



***Facility Study  
For  
Generation Interconnection  
Request  
GEN-2007-038***

***SPP Tariff Studies***

***(GEN-2007-038)***

**May 2010**

## **Summary**

Sunflower Electric Power Corporation (SUNC) performed the following Study at the request of the Southwest Power Pool (SPP) for Generation Interconnection request Gen-2007-038. The request for interconnection was placed with SPP in accordance SPP's Open Access Transmission Tariff, which covers new generation interconnections on SPP's transmission system.

Pursuant to the tariff, Sunflower Electric Power Corporation was asked to perform a detailed Facility Study of the generation interconnection request to satisfy the Facility Study Agreement executed by the requesting customer and SPP.

### **Interconnection Customer Interconnection Facilities**

The Interconnection Customer will be responsible for the 345kV transmission line from the point of interconnection to its 345/34.5kV substation that will contain its 345/34.5kV transformer(s) and wind turbine collector feeders. In addition, the Customer will be required to maintain a +/- 95% power factor (leading lagging) at the point of interconnection (SUNC Spearville 345kV substation).

### **Transmission Owner Interconnection Facilities and Non Shared Network Upgrades**

Per the following Facility Study, the Interconnection Customer is responsible for \$3,663,731 for both Transmission Owner Interconnection Facilities and non shared Network Upgrades.

### **Shared Network Upgrades**

The GEN-2007-038 Interconnection Customer is included in the 1<sup>st</sup> Cluster Study approved in FERC Docket #ER09-262. The Interconnection Customer's shared upgrade costs are \$25,718,988. This cost is also subject to change for restudies conducted by the Transmission Provider in response to the higher queued customers or other customers in the 1<sup>st</sup> Cluster that withdraw their interconnection request or suspend, terminate, or request unexecuted filings of their LGIAs.

## 1. Introduction

<OMITTED TEXT> (Customer) has requested a Facility Study under the Southwest Power Pool Open Access Transmission Tariff (OATT) for interconnecting a 200 MW wind powered generation facility in Ford County, Kansas to the transmission system of Sunflower Electric Power Corporation (SUNC). The wind powered generation facility studied was proposed to comprise of eighty (80) Clipper 2.5 MW wind turbines. The wind powered generation facility will interconnect into the 345kV bus at the Spearville substation.

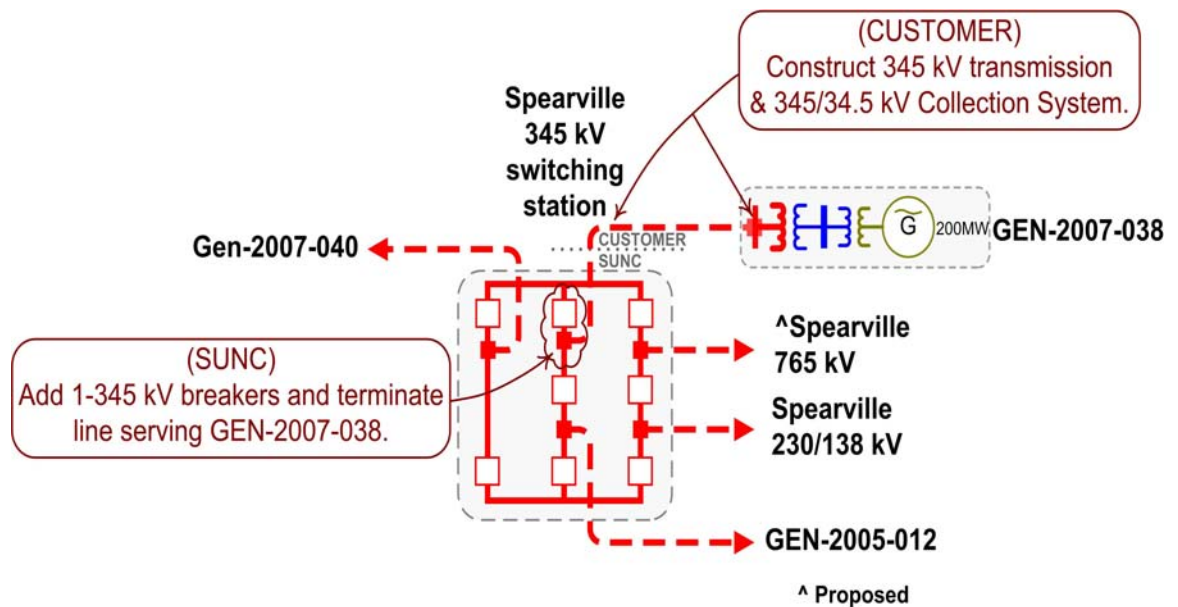
## 2. Interconnection Facilities and Non Shared Network Upgrades

All required non-shared interconnection facilities are tabulated in Table 1 and the one-line drawing is shown in Figure 1.

2.1. **Spearville 345kV Substation** - The Customer will be interconnecting into the 345kV bus at the Spearville substation. Two new 345kV circuit breakers and new line terminal to the wind farm will be added.

**Table 1. Required Interconnection Facilities and Non Shared Network Upgrades**

| <b>Project</b> | <b>Description</b>  | <b>Estimated Cost</b> |
|----------------|---|-----------------------|
| 1              | Add two (2) 345kV circuit breaker and line terminal to the Spearville 345kV substation. | \$3,663,731           |
|                | <b>Total:</b>   | <b>\$3,663,731</b>    |



**Figure 1. Interconnection Configuration for GEN-2007-038**

**2.2. Customer Facilities** – The Customer will be responsible for its Generating Facility and its 345/34.5kV substation that will contain its 345/34.5kV transformer(s) and wind turbine collector feeders. In addition, the Customer will be required to install the following equipment in its facilities.

**2.2.1. Reactive Power Equipment** – Per the Impact Study, the Interconnection Customer may be required to install capacitor banks in addition to the studied General Electric wind turbines to maintain this power factor requirement.

### **3. Conclusion**

[Omitted Text] has requested interconnection at the Spearville 345kV bus for a 200MW wind generating facility. The Interconnection Customer’s non shared network upgrades and interconnection facilities are estimated at \$3,663,731. The Interconnection Customer’s shared network upgrades are estimated at \$25,718,988.