambient (OA) (MVA)
55

d) Rating at 65°F ambient (FA1) (MVA)
55

e) Rating at 65°F ambient (FA2) (MVA)
55

f) Low side winding voltage base (kV)
34.5

g) High side winding voltage base (kV)
115.5

h) Low side winding BIL rating (kV)
200

i) High side winding BIL rating (kV)
450

j) Winding Connections Low
Wye grounded

k) Winding Connections High
Delta

l) Available taps percent (%)
2.5

m) Number of available taps
5

n) Transformer base for provided impedances (MVA)
55

o) Positive sequence impedance Z1 (%)
8.12

p) Positive sequence impedance Z1 (X/R)
30.427

q) Zero sequence impedance Z0 (%)
8.06

r) Zero sequence impedance Z0 (X/R)
25.1875

13. PV Collector System Equivalent Model

a) Collector system voltage (kV)
34.5

b) Collector system equivalent model rating at 95°F ambient (MVA)
53.2

c) R1 (p.u.) on 100 MVA and line kV base (positive sequence)
0.00687

d) X1 (p.u.) on 100 MVA and line kV base (positive sequence)
0.00693

e) B1 (p.u.) on 100 MVA and line kV base (positive sequence)
0.00263

f) R0 (p.u.) on 100 MVA and line kV base (zero sequence)
0.0274

g) X0 (p.u.) on 100 MVA and line kV base (zero sequence)
0.0191

h) B0 (p.u.) on 100 MVA and line kV base (zero sequence)
0.00263

14. PV Inverter Step-Up Transformer

a) ✓ Uncheck if not applicable to this IC

b) Choose a PV inverter step-up transformer type

- (●) Two-Winding Inverter Step-Up Transformer
- ( ) Three-Winding Inverter Step-Up Transformer

c) Number of PV inverter step-up transformers
15

d) Nameplate rating at 65°F ambient (MVA)
3.416

e) Maximum rating (MVA) (optional)

f) Low side winding voltage base (kV)
0.63

g) High side winding voltage base (kV)
34.5

h) Low side winding BIL rating (kV)
30

i) High side winding BIL rating (kV)
150

j) Winding Connections Low
Wye

k) Winding Connections High
Delta

l) Available taps percent (%)
2.5

m) Number of available taps
5

n) Transformer base for provided impedances (MVA)
3.146

o) Positive sequence impedance Z1 (%)
6.06

p) Positive sequence impedance Z1 (X/R)
9.88525

q) Zero sequence impedance Z0 (%)
5.454

r) Zero sequence impedance Z0 (X/R)
9.88525

15. PV Inverter Data

a) Number of Inverters
15

b) Inverter maximum capability at 95°F/35°C or higher (kW)
3360

c) Inverter maximum capability at 95°F/35°C or higher (kVA)
3360

d) Describe inverter reactive capability at maximum power output (lead/lag)
0.9pf lead/lag

e) Inverter short circuit ratio limit (Amps)
6158

f) Inverter Manufacturer and Model #
TMEIC PVH-L3360GR-E7S

g) Provide the inverter specification sheet with reactive capability curve
PQ Curve - PVH-L3360GR.pdf

h) Type of photovoltaic system
Fixed tilt solar array

16. PV Fixed Reactive Device

a) ✓ Uncheck if not applicable to this IC

b) Individual shunt reactive device type
Capacitor bank

c) Number of individual shunt reactive device
2

d) Size of individual shunt reactive device (Mvar)
3.6

e) Operating voltage range high limit (p.u.)
1.03826

f) Operating voltage range low limit (p.u.)
0.97101

17. PV Dynamic Reactive Device

a) ☐ Uncheck if not applicable to this IC

18. ESR Main Transformer

a) ☐ Uncheck if not applicable to this IC

19. ESR Collector System Equivalent Model

a) ✓ Uncheck if not applicable to this IC

b) Collector system voltage (kV)
34.5

c) Collector system equivalent model rating at 95°F ambient (MVA)
106.96

d) R1 (p.u.) on 100 MVA and line kV base (positive sequence)
0.000443

e) X1 (p.u.) on 100 MVA and line kV base (positive sequence)
0.000551

f) B1 (p.u.) on 100 MVA and line kV base (positive sequence)
0.00078

g) R0 (p.u.) on 100 MVA and line kV base (zero sequence)
0.00114

h) X0 (p.u.) on 100 MVA and line kV base (zero sequence)
0.00046

i) B0 (p.u.) on 100 MVA and line kV base (zero sequence)
0.00026

20. ESR Inverter Step-Up Transformer

a) ✓ Uncheck if not applicable to this IC

b) Choose an ESR inverter step-up transformer type

- (●) Two-Winding Inverter Step-Up Transformer
- ( ) Three-Winding Inverter Step-Up Transformer

c) Number of ESR inverter step-up transformers
22

d) Nameplate rating at 65°F ambient (MVA)
3

e) Maximum rating (MVA) (optional)

f) Low side winding voltage base (kV)
0.69

g) High side winding voltage base (kV)
34.5

h) Low side winding BIL rating (kV)
30

i) High side winding BIL rating (kV)
200

j) Winding Connections Low
Wye

k) Winding Connections High
Delta

l) Available taps percent (%)
2.5

m) Number of available taps
5

n) Transformer base for provided impedances (MVA)
3

o) Positive sequence impedance Z1 (%)
7.15

p) Positive sequence impedance Z1 (X/R)
8.5

q) Zero sequence impedance Z0 (%)
7.15

r) Zero sequence impedance Z0 (X/R)
8.5

21. ESR Inverter Data

a) ✓ Uncheck if not applicable to this IC

b) Number of Inverters
REDACT

c) Inverter maximum capability at 95°F/35°C or higher (kW)
1500

d) Inverter maximum capability at 95°F/35°C or higher (kVA)
1500

e) Describe inverter reactive capability at maximum power output (lead/lag)
0.8pf lead/lag

f) Inverter short circuit ratio limit (Amps)
4

g) Inverter Manufacturer and Model #
REDACT REDACT REDACT REDACT

h) Provide the inverter specification sheet with reactive capability curve
Harmonic data REDACT 60Hz.pdf

REDACT REDACT 11/27/2023 Ver.1
Please provide the inverter specification sheet with the reactive capability curve.

Power Quality Data

24. PV Rapid Voltage Change (RVC) Induced by Main Transformer

a) Provide RVC mitigation strategy on main transformer energization

- ○ Main Transformer to be energized from the high side with a switching device that is equipped with pre-insertion resistors or point of wave control (required if valid main transformer energization data cannot be provided, or if deficiency is identified)
- ● Main Transformer Energization Data

Air core inductance (p.u.)
0.3

b) MVA base used for air core inductance referenced to the high side of transformer (MVA)
55

No-load test result

c) Rated voltage of winding at which current is determined (kV)
34.5

d) Current at 90% of rated voltage (A)
0.51

e) Current at 100% of rated voltage (A)
0.68

f) Current at 110% of rated voltage (A)
1.74

g) Losses at 90% of rated voltage (W)
23650

h) Losses at 100% of rated voltage (W)
31600

i) Losses at 110% of rated voltage (W)
43300

26. PV Harmonic Distortion of the plant at Point of Interconnection.

a) Total Harmonic Current Distortion (%)
2.6228

b) Provide with this data form the individual harmonic currents through 50th harmonic, in % of fundamental current rating.
E-STY-201762-002.pdf

27. ESR Harmonic Distortion of the plant at Point of Interconnection.

a) Total Harmonic Current Distortion (%)
2

b) Provide with this data form the individual harmonic currents through 50th harmonic, in % of fundamental current rating.
Harmonic data REDACT 60Hz.pdf

Dynamics Data

28. PV Dynamic Modeling Data

a) Upload a generic dynamic model for the PV inverter
MOODY_SOLAR_v33.dyr

b) Upload a PSSE case model for the PV inverter (optional)

c) ☐ Provide user written models in addition to generic models?

29. PV Three-Phase Modeling Data

a) Provide with this form a three-phase model for the PV inverter, and any additional dynamic reactive control devices

- ○ Upload File
- ● Provide at Notice to Proceed

30. ESR Inverter Dynamic Modeling Data

a) Upload a generic dynamic model for the ESR inverter

SOCO_MOODY_Surplus.dyr

b) Upload a PSSE case model associated with the PSSE dynamics data (optional)

c) ☐ Provide user written models in addition to generic models?

31. ESR Three-Phase Modeling Data

a) ✓ Uncheck if not applicable to this IC

b) Provide with this form a three-phase model for the ESR inverter, and any additional dynamic reactive control devices

- ○ Upload File
- ● Provide at Notice to Proceed

Short Circuit Data

32. PV Short Circuit Contribution of the Generating Facility

a) Maximum surge current /sub-transient current (reached within 0 -1 cycles) for a three-phase fault at the Point of Interconnection (p.u.)

1.176

b) Steady-state symmetrical short circuit current for a three-phase fault at the Point of Interconnection (p.u.)

1

c) Upload a short circuit model (Download the form attached in the help message)

Modeling of TMEIC PVINV-3200 Inverter for Short Circuit Studies in Aspen One Liner_Rev.A.docx

REDACT REDACT 11/18/2023 Ver.1
Please download the short-circuit model form from the help message and complete the table.

33. ESR Short Circuit Contribution of the Generating Facility

a) Maximum surge current /sub-transient current (reached within 0 -1 cycles) for a three-phase fault at the Point of Interconnection (p.u.)

1.34

b) Steady-state symmetrical short circuit current for a three-phase fault at the Point of Interconnection (p.u.)

1

c) Upload a short circuit model (Download the form attached in the help message)

ShortCircuitModelForm_RevD (1).docx

Payment Information and Next Steps

34. Site Control

a) Site control options

- (●) Upload evidence of site control
- ( ) Pay the site control deposit

b) Upload the evidence of site control

20190320 HPC-GP Lease Fully Executed.pdf

35. Payment Information Links

- Generator Interconnection Deposit Form

36. What are the requirements of a valid Interconnection Request?

Per Section 3.4.1 of the Southern Company Standard Large & Small Generator Interconnection Procedures and Agreements, an Interconnection Customer must submit all of the following to initiate an Interconnection Request:

- A completed SIMPL application, which includes data validation by Southern Company
- A $10,000 deposit
- Demonstration of Site Control **OR** a posting of an additional deposit of $10,000