

Control Number: 35077



Item Number: 122

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**PUC Project No. 35077**

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**Amendment to the**

PUBLIC UTILITIES COMMISSION

**INTERCONNECTION AGREEMENT**

**Between**

**Texas Utilities Electric Company  
(TXU)**

**and**

**Lower Colorado River Authority**

**October 27, 2000**

**AMENDMENT TO  
INTERCONNECTION AGREEMENT**

This Amendment ("Amendment") to the Interconnection Agreement, dated October 17, 1997 between TXU Electric Company ("TXU Electric") (formerly known as Texas Utilities Electric Company) and the Lower Colorado River Authority ("LCRA") (the "Agreement") is made and entered into this 27th day of October, 2000 between TXU Electric and the LCRA, collectively referred to hereinafter as the Parties. In consideration of the mutual promises and undertakings herein set forth, the Parties agree to amend the Agreement as follows:

1. Exhibit A attached to the Agreement is deleted in its entirety and the Exhibit A attached to this Amendment is hereby added to the Agreement in lieu thereof.

2. Facility Schedule No. 3A and Facility Schedule No. 3B of the Agreement are deleted in their entirety and Facility Schedule No. 3 (including the one-line diagram attached thereto) attached to this Amendment is hereby added to the Agreement in lieu thereof.

3. Facility Schedule No. 6 (including the one-line diagram attached thereto) attached to this Amendment is hereby added to the Agreement.

4. Facility Schedule No. 7 (including the one-line diagram attached thereto) attached to this Amendment is hereby added to the Agreement.

5. Facility Schedule Nos. 3, 6 and 7 will become effective upon execution of this Amendment by the Parties. Unless otherwise agreed by the Parties, the Copperas Cove Substation Point of Interconnection will not be placed into service under Facility Schedule No. 3, the Camp Bowie Substation Point of Interconnection will not be placed into service under Facility Schedule No. 6, and the Gilleland Substation Point of Interconnection will not be placed into service under Facility Schedule No. 7 until the Parties have completed the installation and testing of all equipment to be furnished for these Points of Interconnection in accordance with the provisions contained in Facility Schedule Nos. 3, 6 and 7, respectively ("Service Commencement Date"). LCRA will document the Service Commencement Date for the Copperas Cove Substation Point of Interconnection, the Camp Bowie Substation Point of Interconnection and the Gilleland Substation Point of Interconnection in writing to TXU Electric.

6. Except as otherwise expressly provided for herein, the Agreement will continue in full force and effect in accordance with its terms.

IN WITNESS WHEREOF, the Parties have caused this Amendment to be executed in several counterparts, each of which shall be deemed an original but all shall constitute one and the same instrument.

TXU ELECTRIC COMPANY

By: 

Name: Jeffrey Herring

Title: Transmission Services Manager

Date: 10/27/00

LOWER COLORADO RIVER AUTHORITY

By: 

Name: Ray Pfeifferkorn, P.E.

Title: Transmission Eng. Mgr.

Date: October 25, 2000

## EXHIBIT A

### LIST OF FACILITY SCHEDULES AND POINTS OF INTERCONNECTION

<u>Facility Schedule No.</u>	<u>Name of Point of Interconnection</u>	<u>Responsible Party</u>
1	ROUND ROCK-CHIEF BRADY	N/A
2	ROUND ROCK-MCNEIL	N/A
3	COPPERAS COVE SUBSTATION	LCRA
4	ELGIN SUBSTATION	TXU ELECTRIC
5	HOWARD LANE-ROUND ROCK SOUTH	LCRA
6	CAMP BOWIE SUBSTATION	LCRA
7	GILLELAND SUBSTATION	LCRA

### FACILITY SCHEDULE NO. 3

1. Name: Copperas Cove Substation ("Point of Interconnection")
2. Point of Interconnection location: The Point of Interconnection is located where the Lampasas to Killeen Switch 138kV transmission line changes ownership between TXU Electric and LCRA at the county line between Lampasas and Coryell counties (see attached one-line diagrams).
3. Delivery voltage: 138 kV
4. Metering (voltage, location, losses adjustment due to metering location, and other): All required bi-directional interconnection metering and telemetry will be installed and owned by LCRA inside LCRA's Copperas Cove Substation ("Substation") and will be designed and installed in accordance with the attached Supplemental Terms and Conditions to Facility Schedule No. 3 and the applicable provisions of the ERCOT Operating Guides. Primary and backup bi-directional interchange metering will be accomplished using 138kV potential and current metering accuracy instrument transformers located in the Substation.
5. Normally closed? Yes
6. One line diagram attached? Yes
7. Facilities to be owned by TXU Electric:  
TXU Electric shall own and furnish the following facilities at the Point of Interconnection: 138kV transmission line structure no. 15/9, associated hardware and connectors, and 138kV transmission line conductors and shield wire from structure no. 15/9 to the Point of Interconnection.  
  
TXU Electric will furnish the necessary data circuit(s) required by TXU Electric to be installed from the Substation RTU to a designated TXU Electric system control center(s).
8. Facilities to be owned by LCRA:
  - i) LCRA shall own and furnish the following metering equipment at the Substation in association with the interchange of power and energy at the Point of Interconnection: three 138kV metering accuracy potential transformers located on the 138kV operating bus, three 138kV metering accuracy current transformers located in LCRA's breaker #6640, and Interchange Metering Equipment. LCRA's Interchange Metering Equipment will consist of a primary interchange meter, backup interchange meter, telemetry, and communications equipment, designed and installed in accordance with the attached Supplemental Terms and Conditions to Facility Schedule No. 3 and the applicable provisions of the ERCOT Operating Guides. LCRA will furnish the necessary data circuit(s) and interface equipment required under this Facility Schedule to be installed from the Substation RTU to LCRA's System Control Center(s).
  - ii) LCRA will furnish the following facilities at the Point of Interconnection: 138kV transmission line structure no. 15/8, associated hardware and connectors, and 138kV transmission line conductors and shield wire from structure no. 15/8 to the Point of Interconnection.
9. Cost Responsibility: Each Party will be fully responsible for the liabilities related to the facilities it owns. TXU Electric and LCRA will each be responsible for all costs it incurs in connection with the establishment of this Point of Interconnection as a normally closed bi-directional Point of Interconnection in accordance with this Facility Schedule. LCRA and TXU Electric will each be responsible for the installation and ongoing cost of its communications circuit(s) installed in connection with this Point of Interconnection.
10. Control area interchange point? Yes
11. Supplemental terms and conditions attached? Yes

**SUPPLEMENTAL TERMS AND CONDITIONS**  
**TO**  
**FACILITY SCHEDULE NO. 3**

TXU Electric and LCRA will control to the real-time analog MW power flow values metered at LCRA's Copperas Cove Substation ("Substation"). These real-time power flow values will be received at LCRA's system control center ("LCRA's System Control Center") from LCRA's Substation RTU ("RTU"), from which the value will be added to the net interchange total signal ("Total") being sent to TXU Electric's system control center ("TXU Electric's System Control Center"). The RTU equipment will provide both accumulator energy measurements and real-time power flow values. To receive real-time telemetered MW and MVAR power flow values, LCRA will poll the RTU every 2-4 seconds (on a nominal basis), or such other scanning interval as mutually agreed by the Parties.

**METERING AND TELEMETRY**

Metering at the Point of Interconnection will be accomplished in accordance with these Supplemental Terms and Conditions to Facility Schedule No. 3 and the applicable provisions of the ERCOT Operating Guides. Power and energy will be measured using a primary meter and a backup meter ("Interchange Meters"), both equipped with pulse and analog outputs. The Interchange Meters shall be Siemens 2510, or equivalent, bi-directional, 3-phase, 3-element, 4-wire meters.

The Interchange Meters shall be equipped with pulse outputs for transmitting metered MWH and MVARH values and analog outputs for transmitting metered MW and MVAR values. The outputs of the primary meter will provide inputs to the RTU. The backup meter will verify the accuracy of the primary meter, monitor power and energy flow during primary meter tests, and replace the primary meter, if necessary

The Interchange Meters shall be capable of displaying real-time interchange metering values. Interchange Meter registers shall maintain i) MWH delivered, ii) MWH received, iii) MVARH delivered, and iv) MVARH received. Interrogation of the Interchange Meters shall not clear, reset, or in any way affect any registers which are transmitted during interrogation. Test switches shall be provided so as to allow testing of the complete metering system.

**ACCOUNTING**

Analog MW and MVAR flows, accumulator MWH and MVARH measurements, interconnection switching device status, including circuit breakers, and bus voltage will be supplied (1) to LCRA's System Control Center from the RTU, where it will be made available to TXU Electric's System Control Center and (2) directly to a TXU Electric designated system control center from a separate port in the RTU.

Each hour, LCRA will compare the integrated MWH interchange energy measurement against the MWH accumulator energy measurement received from the RTU.

Each hour, LCRA will transmit its MWH accumulator energy measurements to TXU Electric to verify that both Parties are using the same values. In the event that either Party discovers a significant discrepancy in the values, LCRA will promptly make an investigation to determine the cause and the Parties will use their best efforts to take corrective action as quickly as is reasonably possible.

In the event that either Party discovers an equipment malfunction or failure, such Party will promptly notify the other Party, and the control area operators will manually enter mutually agreed upon values in their respective control systems until such equipment malfunction or failure is corrected by the Party responsible for the equipment.

Each week or such other time period as otherwise agreed to by the Parties, LCRA shall, at its discretion, perform an onsite or remotely interrogated MWH reading of the Interchange Meters. Any differences between the logged hourly values and weekly readings shall be reconciled by the Parties at least once per month. Any discrepancy in the amount of energy interchanged at the Point of Interconnection shall be resolved in accordance with the Inadvertent Energy Accounting procedures contained in the ERCOT Operating Guides.

LCRA shall maintain log sheets, metering records, telemetry records, and any other information as may be needed to afford a record of movement of the power and energy between the control areas. LCRA will maintain and make available to TXU Electric upon request the following information: (a) hourly MWH accumulator energy measurements, (b) weekly MWH accumulator energy measurements, (c) weekly metered MWH energy measurements from on-site meter readings, and (d) hourly MVAR measurements. LCRA shall not be required to maintain such information for a period longer than 18 months. All records shall be kept in accordance with normal accounting procedures and will be open to inspection by TXU Electric during normal business hours.

Each Party shall furnish to the other Party appropriate and reasonable data from the records to be maintained hereunder when such data is needed for settlement, operations, maintenance, tests, calibrations, or other purposes consistent with the Interconnection Agreement. Each Party shall be responsive in furnishing the requested data, which response shall not exceed seven (7) working days, unless otherwise agreed to by the Parties.

LCRA shall be responsible for all applicable ERCOT reporting requirements associated with the Point of Interconnection.

### **TELEMETRY**

Inter-control area telemetry shall be accomplished in accordance with these Supplemental Terms and Conditions to Facility Schedule No. 3 and the applicable provisions of the ERCOT Operating Guides.

LCRA will install RTU equipment powered from a DC source to monitor power and energy flows, device status, and bus voltage, and will transmit such data to LCRA's System Control Center, where such data will be made available to TXU Electric's System Control Center.

LCRA shall initially supply TXU Electric with one RTU Communication Port. LCRA hereby agrees that upon a future request by TXU Electric, LCRA will provide TXU Electric with a second RTU communication port as available from the RTU for TXU Electric's use. TXU Electric shall provide a point's list to LCRA.

### **COMMUNICATIONS**

Inter-control area communications will be accomplished in accordance with these Supplemental Terms and Conditions to Facility Schedule No. 3 and the applicable provisions of the ERCOT Operating Guides.

The communication equipment shall be powered from a DC battery source and the source shall be sized to maintain all necessary communications equipment.

### **CURRENT TRANSFORMERS AND POTENTIAL TRANSFORMERS**

Current transformers and potential transformers shall meet the accuracy rating/class specified in the ERCOT Operating Guides.

### **ACCEPTANCE TESTS**

Prior to the implementation of the inter-control area metering, acceptance tests will be performed by LCRA and TXU Electric to ensure the proper functioning of all inter-control area metering, telemetry, and communications, equipment, and to verify the accuracy of data being received at each Party's System Control Center. All acceptance tests will be performed by TXU Electric and LCRA consistent with standard ERCOT procedures.

### **DESIGN AND CONSTRUCTION**

All equipment installed and work performed shall be designed, constructed and tested in accordance with the latest revisions in effect at the time of the applicable codes, standards, specifications, regulations, tests, and procedures of all federal, state, and local laws including, but not limited to, the following:

1. American National Standards Institute (ANSI)
2. National Electrical Manufacturers Association (NEMA)
3. Occupational Safety and Health Administration (OSHA)

#### **RELAY SETTINGS**

TXU Electric and LCRA will mutually agree on the relay settings where the protection of TXU Electric's facilities are impacted by the operation of LCRA's equipment. TXU Electric and LCRA will mutually agree on the relay settings where the protection of LCRA's facilities are impacted by the operation of TXU Electric's equipment.

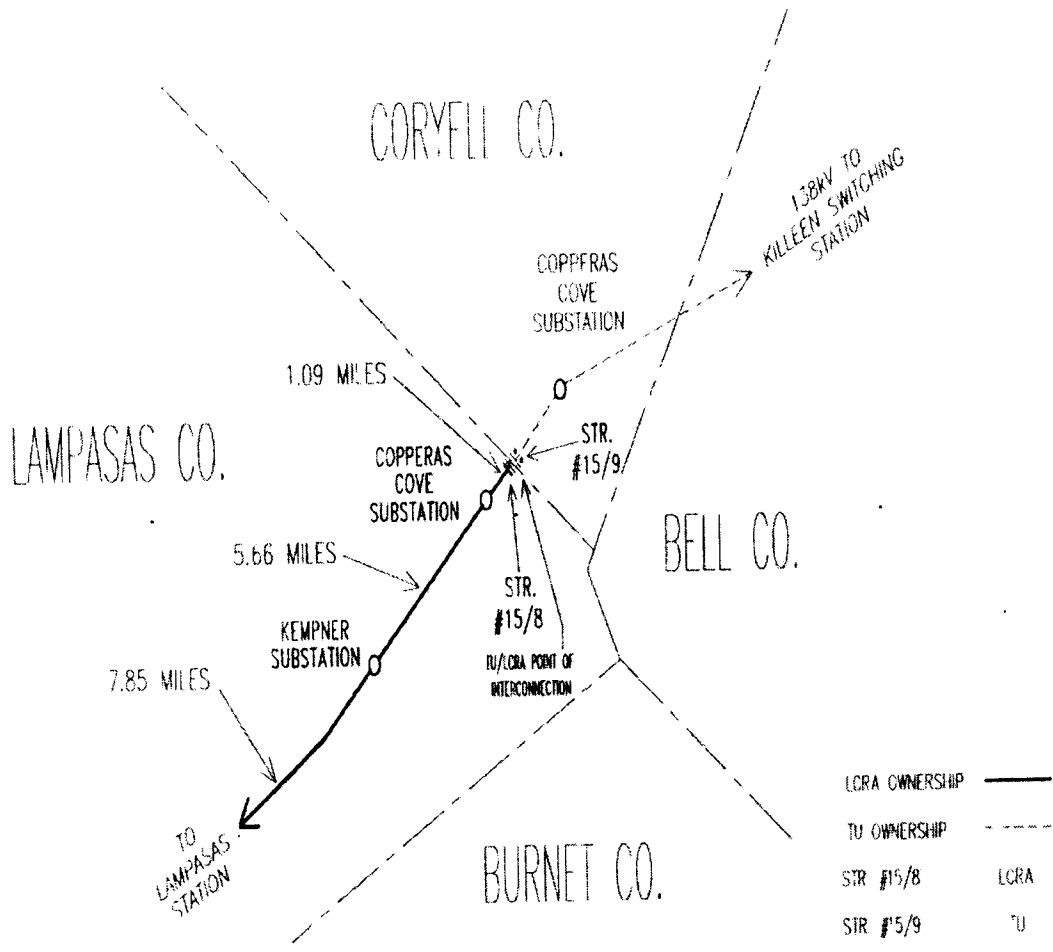
#### **METER TESTING**

LCRA will test and calibrate the Interchange Meters annually and will record such tests on standard ERCOT forms and will notify TXU Electric at least 5 working days in advance of any planned testing or calibration of such metering equipment. TXU Electric shall have the right to be present and to receive copies of any documents related to the tests.





# COPPERAS COVE POINT OF INTERCONNECTION ONE-LINE DIAGRAM



## FACILITY SCHEDULE NO. 6

1. Name: Camp Bowie Substation ("Point of Interconnection")
2. Point of Interconnection location: The location is about 3.3 miles from TXU Electric's South Brownwood substation and taps into TXU Electric's South Brownwood to Brownwood Switch 138kV transmission line ("TXU Electric's Transmission Line"). The Point of Interconnection is located where the LCRA buswork and the TXU Electric buswork meet at the LCRA Camp Bowie Substation ("Substation") (see attached one-line diagram and elevation drawing). The Substation is located south of the City of Brownwood near the location where TXU Electric's Transmission Line intersects FM 45, in Brown County.
3. Delivery voltage: 138 kV
4. Metering (voltage, location, losses adjustment due to metering location, and other): All required uni-directional interconnection metering and telemetry will be installed and owned by LCRA inside the Substation and will be designed and installed in accordance with Exhibit B and the applicable provisions of the ERCOT Operating Guides. Primary and backup uni-directional interchange metering will be accomplished using 24.9 kV potential and current metering accuracy instrument transformers located in the Substation. The primary and backup meters will be equipped to compensate for losses to the Point of Interconnection.
5. Normally closed? Yes
6. One line diagram attached? Yes
7. Facilities to be owned by TXU Electric:  
TXU Electric shall own and furnish TXU Electric's Transmission.  
TXU Electric shall own the following equipment within the Substation:  
One (1) substation deadend "A" frame and line insulator strings with attachment hardware to terminate TXU Electric's Transmission Line  
One (1) 138 kV, 1200A vertical line switch with manual operator and with line interrupter (MVI; load break)  
Two (2) 138 kV, 1200A vee switches with manual operators ("TXU Electric's Disconnect Switches")  
One lot of switch grounding straps and switch pads  
One lot of 795 ACSR and 1½" aluminum buswork and associated connectors and jumpers to connect TXU Electric's Disconnect Switches to TXU Electric's Transmission Line.
8. Facilities to be owned by LCRA:  
Substation land, ground grid, overhead ground shield connection to TXU Electric's Transmission Line shield wire, substation fencing  
One lot of 795 ACSR and 1½" Aluminum buswork and associated connectors  
795 ACSR jumpers from the TXU Electric buswork to the LCRA buswork at the Point of Interconnection  
Two (2) 138 kV vee switches  
One (1) 138 kV circuit switcher  
One (1) 138/24.9 kV 10 MVA transformer  
One (1) set of 24.9 kV voltage regulators  
Relay/control panels for transformer protection  
Interconnection Metering Equipment and associated instrument transformers  
Other facilities (control house, batteries, etc.) located within the Substation.

9. Cost Responsibility: Each Party will be fully responsible for the liabilities related to the facilities it owns. TXU Electric and LCRA will each be responsible for all costs it incurs in connection with the establishment of this Point of Interconnection as a normally closed uni-directional Point of Interconnection in accordance with this Facility Schedule. LCRA and TXU Electric will each be responsible for the installation and ongoing cost of its communications circuits (if any) for this Point of Interconnection.

LCRA will design and construct the Substation including TXU Electric's Substation facilities specified in Section 7 above and upon completion of the Substation, LCRA will invoice TXU Electric and TXU Electric will pay LCRA all cost reasonably incurred by LCRA in installing TXU Electric's Substation facilities. TXU Electric will approve designs, equipment specifications and construction of TXU Electric's Substation facilities and all designs, equipment specifications and construction of LCRA's Substation facilities that will impact the operation of TXU Electric's Substation facilities and/or TXU Electric's Transmission Line.

10. Control area interchange point? Yes

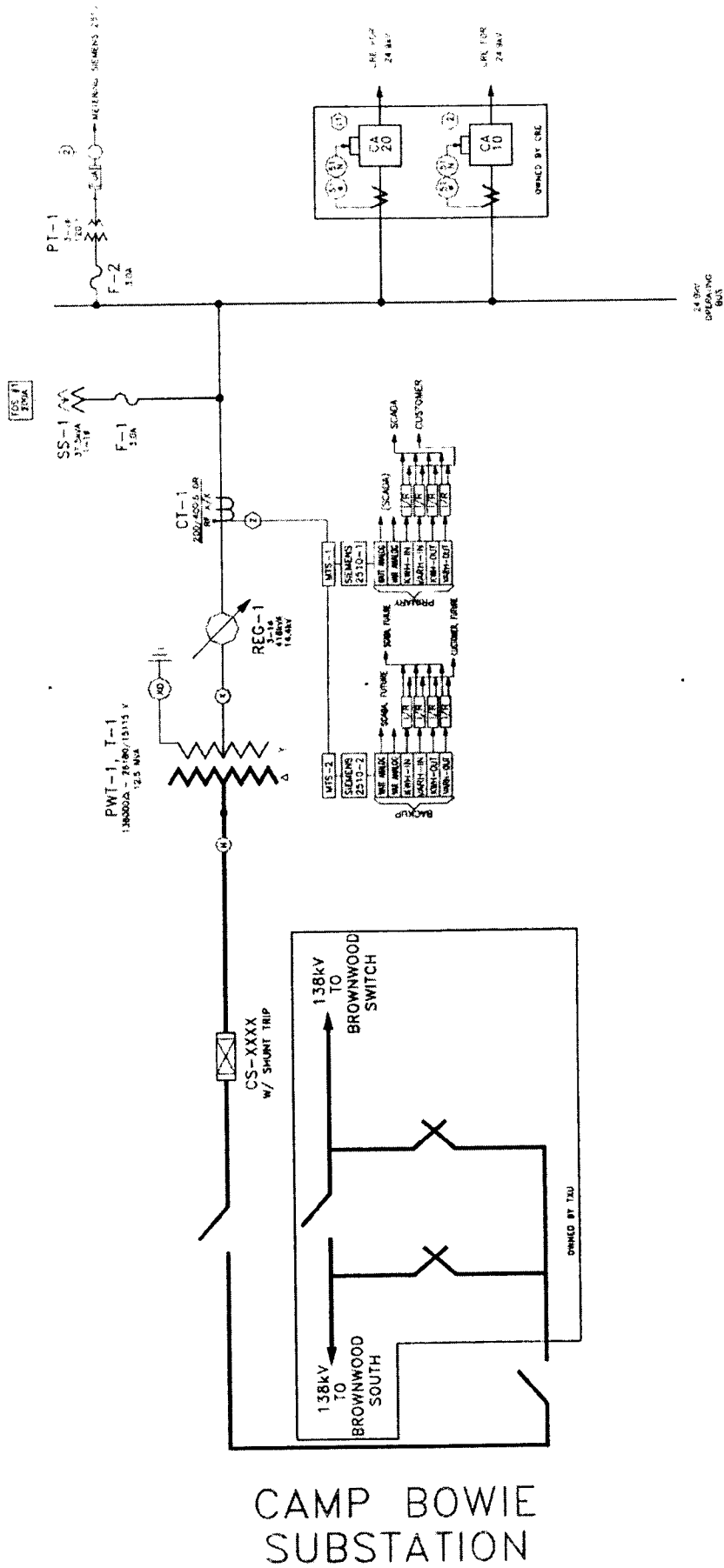
11. Supplemental terms and conditions:

(a) Inter-control area interchange metering equipment and operating procedures for this Point of Interconnection will be in accordance with Exhibit B of the Agreement. The interchange control strategy for this Point of Interconnection shall be as specified for aggregated points of interconnection under Section 3.0 of Exhibit B.

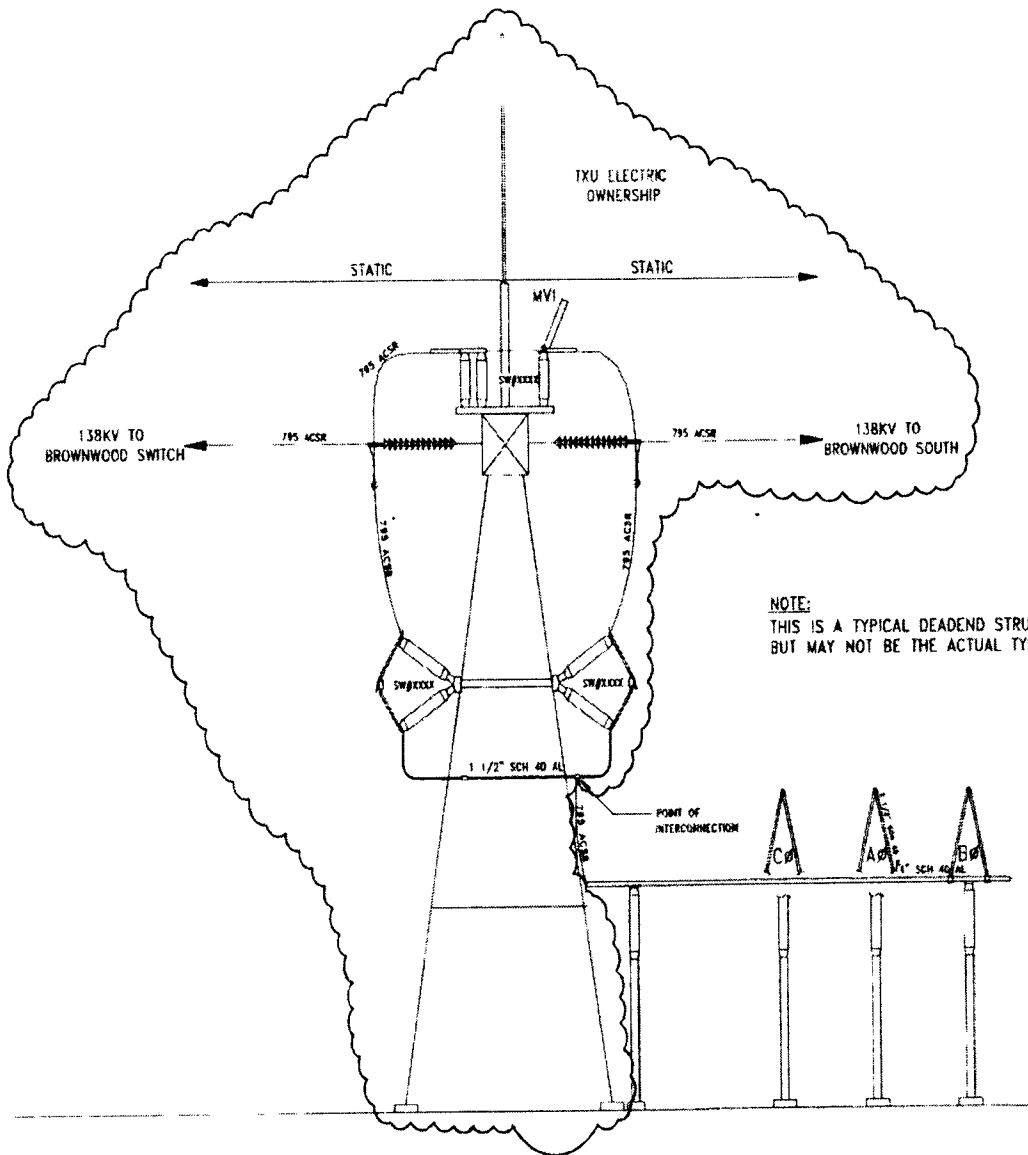
(b) LCRA will be the "Responsible Party" for this Point of Interconnection as such responsibility is assigned in Exhibits A and B of this Agreement.

# FACILITY SCHEDULE NO. ONE-LINE DIAGRAM

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FACILITY SCHEDULE NO. 6  
ELEVATION DRAWING



CAMP BOWIE SUBSTATION

CMPBOWIE.DWG

**FACILITY SCHEDULE NO. 7**

1. **Name:** Gilleland Substation ("Point of Interconnection")
2. **Point of Interconnection location:** There will be two distinct Points of Interconnection at this location; one where each of the two TXU Electric Pflugerville Substation – LCRA Gilleland Substation 138 kV transmission lines ("TXU Electric's Transmission Lines") terminate in LCRA's Gilleland Substation ("Substation"). The Points of Interconnection are located at the 138 kV insulator string conductor attachments where TXU Electric's Transmission Lines attach to the LCRA A-frame deadend structures in the Substation (see attached one-line diagram and elevation drawing). This Point of Interconnection is located in Travis County.
3. **Delivery voltage:** 138 kV
4. **Metering (voltage, location, losses adjustment due to metering location, and other):** All required bi-directional interconnection metering and telemetry will be installed and owned by LCRA inside the Substation and will be designed and installed in accordance with the Supplemental Terms and Conditions to Facility Schedule No. 7 and the applicable provisions of the ERCOT Operating Guides. There will be two distinct metering points; one for each of the two terminations of TXU Electric's Transmission Lines. Primary and backup bi-directional interchange metering will be accomplished using 138kV potential and current metering accuracy instrument transformers located in the Substation.
5. **Normally closed?** Yes
6. **One line diagram attached?** Yes
7. **Facilities to be furnished and owned by LCRA:**  
Substation land  
Four (4) 138kV circuit breakers and all associated buswork, switches, relay/control panels  
Ground grid, overhead ground shield connection to TXU Electric's Transmission Lines shield wire  
Bi-directional interconnection metering and associated instrument transformers  
Other facilities (control house, batteries, etc.) located within the Substation.
8. **Facilities to be furnished and owned by TXU Electric:** TXU Electric will design, construct, and own TXU Electric's Transmission Lines and associated insulator strings and attachment hardware to terminate TXU Electric's Transmission Lines on LCRA's Substation deadend "A" frames.
9. **Cost Responsibility:** Each Party will be fully responsible for the liabilities related to the facilities it owns. TXU Electric and LCRA will each be responsible for all costs it incurs in connection with the establishment of this Point of Interconnection as a normally closed bi-directional Point of Interconnection in accordance with this Facility Schedule. LCRA and TXU Electric will each be responsible for the installation and ongoing cost of its communications circuit(s) installed in connection with this Point of Interconnection.
10. **Control area interchange point?** Yes
11. **Supplemental terms and conditions attached?** Yes

## SUPPLEMENTAL TERMS AND CONDITIONS

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#### FACILITY SCHEDULE NO. 7

TXU Electric and LCRA will control to the real-time analog MW power flow values metered at LCRA's Gilleland Substation ("Substation"). These real-time power flow values will be received at LCRA's system control center ("LCRA's System Control Center") from LCRA's Substation RTU ("RTU"), from which the value will be added to the net interchange total signal ("Total") being sent to TXU Electric's system control center ("TXU Electric's System Control Center"). The RTU equipment will provide both accumulator energy measurements and real-time power flow values. To receive real-time telemetered MW and MVAR power flow values, LCRA will poll the RTU every 2-4 seconds (on a nominal basis), or such other scanning interval as mutually agreed by the Parties.

#### **METERING AND TELEMETRY**

Metering at the Points of Interconnection will be accomplished in accordance with these Supplemental Terms and Conditions to Facility Schedule No. 7 and the applicable provisions of the ERCOT Operating Guides. Power and energy will be measured using a primary meter and a backup meter ("Interchange Meters"), both equipped with pulse and analog outputs. The Interchange Meters shall be Siemens 2510, or equivalent, bi-directional, 3-phase, 3-element, 4-wire meters.

The Interchange Meters shall be equipped with pulse outputs for transmitting metered MWH and MVARH values and analog outputs for transmitting metered MW and MVAR values. The outputs of the primary meter will provide inputs to the RTU. The backup meter will verify the accuracy of the primary meter, monitor power and energy flow during primary meter tests, and replace the primary meter, if necessary.

The Interchange Meters shall be capable of displaying real-time interchange metering values. Interchange Meter registers shall maintain i) MWH delivered, ii) MWH received, iii) MVARH delivered, and iv) MVARH received. Interrogation of the Interchange Meters shall not clear, reset, or in any way affect any registers which are transmitted during interrogation. Test switches shall be provided so as to allow testing of the complete metering system.

#### **ACCOUNTING**

Analog MW and MVAR flows, accumulator MWH and MVARH measurements, interconnection switching device status, including circuit breakers, and bus voltage will be supplied (1) to LCRA's System Control Center from the RTU, where it will be made available to TXU Electric's System Control Center and (2) directly to a TXU Electric designated system control center from a separate port in the RTU.

Each hour, LCRA will compare the integrated MWH interchange energy measurement against the MWH accumulator energy measurement received from the RTU.

Each hour, LCRA will transmit its MWH accumulator energy measurements to TXU Electric to verify that both Parties are using the same values. In the event that either Party discovers a significant discrepancy in the values, LCRA will promptly make an investigation to determine the cause and the Parties will use their best efforts to take corrective action as quickly as is reasonably possible.

In the event that either Party discovers an equipment malfunction or failure, such Party will promptly notify the other Party, and the control area operators will manually enter mutually agreed upon values in their respective control systems until such equipment malfunction or failure is corrected by the Party responsible for the equipment.

Each week or such other time period as otherwise agreed to by the Parties, LCRA shall, at its discretion, perform an onsite or remotely interrogated MWH reading of the Interchange Meters. Any differences between the logged hourly values and weekly readings shall be reconciled by the Parties at least once per month. Any discrepancy in the amount of energy interchanged at the Point of Interconnection shall be resolved in accordance with the Inadvertent Energy Accounting procedures contained in the ERCOT Operating Guides.



LCRA shall maintain log sheets, metering records, telemetry records, and any other information as may be needed to afford a record of movement of the power and energy between the control areas. LCRA will maintain and make available to TXU Electric upon request the following information: (a) hourly MWH accumulator energy measurements, (b) weekly MWH accumulator energy measurements, (c) weekly metered MWH energy measurements from on-site meter readings, and (d) hourly MVAR measurements. LCRA shall not be required to maintain such information for a period longer than 18 months. All records shall be kept in accordance with normal accounting procedures and will be open to inspection by TXU Electric during normal business hours.

Each Party shall furnish to the other Party appropriate and reasonable data from the records to be maintained hereunder when such data is needed for settlement, operations, maintenance, tests, calibrations, or other purposes consistent with the Interconnection Agreement. Each Party shall be responsive in furnishing the requested data, which response shall not exceed seven (7) working days, unless otherwise agreed to by the Parties.

LCRA shall be responsible for all applicable ERCOT reporting requirements associated with the Point of Interconnection.

### **TELEMETRY**

Inter-control area telemetry shall be accomplished in accordance with these Supplemental Terms and Conditions to Facility Schedule No. 7 and the applicable provisions of the ERCOT Operating Guides.

LCRA will install RTU equipment powered from a DC source to monitor power and energy flows, device status, and bus voltage, and will transmit such data to LCRA's System Control Center, where such data will be made available to TXU Electric's System Control Center.

LCRA shall initially supply TXU Electric with one RTU Communication Port. LCRA hereby agrees that upon a future request by TXU Electric, LCRA will provide TXU Electric with a second RTU communication port as available from the RTU for TXU Electric's use. TXU Electric shall provide a point's list to LCRA.

### **COMMUNICATIONS**

Inter-control area communications will be accomplished in accordance with these Supplemental Terms and Conditions to Facility Schedule No. 7 and the applicable provisions of the ERCOT Operating Guides.

The communication equipment shall be powered from a DC battery source and the source shall be sized to maintain all necessary communications equipment.

### **CURRENT TRANSFORMERS AND POTENTIAL TRANSFORMERS**

Current transformers and potential transformers shall meet the accuracy rating/class specified in the ERCOT Operating Guides.

### **ACCEPTANCE TESTS**

Prior to the implementation of the inter-control area metering, acceptance tests will be performed by LCRA and TXU Electric to ensure the proper functioning of all inter-control area metering, telemetry, and communications, equipment, and to verify the accuracy of data being received at each Party's System Control Center. All acceptance tests will be performed by TXU Electric and LCRA consistent with standard ERCOT procedures.

### **DESIGN AND CONSTRUCTION**

All equipment installed and work performed shall be designed, constructed and tested in accordance with the latest revisions in effect at the time of the applicable codes, standards, specifications, regulations, tests, and procedures of all federal, state, and local laws including, but not limited to, the following:

1. American National Standards Institute (ANSI)
2. National Electrical Manufacturers Association (NEMA)
3. Occupational Safety and Health Administration (OSHA)

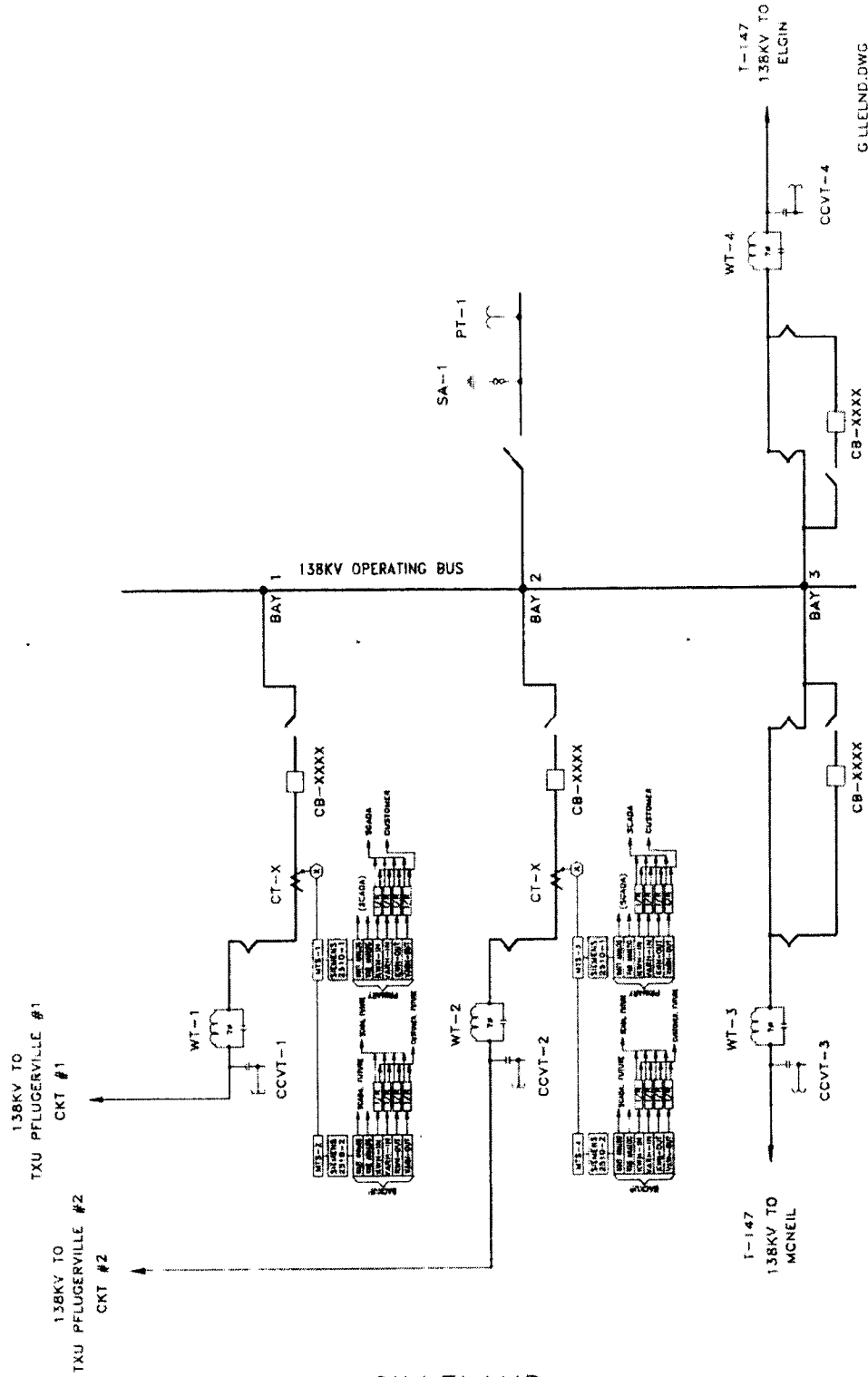
#### **RELAY SETTINGS**

TXU Electric and LCRA will mutually agree on the relay settings where the protection of TXU Electric's facilities are impacted by the operation of LCRA's equipment. TXU Electric and LCRA will mutually agree on the relay settings where the protection of LCRA's facilities are impacted by the operation of TXU Electric's equipment.

#### **METER TESTING**

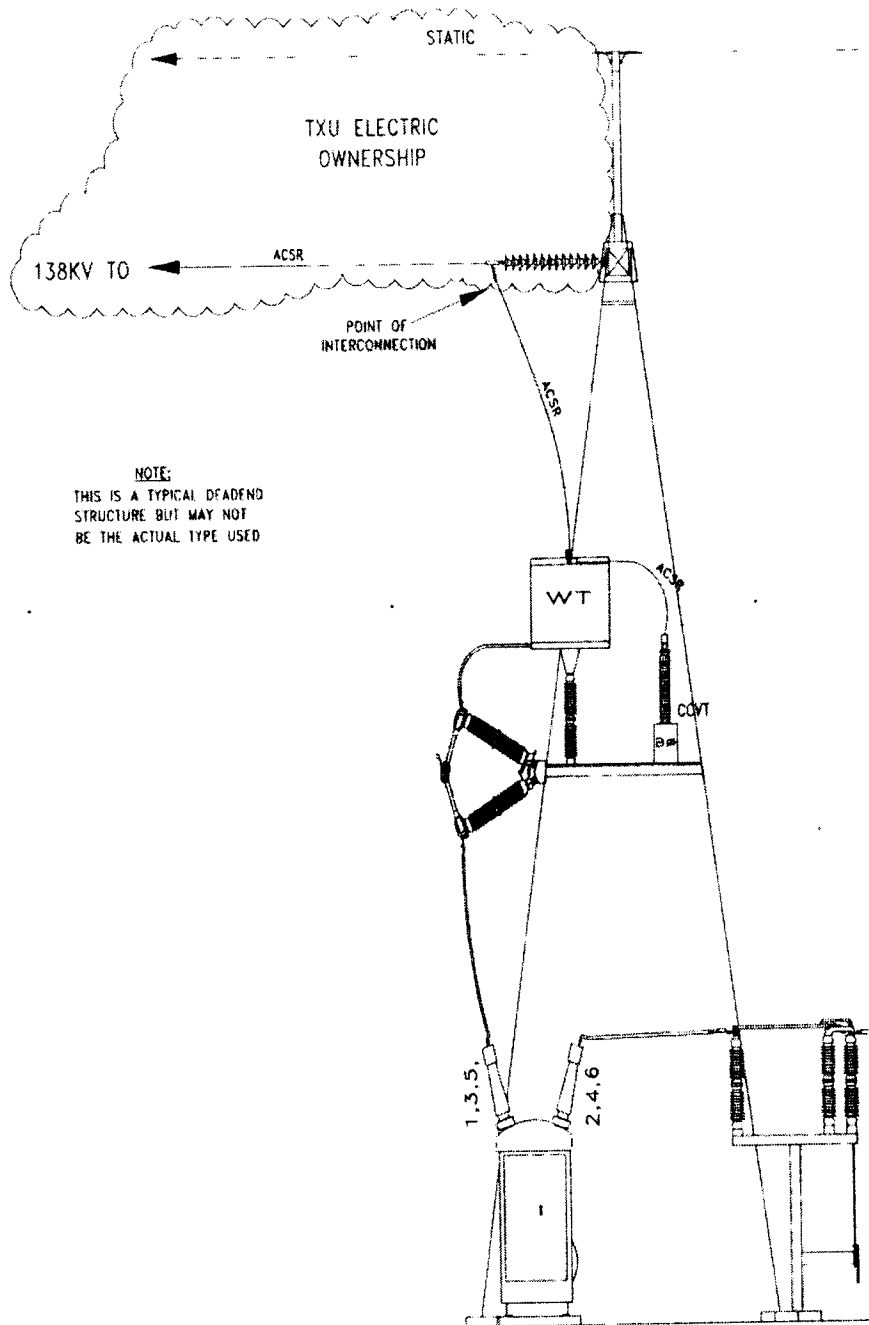
LCRA will test and calibrate the Interchange Meters annually and will record such tests on standard ERCOT forms and will notify TXU Electric at least 5 working days in advance of any planned testing or calibration of such metering equipment. TXU Electric shall have the right to be present and to receive copies of any documents related to the tests.

# FACILITY SCHEDULE NO. 7 ONE-LINE DIAGRAM



GILLELAND  
SUBSTATION

# FACILITY SCHEDULE NO. 7 ELEVATION DRAWING



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## GILLELAND SUBSTATION