



Control Number: 35077



Item Number: 556

Addendum StartPage: 0

**PUC Project No. 35077**

2015 JUN 10 PM 4: 27

PUBLIC UTILITY COMMISSION  
FILING CLERK

**Amendment No. 5**

**INTERCONNECTION AGREEMENT**

**Between**

**LCRA Transmission Services Corporation**

**and**

**New Braunfels Utilities**

**Dated**

**June 3, 2015**

556

**FIFTH AMENDMENT TO  
INTERCONNECTION AGREEMENT**

This Fifth Amendment to Interconnection Agreement ("Fifth Amendment") is made and entered into this 3 day of June, 2015, between New Braunfels Utilities ("NBU"), a municipally owned utility and LCRA Transmission Services Corporation ("LCRA TSC") collectively referred to hereinafter as the Parties.

**WHEREAS**, LCRA TSC and NBU entered into that certain Interconnection Agreement executed July 22, 2009, as amended by that certain Amendment No. 1, executed as of December 16, 2009, as amended by that certain Amendment No. 2, executed as of January 17, 2011, as amended by that certain Amendment No. 3, executed as of January 8, 2014, as amended by that certain Amendment No. 4, executed as of September 17, 2014 (collectively, as amended, the "Agreement"); and

**WHEREAS**, LCRA TSC will upgrade the protection scheme at Henne Substation.

**NOW, THEREFORE**, in consideration of the mutual promises and undertakings herein set forth, the Parties agree to amend the Agreement as follows:

1. Exhibit "A" Amendment No. 4, attached to the Agreement, is deleted in its entirety and Exhibit "A" Amendment No. 5, attached to this Fifth Amendment, is substituted as Exhibit A of the Agreement as of the effective date of this Fifth Amendment.
2. Facility Schedule No. 3 (including the diagrams attached thereto) is deleted in its entirety and Facility Schedule No. 3, attached to this Fifth Amendment, is hereby added to the Agreement in lieu thereof.
3. Facility Schedule No. 3 (including the diagrams attached thereto), attached to this Fifth Amendment, will become effective upon execution of this Fifth Amendment by the Parties.
4. The changes described in this Fifth Amendment, and the diagrams attached thereto, will become effective upon execution of this Fifth Amendment.

Except as otherwise expressly provided in this Fifth Amendment, all the terms and conditions of the Agreement shall remain in full force and effect.

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IN WITNESS WHEREOF, the Parties, acting through their authorized representatives, have executed this Fifth Amendment in two counterparts, each of which shall be deemed an original, but shall constitute one and the same instrument.

NEW BRAUNFELS UTILITIES

By: *Paula DiFonzo*

Name: Paula J. DiFonzo

Title: Chief Executive Officer

Date: June 3, 2015

LCRA TRANSMISSION SERVICES  
CORPORATION

By: *Ray Pfefferkorn*

Name: Ray Pfefferkorn, P.E.

Title: LCRA Transmission Engineering  
Manager

Date: 5/28/15



**EXHIBIT A**  
**Amendment No 5**

<b>FACILITY SCHEDULE NO.</b>	<b>LOCATION OF POINT(S) OF INTERCONNECTION (# of Points)</b>	<b>INTERCONNECTION VOLTAGE (KV)</b>	<b>EFFECTIVE DATE OF INTERCONNECTION</b>
1	Comal (6)	138 kV	January 17, 2011
2	Freiheit Road (2)	138 kV	July 22, 2009
3	Henne (4)	138 kV	Date of 5 <sup>th</sup> Amendment
4	Highway 46 (2)	138 kV	January 8, 2014
5	Hortontown (3)	138 kV	July 22, 2009
6	Sheriff's Posse (1)	138 kV	July 22, 2009
7	Marion (2)	138 kV	January 17, 2011
8	EC Mornhinweg (1)	138 kV	September 17, 2014
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**FACILITY SCHEDULE NO. 3**  
**Amendment No 5**

1. **Name:** Henne Substation
2. **Facility Location:** Henne Substation is located at 7335 N. IH 35, New Braunfels, Comal County, Texas 78130.
3. **Points of Interconnection:** There are four (4) Points of Interconnection in Henne Substation generally described as:
  - where the 138 kV operating bus #1 terminal connector bolts to the four hole pad on switch 5869.
  - where the 138 kV transfer bus terminal connector bolts to the four hole pad on switch 5873.
  - where the 138 kV operating bus #2 terminal connector bolts to the four hole pad on switch 4446.
  - where the 138 kV transfer bus terminal connector bolts to the four hole pad on switch 4443.
4. **Transformation Services Provided by LCRA TSC:** No
5. **Metering Services Provided by LCRA TSC:** Yes
6. **Delivery Voltage:** 138 kV
7. **Metered Voltage and Location:** The metering voltage is 12.5 kV and 138 kV. The metering current transformers are located inside T1 and inside circuit breaker 5870NB. The bus potential transformers are located on the 12.5 kV operating bus and 138 kV Operating Bus #1.
8. **One Line Diagram Attached:** Yes
9. **Description of Facilities Owned by Each Party:**

NBU owns:

Henne Substation including, but not limited to, the following items:

  - The 138 kV dead-end structure, foundations, insulators and jumpers in Operating Bus #1, bay #2
  - One (1) 138 kV circuit breaker 5870NB including foundation, jumpers and protective relay package
  - Six (6) 138 kV switches 4443, 4444, 4446, 5869, 5871 and 5873
  - One (1) circuit switcher CS4445 with associated bypass switch 4447
  - One (1) power transformer T1 with associated surge arresters
  - 138 kV transformer bus including insulators and jumpers
  - One (1) transformer bus tower including foundations, insulators and jumpers

- All distribution circuits including dead end insulators that attach to the dead end structure, conductors, and hardware
- All distribution circuit breakers including jumpers, protective relay packages and foundations
- All distribution and total bays including A-frames, trusses, insulators, disconnect switches, bus tie switches, surge arresters, 12.5 kV operating and transfer bus, bus potential transformer and associated cabling
- Underfrequency relay equipment
- Station Service
- Control house and battery
- Substation property, ground grid, gravel, fencing and other appurtenances

LCRA TSC owns:

- The 138 kV dead-end structures, foundations, insulators and jumpers in Operating Bus #2, bays # 2, #3, #5 and Operating Bus #1 bays #4 and #5
- 138 kV operating bus #1 including structures, insulators, foundations and jumpers
- Two (2) 138 kV bus differential and breaker failure relaying schemes
- One (1) 138 kV bus potential transformer PT1 with stand and foundation
- 138 kV operating bus #2 and transfer bus including structures, insulators, foundations and jumpers
- Five (5) 138 kV circuit breakers 5860, 5880, 5890, 5900 and 5910 including foundations, jumpers and protective relay packages
- Fifteen (15) 138 kV switches 5859, 5861, 5863, 5879, 5881, 5883, 5889, 5891, 5893, 5899, 5901, 5903, 5909, 5911 and 5913
- One (1) wave trap and line tuner WT3
- One (1) coupling capacitor CC3
- One (1) 138 kV bus potential transformer PT2
- One (1) power voltage transformer PVT1
- Four (4) 138 kV surge arresters SA1, SA2, SA8 and SA9 with stands and foundations
- Three (3) current transformers CT1, CT2 and CT3

- 10. Operational Responsibilities of Each Party:** Each Party will be responsible for the operation of the equipment it owns.
- 11. Maintenance Responsibilities of Each Party:** Each Party will be fully responsible for the maintenance of the equipment it owns.
- 12. Other Terms and Conditions:**
  - NBU and LCRA TSC are to share access to the substation by LCRA TSC locks in the gates and in the control house doors.
  - LCRA TSC will supply and provide tripping and close inhibit contacts from its 138 kV bus differential and breaker failure panel to NBU's circuit breaker 5870NB and circuit switcher CS4445 relaying panels.

- NBU will supply and provide breaker failure initiate contacts from its circuit breaker 5870NB and circuit switcher CS4445 relaying panels to LCRA TSC's 138 kV bus differential and breaker failure panel.
- NBU will supply and provide metering and relaying current transformers from circuit breaker 5870NB for use by LCRA TSC in LCRA TSC's metering and 138 kV bus differential relaying scheme.
- NBU will supply and allow LCRA TSC use of its 12.5 kV bus potential transformer PT-3 for LCRA TSC's metering.
- NBU will supply and allow LCRA TSC use of transformer T1 metering and relaying bushing current transformers for LCRA TSC's metering and 138 kV bus differential relaying scheme.
- LCRA TSC and NBU shall design, provide, and coordinate their respective protection system equipment so that adjacent zones of protection overlap, in accordance with ERCOT Nodal Operating Guides.
- NBU will provide LCRA TSC access to 125 VDC and 120 VAC power. Circuits must have over current protection devices (OCPD) sized according to NEC standards. Panel boards containing the OCPD may belong to either NBU (if space is available) or LCRA TSC.
- NBU will provide LCRA TSC with floor space (as available and as necessary) in NBU's control house for the installation of LCRA TSC required control, communications and SCADA equipment.



# HENNE ONE-LINE DIAGRAM

Amendment No 5

