

ATTACHMENT G

Network Operating Agreement

South Carolina Electric & Gas Company (the "Transmission Provider"), and _____ ("Transmission Customer") agree that the provisions of this Network Operating Agreement ("NOA") and the Service Agreement govern the Transmission Provider's provision of Network Integration Transmission Service to the Transmission Customer in accordance with Part III of Transmission Provider's Open Access Transmission Tariff ("Tariff"), as it may be amended from time to time. Any capitalized term used herein but not defined shall have the meaning ascribed to it in the Tariff.

- 1.0 The Transmission Customer has executed a Service Agreement, dated _____ ("Service Agreement"), with the Transmission Provider in accordance with Part III of the Tariff.
- 2.0 The Transmission Provider and the Transmission Customer agree to operate and maintain equipment necessary for integrating the Transmission Customer within the Transmission Provider's Transmission System (including, but not limited to, remote terminal units, metering, communications equipment, and relaying equipment).
- 3.0 The Transmission Provider and the Transmission Customer agree to transfer data between them that are pertinent for integrating the Transmission Customer within the Transmission Provider's Transmission System (including, but not limited to, heat rates and operations characteristics of Network Resources, generation schedules for units not owned by the Transmission Provider, interchange schedules, unit outputs for redispatch required under Section 33 of the Tariff, voltage schedules, loss factors, and real time load data for dynamic scheduling). The Transmission Customer shall update the Transmission Provider with this information at least annually, October 31st. For any new designated network resource, the Transmission Customer shall update the Transmission Provider concurrently with its submittal of the Application under section 29.2.
- 4.0 The Transmission Provider and the Transmission Customer agree to provide information for use by software programs required for system analyses, including data links and constraint dispatching.

5.0 Control Area Requirements. The Transmission Customer shall either: (i) operate as a Control Area under applicable guidelines of the North American Electric Reliability Council ("NERC") and the SERC Reliability Corporation ("SERC", formally known as the Southeastern Electric Reliability Council); (ii) satisfy its Control Area requirements, including all necessary Ancillary Services, by contracting with the Transmission Provider; or (iii) satisfy its Control Area requirements, including all necessary Ancillary Services, by contracting with another entity that can satisfy such requirements, in accordance with the Tariff and consistent with Good Utility Practice, which satisfies NERC and SERC requirements. The specific Ancillary Services are described in Section 3 of the Tariff.

The Transmission Customer shall plan, construct, operate, and maintain its facilities and system geographically located in the Transmission Provider's Control Area in accordance with Good Utility Practice, which shall include, but not be limited to, all applicable guidelines of NERC and SERC, as they may be modified from time to time and any generally accepted practices in the region.

6.0 Reliability Redispatch Procedures. If the Transmission Provider determines that redispatching resources to relieve an existing or potential transmission constraint is necessary to ensure the reliable operation of the Transmission System, the appropriate resources of the Transmission Provider and the Transmission Customer will be redispatched on a least-cost basis that also mitigates the existing or potential transmission constraint, without regard to the ownership of such resources. The Transmission Customer will inform, as soon as possible, the Transmission Provider whether Network Resource(s) that could effectively relieve the transmission constraint are available for redispatch and, if available, the cost of redispatching the Network Resource(s). The Transmission Provider will apprise the Transmission Customer of its reliability redispatch practices and procedures, as they may be modified from time to time.

Upon execution and upon request of the Transmission Provider, the Transmission Customer will submit verifiable cost data for its Network Resource(s), which allows for an estimate of the cost to the Transmission Customer of changing the generation output of each of its Network Resources, to the Transmission Provider. This cost data will be used, along with similar data for the Transmission Provider's resources, as the basis for least-cost reliability redispatch. If the Transmission Customer experiences changes to its costs, the Transmission Customer will submit those changes to the Transmission Provider's system operator. The Transmission

Provider will implement least-cost reliability redispatch consistent with its existing contractual obligations and its current practices and procedures for its own resources. The Transmission Customer shall comply with all requests by the Transmission Provider for reliability redispatch.

Either the Transmission Customer or the Transmission Provider may audit, at its own expense, particular reliability redispatch events (such as the cause or necessity of the reliability redispatch) or decisions regarding reliability redispatch (such as the cost or availability of generating resources) during normal business hours following reasonable notice to the other Party. Any audit of cost data will be performed by an independent agent at the requesting Party's cost. Such independent agent will be required to keep all cost data confidential.

Once reliability redispatch has been implemented as provided above, the Transmission Provider will book in a separate account the total reliability redispatch costs incurred by the Transmission Provider and by the Transmission Customer based on the submitted cost data. The Transmission Provider, the Transmission Customer, and other customers receiving Network Integration and Point-to-Point Transmission Service from the Transmission Provider will each bear a proportional share of the total reliability redispatch costs based on their most recently available Load Ratio Share. The reliability redispatch charge or credit, as appropriate, will be reflected on the Transmission Customer's monthly bill for the month following the reliability redispatch event.

- 7.0 **Metering, Control Area and Data Equipment.** Unless otherwise agreed, Transmission Customer or its agent will be responsible for the purchase, installation, operation, maintenance, repair, and replacement, or shall cause these actions to occur, of all new data acquisition equipment including revenue meters. The selection of data acquisition equipment and data to be received by the Transmission Provider's system operator and the Transmission Customer shall be at the reasonable discretion of the Transmission Provider. This data includes, but is not limited to, loads, line flows, voltages, generator output, and breaker status at any of the Transmission Customer's transmission facilities. All such equipment of the Transmission Customer shall conform to Good Utility Practice and, where necessary, the standards and practices of the Transmission Provider's Control Area. Prior to its installation, the Transmission Provider and the Transmission Customer shall review the metering and other equipment to ensure conformance with such standards or practices.

Electric capacity and energy delivered to the Transmission Customer's Network Load by the Transmission Provider will be measured by revenue meters installed at the delivery point(s) to such Network Load. When measurement is made at any location other than a delivery point, suitable adjustments for losses between the point of measurement and the delivery point will be agreed upon in writing between the Parties hereto and the Transmission Provider will apply such adjustment to all measurements so made. Billing and accounting hereunder will in all cases include adjustments for any such losses. Such delivery/measurement points and the respective adjustments will be established by the Network Operating Committee. Metering equipment, including but not limited to revenue meters at the Transmission Customer's Network Load will be tested by the Transmission Customer at least annually. Representatives of the Transmission Provider will be afforded an opportunity to witness such tests.

The Transmission Customer will read the meters owned by it, except as may be mutually agreed, and will furnish to the Transmission Provider all meter readings and other information required for operations and for billing purposes. Such information will remain available to the Transmission Provider for three (3) years.

The Transmission Customer will, upon request of the Transmission Provider, make additional tests of any of its metering equipment at its Network Load used for determining the delivery of capacity and energy by the Transmission Provider. Representatives of the Transmission Provider shall be afforded an opportunity to witness such tests. If such additional tests show that the measurements made with this metering equipment are accurate within one (1) percent (positive or negative), the cost of making such additional tests shall be paid by the Transmission Provider.

In the event any metering equipment used in the measurement of capacity and energy fails to register or is found to be inaccurate, appropriate billing adjustments will be made based on the best information available. If testing shows that the measurements made with any metering equipment are accurate within one (1) percent (positive or negative), there shall be no correction of billing. If testing shows that the measurements made with any metering equipment are not accurate within one (1) percent (positive or negative), the owner of such equipment will make any necessary adjustments, repairs, or replacements thereof as soon as practicable. Measurements previously taken will be corrected for accounting and billing purposes according to the percentage of inaccuracy so found for any known or agreed upon period of inaccuracy; in the absence of any such knowledge or agreement, the adjustment shall be limited to ninety (90) days prior to the date of such tests.

The Transmission Provider, at its expense, will have the right to install and maintain suitable metering equipment at any delivery point(s) for the purpose of checking the metering equipment installed by the Transmission Customer.

- 8.0 **Operating Requirements.** The Transmission Customer shall operate its owned Network Resources and the Transmission Provider shall operate its Transmission System in a manner consistent with that required by NERC and SERC. The Network Operating Committee shall establish reasonable, appropriate standards to ensure that the Network Customer's operation of its facilities geographically located in the Transmission Provider's Control Area does not adversely impact the Transmission Provider's Transmission System or the Transmission Provider's ability to provide quality power to other customers of the Transmission Provider. The standards will address, but are not limited to, harmonic currents, flicker, relaying and equipment coordination, resonance due to load/capacitor switching, and voltage regulation. The Network Operating Committee shall adopt industry accepted standards where available. The Network Operating Committee shall establish procedures (i) to verify compliance with the standards, (ii) to establish and maintain compliance, and (iii) to correct failures to comply in a timely manner.

Insofar as practicable, the Transmission Provider and the Transmission Customer shall protect, operate, and maintain their respective systems so as to avoid or minimize the likelihood of disturbances which might cause impairment of service on the system(s) of the other.

- 9.0 **Operational Information.** The Transmission Customer and the Transmission Provider, as applicable, shall provide the following data as needed for the safe and reliable operation of the Transmission Customer's facilities and the Transmission Provider's Control Areas and to implement the provisions of the Tariff.

At least 36 hours in advance of every calendar day, the Transmission Customer shall provide to the Transmission Provider its best forecast of any planned transmission outage(s) and other operating information that would substantially impact the reliable operation of the Transmission Provider's Control Area and the provision of Network Integration Transmission Service to the Transmission Customer. In the event that such planned outages cannot be accommodated due to a transmission constraint on the Transmission Provider's Transmission System and cannot be rescheduled for another time, the provisions of Section 33 of the Tariff will be implemented.

The Transmission Provider and the Transmission Customer shall notify and coordinate with the other Party prior to the commencement of any work by either Party (or contractors or agents performing on their behalf) that may directly or indirectly have an adverse effect on the facilities of the other Party. The Parties shall immediately notify each other at the time when any unscheduled or forced outages occur that would substantially impact the reliable operation of the Transmission Provider's Control Area and the provision of Network Integration Transmission Service to the Transmission Customer and again when such unscheduled or forced outages end.

- 10.0 **Network Planning.** In order for the Transmission Provider to plan, on an ongoing basis, to meet the Transmission Customer's requirements for Network Integration Transmission Service, the Transmission Customer shall provide, by October 31st of each year, updated information (current year and 10-year projections) for Network Load, as well as any other information reasonably necessary to plan for Network Integration Transmission Service. This type of information is consistent with the Transmission Provider's information requirements for planning to serve Native Load Customers. The data will be provided in a format mutually agreed upon by the Transmission Provider and the Transmission Customer.

- 11.0 **Character of Service.** The power delivered under this NOA shall be three (3) phase alternating current at a frequency of approximately sixty (60) hertz and at nominal voltages as specified in Section 4.0 of the Service Agreement Specifications. Except for temporary periods' of abnormal operating conditions,

voltage variations shall not exceed five (5) percent above or below a normal voltage to be determined from operating experience.

- 12.0 **Transfer of Power and Energy through Other Systems.** Since the Transmission Systems of the Transmission Provider and the Transmission Customer are, and will be, directly or indirectly connected with other electric systems, it is recognized that, because of the physical and electrical characteristics of the facilities involved, power delivered under the Service Agreement and this NOA may flow through such other systems. The Parties agree to advise other electric systems as deemed appropriate of scheduled transfers, and to attempt to maintain good relationships with affected third parties. If the Transmission Provider incurs any costs from the flow of power through other systems, Transmission Provider may seek cost recovery of the proportional share of any such costs from Transmission Customer pursuant to Section 205 of the Federal Power Act.
- 13.0 **Notice.** Any notice or request made to or by either Party regarding this Network Operating Agreement shall be made to the representative of the other Party as indicated below.

Transmission Provider:

South Carolina Electric & Gas Company Electric Transmission
601 Old Taylor Road
Cayce, South Carolina 29033
Manager of Transmission Services

Transmission Customer:

- 14.0 **Incorporation.** The Tariff and Service Agreement, as may be amended from time to time through filings with the FERC, are incorporated herein and made a part hereof.
- 15.0 **Term.** Unless otherwise agreed to by the Parties, the term of this NOA shall equal the term of the Service Agreement.

16.0 Network Operating Committee. The Transmission Customer and the Transmission Provider shall each appoint one representative and one alternate to the Network Operating Committee. Each Party shall notify the other Party of its appointments in writing. Such appointments may be changed at any time by similar notice. The Network Operating Committee shall meet as necessary to carry out the duties set forth herein. The Network Operating Committee shall hold a meeting at the request of either Party, at a time and place agreed upon by the representatives, but in any event shall meet no less frequently than on an annual basis. Each representative and alternate shall be a responsible person working with the day-to-day operations of his or her respective system. The Network Operating Committee shall represent the Transmission Provider and the Transmission Customer in all matters arising under this NOA which may be delegated to it by mutual agreement of the Parties.

The duties of the Network Operating Committee shall include those specifically referred to elsewhere in this NOA, plus, but not limited to, the following:

- (a) Review control and operating procedures, including those pertaining to information transfers between operations centers, consistent with the provisions of this NOA;
- (b) Review data requirements necessary for the Transmission Provider to provide Network Integration Transmission Service in accordance with the terms and conditions of the Tariff;
- (c) Review data acquisition equipment, protective equipment, and any other equipment or software requirements, standards, and procedures;
- (d) Review the Transformer, Transmission and Distribution Loss Compensation in Exhibit A to the Specifications for Network Integration Transmission Service to the Service Agreement between the Transmission Provider and Transmission Customer and agree on adjustments thereto, as may be necessary from time to time;
- (e) Review appropriate cost sharing, if any, associated with changes in the Transmission Provider's real-time telemetry and data acquisition system;
- (f) Establish standards for the design, operation, and maintenance of the facilities necessary to integrate the Transmission Customer's Network

Loads with the Transmission Provider's Transmission System (including, but not limited to, RTUs, communication equipment, relaying equipment and voltage/power factor measures);

- (g) Review Transmission Provider's Business Practices posted on OASIS;
- (h) Review Transmission Customer's Load Curtailment Program;
- (i) Review Transmission Provider's Load Curtailment Program; and
- (j) Perform such other duties as may be conferred upon it by mutual agreement of the Parties hereto.

Each Party shall cooperate in providing to the Network Operating Committee all information required in the performance of the Network Operating Committee's duties. All decisions and agreements, if any, made by the Network Operating Committee shall be evidenced in writing. The Network Operating Committee shall have no power to amend or alter the provisions of this NOA or the Service Agreement.

- 17.0 **Confidentiality.** Each Party will treat information provided by the other Party consistent with the Standards of Conduct contained in Part 37 of the FERC's regulations, and will not make available, disclose, provide, or communicate such information to third parties, except as compelled by law or judicial or regulatory order, rule, or directive.
- 18.0 The Parties recognize that this NOA is subject to the jurisdiction of the FERC. The Parties agree that in the event that any of the terms and conditions of this NOA are finally held or determined to be invalid, illegal or void, or to be in contravention of any applicable laws, rules, regulations or public policy, all other terms and conditions of this NOA shall remain in full force and effect unless the terms and conditions so found to be invalid, illegal or void are not reasonably separable from the remaining terms and conditions of this NOA. The Parties further agree that if the FERC or a court of competent jurisdiction issues an Order that (i) amends, modifies or conditions this NOA in a way that materially changes the obligations or benefits to either Party, or (ii) finds on a final basis any provision of this NOA to be invalid, illegal or void, the Parties shall review such Order to determine whether such amendments, modification, conditions or findings are acceptable. Within thirty (30) calendar days following such Order, the Parties shall notify each

other in writing of their acceptance or rejection of the NOA based upon any amendments, modifications, conditions or findings so ordered. A failure by a Party to provide notification within such thirty (30) day period shall be deemed acceptance; *provided, however*, that if either Party seeks rehearing or review of such Order, the thirty (30) day period shall commence following the issuance of an Order on rehearing or review. If either Party provides notification of its rejection or such Order requires adjustment of this NOA, the Parties shall enter into renegotiation of this NOA within sixty (60) calendar days either after the notification or the Order for the purposes of restoring as nearly as possible the obligations and benefits of each Party as originally bargained for and conforming this NOA with the requirements of such Order. If no agreement is reached by the Parties on the terms and conditions of a reformulated NOA within sixty (60) calendar days after the initiation of such renegotiation, the Parties agree that the Transmission Provider shall file an unexecuted NOA with the FERC no later than ninety (90) calendar days after the initiation of such renegotiation.

- 19.0 (a) Any waiver at any time by either Party of its rights with respect to any default of the other Party or with respect to any other matter arising in connection with this NOA shall not be considered a waiver with respect to any other default or matter.
- (b) This NOA shall inure to the benefit of and be binding upon the successors and assigns of the Parties. Except pursuant to order of the FERC, this NOA shall not be assigned by either Party without the written consent of the other Party. In the event one Party applies to the FERC for an order to allow assignment, the other Party may support or contest such application.
- (c) This NOA shall not be construed to create rights in, or to grant remedies to, or delegate any duty, obligation, or undertaking established herein to, any third party as a beneficiary to this NOA.
- (d) Nothing contained in this NOA shall restrict or limit either Party from establishing, altering, or terminating interconnection points with any entity not a party to this NOA or amending or entering into such agreements.
- (e) The Transmission Customer agrees to supply information the Transmission Provider deems reasonably necessary in accordance with Good Utility Practice in order for it to provide the requested service.

IN WITNESS WHEREOF, the Parties have caused this Network Operating Agreement to be executed by their respective authorized officials.

TRANSMISSION PROVIDER:

SOUTH CAROLINA ELECTRIC & GAS COMPANY

By: _____

Date: _____

Name: Charles A. White

Title: Vice President – Electric Transmission

TRANSMISSION CUSTOMER:

By: _____

Date: _____

Name: _____

Title: _____

Exhibit A

Metering Methodology

The following metering methodology will be used in this NOA and will be reviewed by the Network Operating Committee when technology advancements occur.

Meter Reading Loss Compensation

The objective of loss compensation is to adjust a meter reading to register as if it were at the delivery point, when physically located at a different point. Meter readings will be adjusted for transformer losses, transmission line losses, and, where applicable, distribution line losses which occur by using the metering point as if it was the delivery point. This section proposes an appropriate methodology for applying loss compensation in the metering.

Transformer Loss Compensation

Power transformer losses are made up of core (iron) losses that vary with voltage and winding (copper) losses that vary with current. The transformer loss data supplied by the manufacturer includes the following:

- core (iron) or no load Watts loss (NLW)
- %Ix (percent exciting current) at rated voltage and frequency
- winding (copper) loss in Watts at full load (FLW)
- total loss in Watts = NLW + FLW
- %Z (percent impedance) at rated load and temperature
- base kVA rating of transformer

Definitions:

- Vr: rated voltage of power transformer
- Vm: metered voltage
- Ir: full load current of power transformer secondary winding
- Im: metered current
- WILC: constant for calculating WATT iron losses (core)
- WCLC: constant for calculating WATT copper losses (winding)

Watt loss constants for both core and windings will be calculated using the manufacturer's data as follows:

No-Load Watt Loss Constant

- $WILC = NLW/V_r^2$

Load Watt Loss Constant

- $WCLC = FLW/I_r^2$

Var losses constants for both core and windings will be calculated using the manufacturer's data as follows:

No-Load Var Loss Constant

- % Exciting Current is provided by the manufacturer
- $VILC = \text{constant for calculating VAR iron losses (core)}$
- $NLV = \text{SQRT} [((\text{base KVA} * 1000 * \% \text{ Exciting Current} / 100)**2) - (NLW**2)]$
- $VILC = NLV/V_r^2$

Full Load Var Loss Constant

- full-load Watts loss (FLW) is provided by the manufacturer
- % IMP is provided by the manufacturer
- $VCLC = \text{constant for calculating VAR copper losses (winding)}$
- $FLV = \text{SQRT} [((\text{base KVA} * 1000 * \% \text{ IMP}/100) **2) - (FLW**2)]$
- $VCLC = FLV/I_r^2$

Calculated Losses:

$$WIL = WILC * V_m^2$$

$$WCL = WCLC * I_m^2$$

$$VIL = VILC * V_m^2$$

$$VCL = VCLC * I_m^2$$

Transmission Loss Compensation

Transmission line losses (if applicable) are calculated as follows:

- resistance per mile of conductor = r_1 in ohms/mile
- inductive reactance per mile of conductor = x_1 in ohms/mile
- $T(\text{length}) = 3 * \text{conductor length in miles}$
- transmission line current (I_p) = $\text{base kVA} / (V_p * \sqrt{3})$ where V_p is the phase to phase transmission voltage
- line loss Watts (LLW) = $r_1 * T(\text{length}) * I_p^2$
- line loss Vars (LLV) = $x_1 * T(\text{length}) * I_p^2$

Distribution Conductor Losses

Distribution line losses (if applicable) are calculated as follows:

- Rated Voltage (V_r) typically 14400, 7200 Volts
- Rated Current (I_r) = $\text{base kVA} / (3 * V_r)$
- resistance per mile of conductor = r_2 in ohms/mile
- inductive reactance per mile of conductor = x_2 in ohms/mile
- $D(\text{length}) = 3 * \text{conductor length in miles}$
- $R(\text{cond}) = r_2 * D(\text{length})$
- conductor loss Watts (CLW) = $I_r^2 * R(\text{cond})$
- $X(\text{cond}) = x_2 * D(\text{length})$
- conductor loss Vars (CLV) = $I_r^2 * X(\text{cond})$

Total Loss Compensation Values

- total loss in Watts (TLW) = $WIL + WCL + LLW + CLW$
- total loss in Vars (TLV) = $VIL + VCL + LLV + CLV$

Scaling Factors

- Voltage transformer ratio (VTR) in ratios of 14400/120, 7200/120, etc.
- Current transformer ratio (CTR) in ratios of 500/5, 1000/5, 2000/5, etc.
- Metering voltage (V_m) typically 120 Volts
- Meter Amps (I_m) typically 5 Amps at full loading