



***Facility Study
For
Generation Interconnection
Request
GEN-2007-025***

SPP Tariff Studies

(#GEN-2007-025)

January 2010

Summary

Westar Energy performed the following Study at the request of the Southwest Power Pool (SPP) for Generation Interconnection request Gen-2007-025. 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, Westar Energy 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 at the point of interconnection (Westar 345kV substation).

Transmission Owner Interconnection Facilities and Non Shared Network Upgrades

Per the following Facility Study, the Interconnection Customer is responsible for \$950,520 of Transmission Owner Interconnection Facilities and \$9,417,558 of non shared Network Upgrades.

Shared Network Upgrades

The GEN-2007-025 Interconnection Customer is included in the 1st Cluster Study approved in FERC Docket #ER09-262. The Interconnection Customer's shared upgrade costs are \$0. This cost is subject to change depending upon restudies conducted by the Transmission Provider in response to higher queued customers or other customers in the 1st Cluster that withdraw their interconnection request or suspend, terminate, or request unexecuted filings of their LGIAs.



**Generation Interconnection Facilities
Study**

For

**Generation Interconnection Request
SPP-GEN-2007-025**

December 1, 2009

Introduction

This report summarizes the results of a Generation Interconnection Facilities Study performed for the Southwest Power Pool (SPP) by Westar Energy (WR) to evaluate a generation interconnection request by BP Wind Energy North America Inc for 300 MW of wind-powered generation in Barber County, Kansas, to the transmission system of Westar Energy, Inc. The proposed interconnection is on the WR transmission system on the Wichita – Woodring 345 kV line near Viola approximately 15 miles south 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 31, 2009. 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 Barber, Harper and Kingman Counties in south central Kansas. The interconnection will be effected at a new 345 kV ring-bus substation on the Wichita – Woodring 345 kV line near Viola. The substation will connect to Customer facilities at 345 kV. Customer will engineer, procure, construct, own, operate and maintain 45 miles of 345 kV transmission line extending to the project substation. 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 WR transmission system will be by way of a new 345 kV three position ring-bus switching station on the existing Wichita – Woodring 345 kV transmission line. The new substation terminal will look towards Customer's facilities. Construction of this new substation terminal requires of additional land adjacent to the existing transmission line right-of-way.

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.

\$ 396,521

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

The estimated cost is for three (3) 345 kV breakers, eight (8) 345 kV switches, two (2) 345 kV motor operated switches, six (6) 345 kV CCVTs, four (4) 345 kV wave traps, new redundant primary relaying, relaying setting changes and trap tuning at Wichita and Woodring, two (2) 345 kV full tension deadend 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, exclude metering.

\$8,942,558

345 kV Substation (Equipment on customer side of meter)

The estimated cost is for three (3) 345 kV arrester, one (1) 3000A switch, three (3) 345 kV arrester stand, one (1) 345 kV full tension deadend structures, and one (1) 3-phase bus support, plus foundations, grounding and rock associated with this part of the substation.

\$553,999

345 kV Transmission Line Work

The estimated cost is for two three-pole steel, turning structures to connect the existing Wichita – Woodring 345 kV transmission line into the interconnection substation plus associated foundations and labor.

\$475,000

The total cost estimate for Transmission Owner Interconnection Facilities (Interconnection Metering) and Stand Alone Network Upgrades (345 kV Ring-bus Substation and Transmission Line Work) is:

\$8,942,558 345 kV Ring-bus Substation Stand Alone Network Upgrades
\$ 553,999 345 kV Transmission Owner Interconnection Facility
\$ 396,521 345 kV Interconnection Revenue Metering
\$ 475,000 345 kV Transmission Line Work
\$10,368,078

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
86 weeks Total

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).

Figure 1 – Westar Energy Regional Transmission

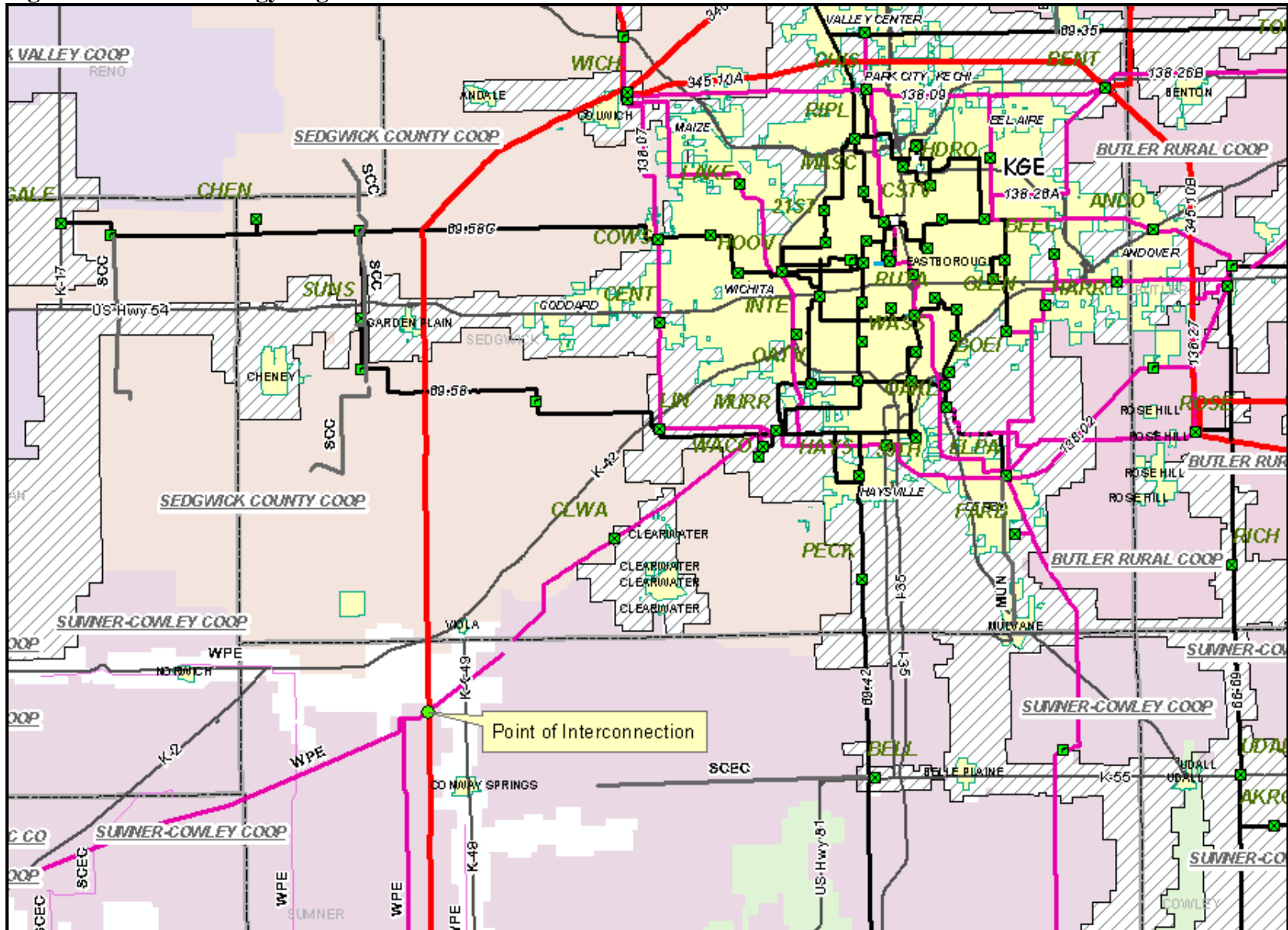
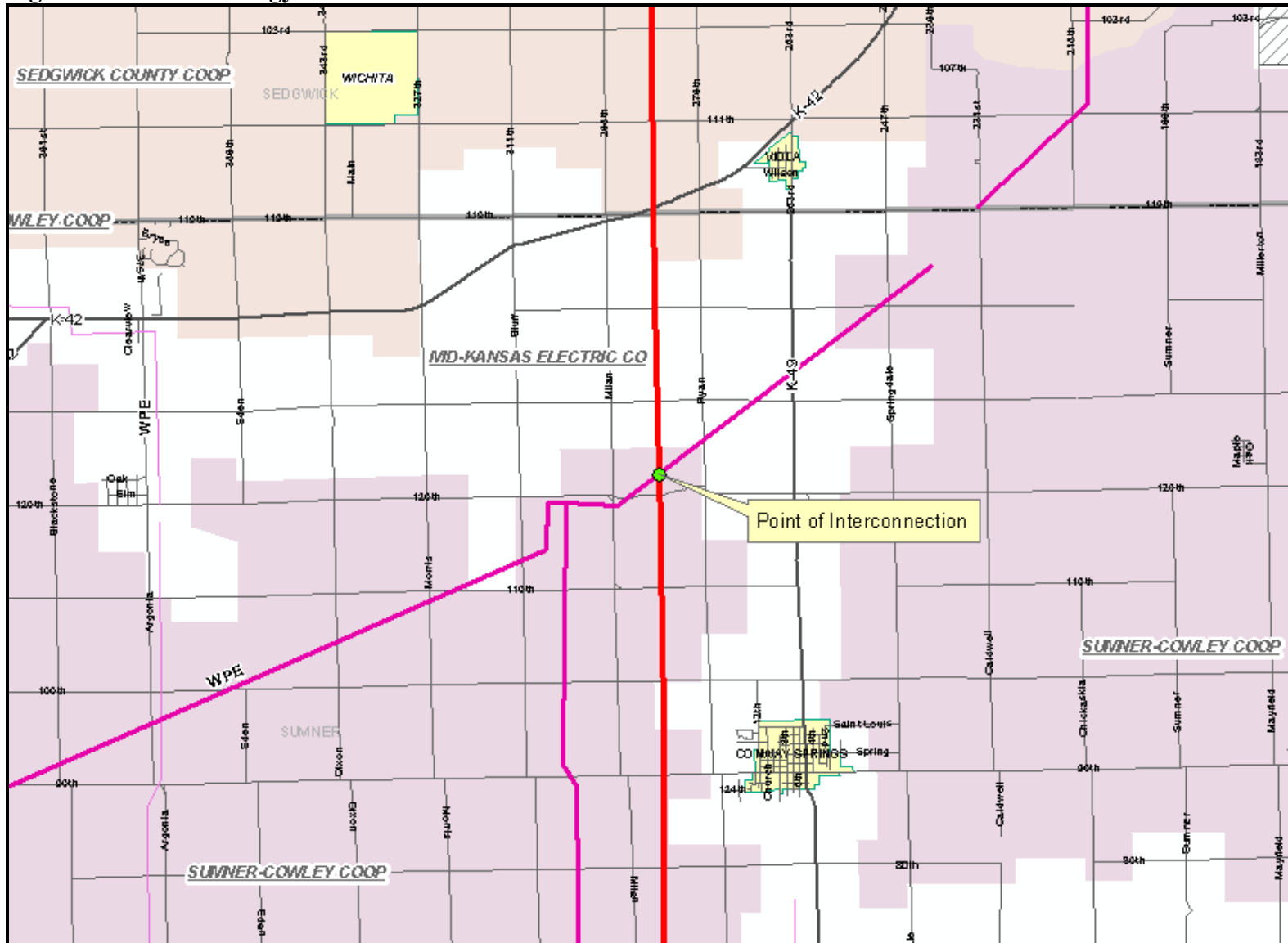


Figure 2 – Westar Energy Local Area Transmission



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

Figure 3 – Interconnection Substation One-Line Phase I

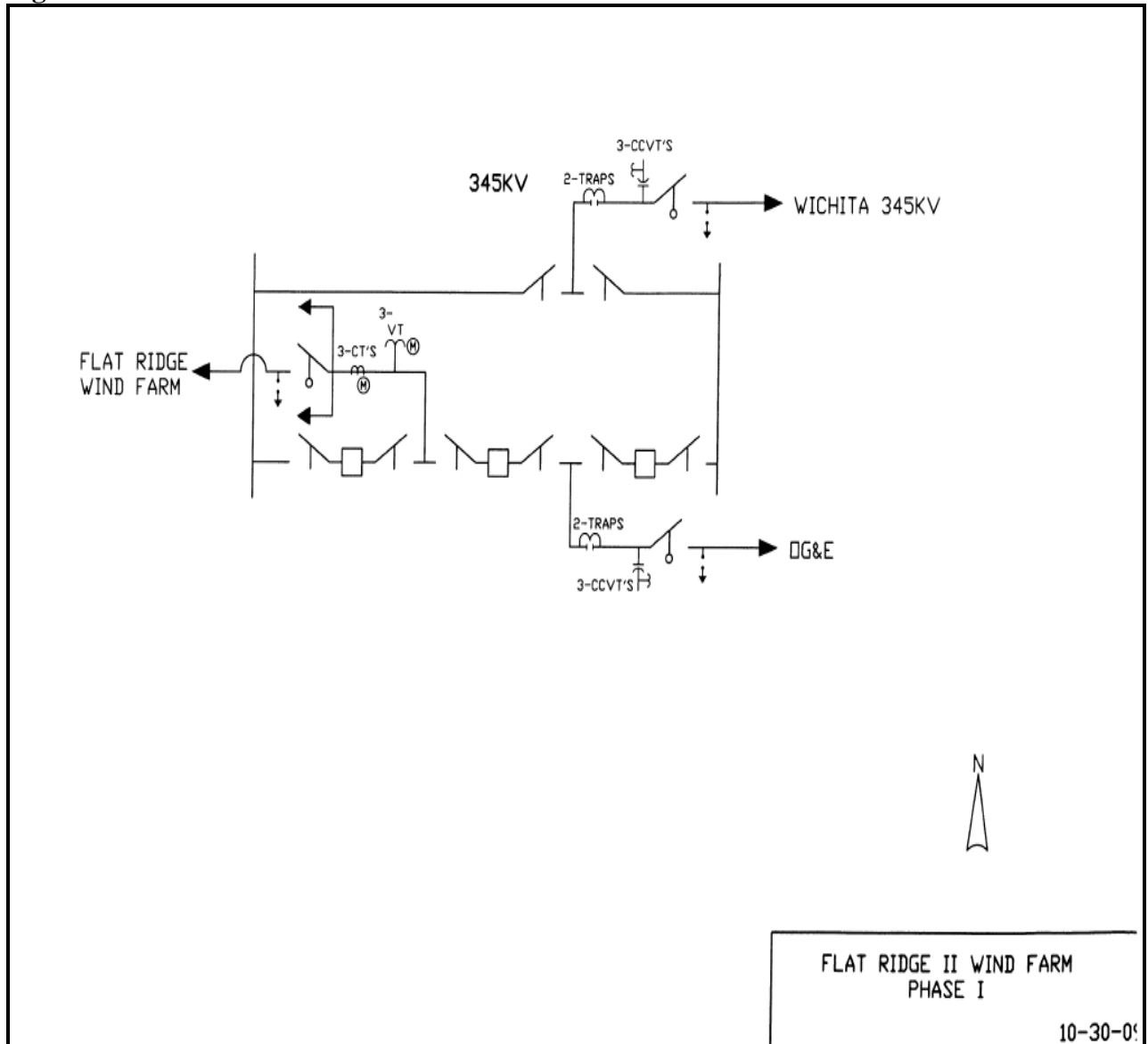


Figure 4 – Substation Layout Phase I

