



***Facility Study  
For  
Generation Interconnection  
Request  
GEN-2010-013***

***SPP Tariff Studies***

***(GEN-2010-013)***

***February 2011***

## **SPP Summary**

Westar Energy (Westar) performed a detailed Facility Study at the request of Southwest Power Pool (SPP) for Generation Interconnection request GEN-2010-013. The interconnection of the 50.4 MW wind energy facility located in Elk County, Kansas is in the control area of the Kansas Gas and Electric Company (KGE) transmission network. The request for interconnection was placed with SPP in accordance with SPP's Open Access Transmission Tariff, which covers new generation interconnections on SPP's transmission system.

The requested in-service date of the generating facility is December 15, 2011. It is not possible for Westar Energy to have the required facilities in service by the requested in-service date under any option of the Standardized Large Generator Interconnection Agreement.

## **Interconnection Customer Interconnection Facilities**

The Interconnection Customer will be responsible for the 345 kV transmission line from the Generation Facility to the Point of Interconnection (POI), an existing KGE 345 kV switching station on the Neosho – Latham 345 kV line near Wichita, KS. In addition, the customer will be responsible for reactive power compensation equipment to maintain 95% lagging (providing vars) and 95% leading (absorbing vars) power factor at the point of interconnection.

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

Per the following Facility Study, the Interconnection Customer is responsible for **\$1,692,000** of Transmission Owner Interconnection Facilities and non-shared network upgrades.

## **Shared Network Upgrades**

The interconnection customer was studied within the DISIS-2010-001 Impact Study. At this time, the Interconnection Customer is allocated **\$0** of the costs for shared network upgrades.

If higher queued interconnection customers withdraw from the queue, suspend or terminate their LGIA, restudies will have to be conducted to determine the Interconnection Customers' allocation of shared network upgrades. All studies have been conducted on the basis of higher queued interconnection requests and the upgrades associated with those higher queued interconnection requests being placed in service.



**Generation Interconnection Facilities  
Study**

**For**

**Generation Interconnection Request  
GEN-2010-013**

**December 20, 2010**

## **Introduction**

This report summarizes the results of a Generation Interconnection Facilities Study performed for the Southwest Power Pool (SPP) by Westar Energy to evaluate a generation interconnection request by the interconnection customer for 50.4 MW of wind-powered generation in Elk County, Kansas, to the transmission system of Kansas Gas and Electric Company (KGE). The proposed interconnection is on the KGE transmission system on the Neosho – Latham 345 kV line east of Wichita. Prior to this were completed both a Feasibility Study and a System Impact Study. The requested in-service date of the generating facility is December 15, 2011. It is not possible for Westar Energy to have the required facilities in service by the requested in-service date under any option of the Standardized Large Generator Interconnection Agreement.

## **Project Location and Existing Facilities**

The project is located in Elk County in south central Kansas. The interconnection will be at an existing 345 kV substation on the Latham – Neosho 345 kV line. The substation will connect to Customer facilities at 345 kV. Figure 1 shows the Regional Transmission Facilities and Figure 2 shows the transmission facilities in the local area as well as the service areas of other utilities at the point of interconnection. The proposed project is not within the Westar Energy service area.

## **Interconnection Facilities**

Interconnection to the KGE transmission system will be on an existing 345 kV switching station, on the Latham – Neosho 345 kV transmission line identified in previous study. One set of metering is required on generation

### **345 kV Interconnection Revenue Metering**

The estimated cost is for three (3) 345 kV VTs, three (3) 345 kV CTs, and revenue interconnection metering plus all associated site, yard and conduit work.

**\$ 398,000**

### **345 kV Ring Bus Substation (no metering or customer equipment included)**

The estimated cost is for one (1) 345 kV breakers, two (2) 345 kV switches, one (1) 345 kV motor operated switches, new redundant primary relaying, relaying setting changes and trap tuning at Latham and Neosho, one (1) 345 kV full tension dead-end structures, and all associated site, yard and conduit work. This estimate includes all equipment inside the substation fence up to the Point of Change of Ownership, excluding metering.

**\$1,294,000**

**\$1,294,000 345 kV Ring-bus Substation Stand Alone Network Upgrades**

**\$ 398,000 345 kV Interconnection Revenue Metering**

**\$1,692,000**

This estimate is accurate to +/- twenty (20) percent, based on current prices, in accordance with Attachment A of Appendix 4 of the Interconnection Facilities Study Agreement. However, recent cost fluctuations in materials are very significant and the accuracy of this estimate at the time of actual construction cannot be assured.

The following approximate time lines for the project are based on WR's engineering time, average procurement time, and good weather during construction. The amount of time per task may change if consultants are hired to perform this work.

20 weeks	Engineering Time
28 weeks	Procurement Time
38 weeks	Construction Time
<b>86 weeks</b>	<b>Total</b>

The design and material ordering will only commence following execution of the Southwest Power Pool Standardized Large Generation Interconnection Agreement.

Westar Energy also maintains its own Facility Connection Requirements, which may be found at ([www.wr.com](http://www.wr.com)).

Figure 1 – Westar Energy Regional Transmission

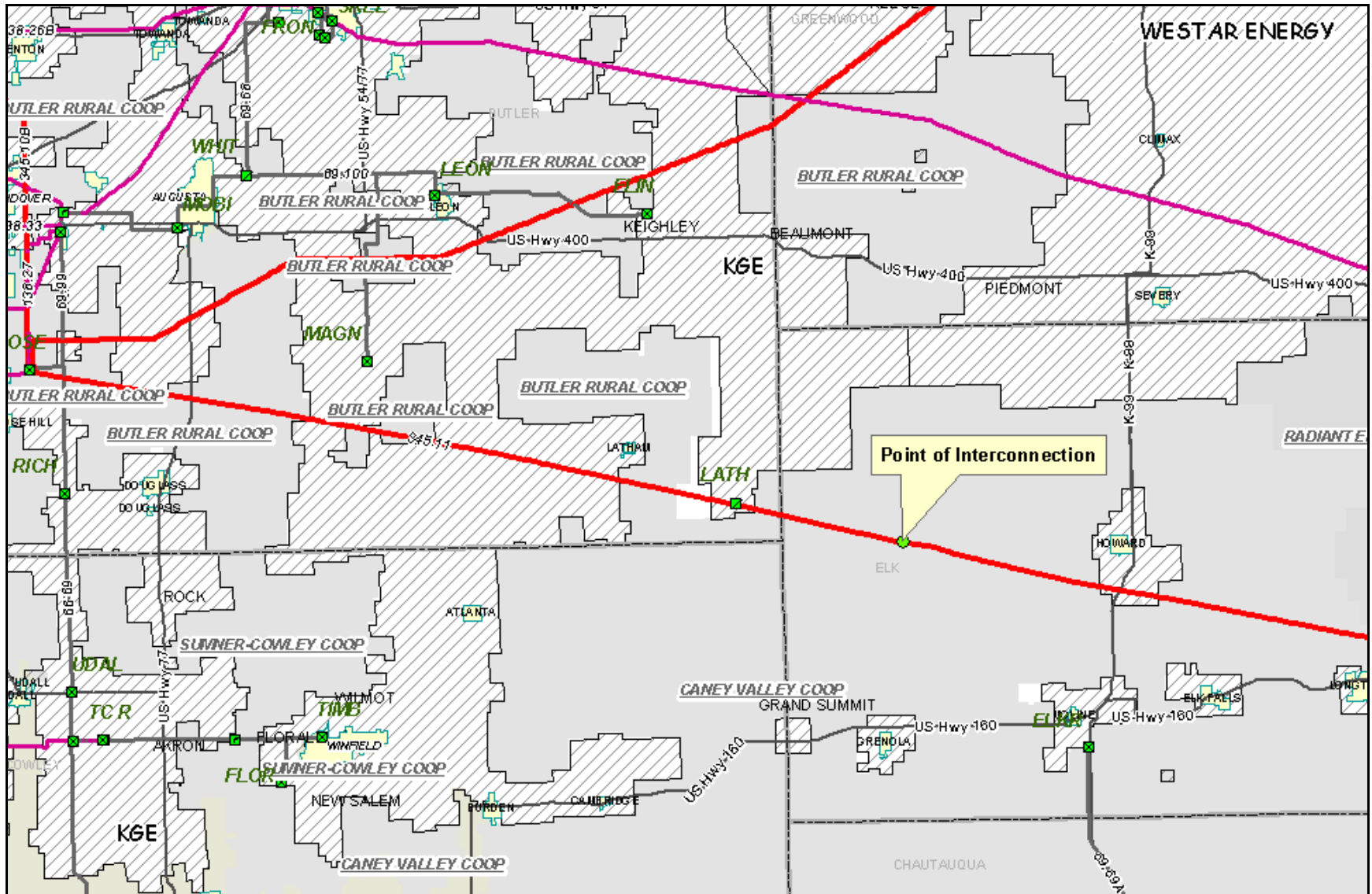
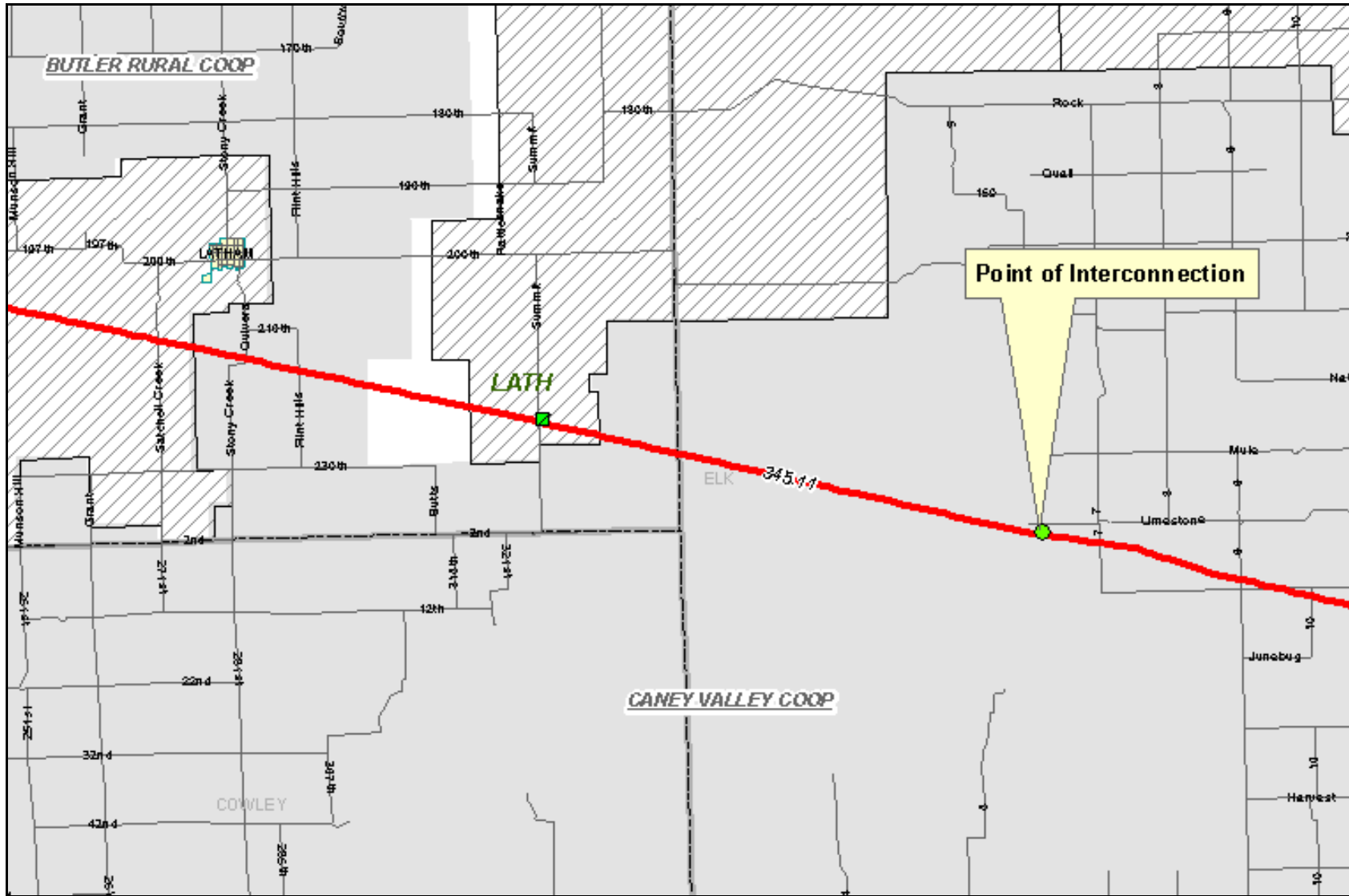


Figure 2 – Westar Energy Local Area Transmission



The proposed project is not within the Westar Energy service area.

**Figure 3 – Interconnection Substation One-Line**

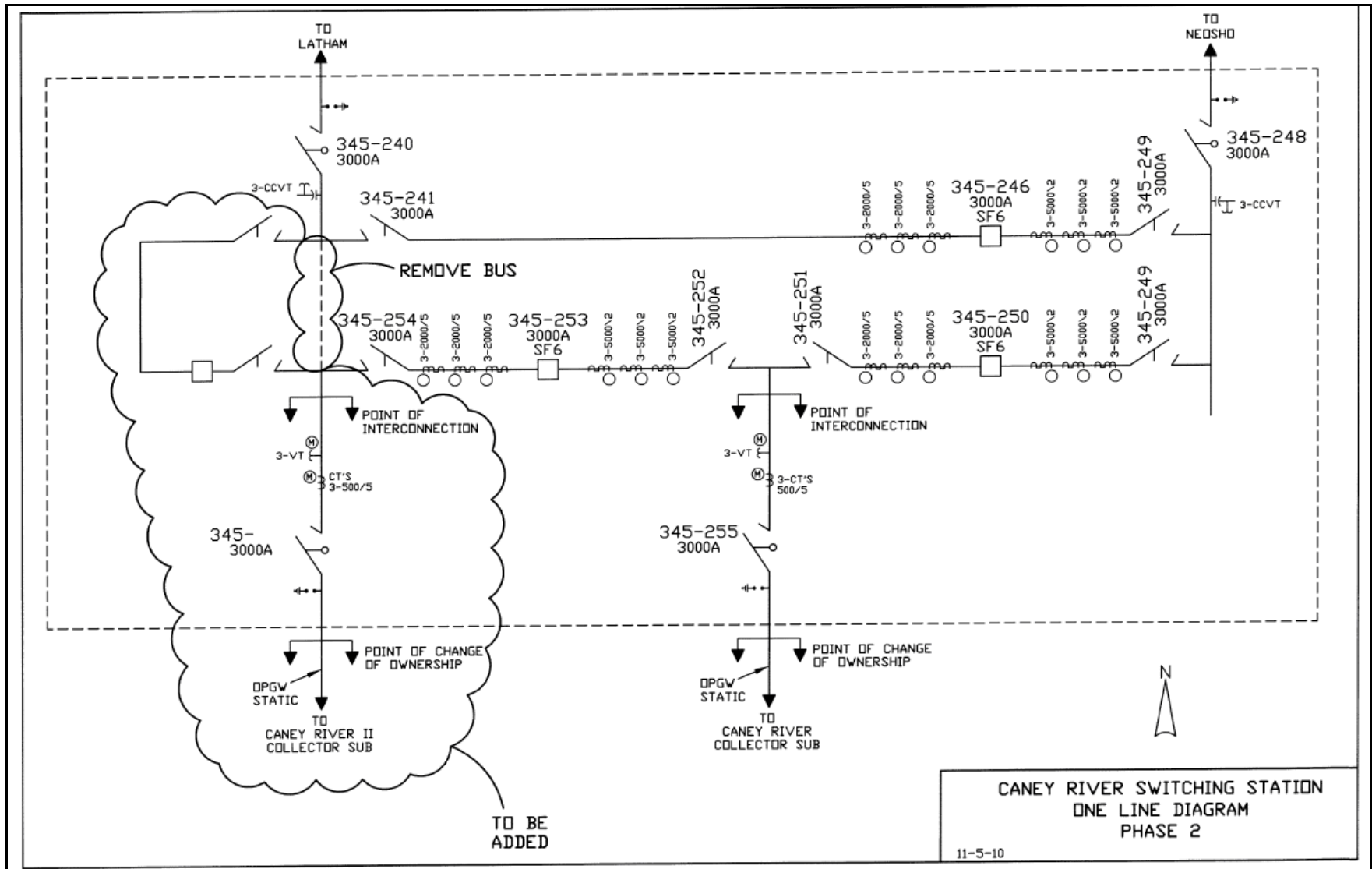




Figure 4 – Substation Layout

