



***Facility Study  
For  
Generation Interconnection  
Request  
GEN-2010-003***

***SPP Generation  
Interconnection***

***(#GEN-2010-003)***

**April 2011**

## **Summary**

Westar Energy (Westar) performed a detailed Facility Study at the request of Southwest Power Pool (SPP) for Generation Interconnection request GEN-2010-003. The interconnection of the 100.8 MW wind energy facility located in Coffey 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 31, 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 Generator Interconnection Agreement.

## **Interconnection Customer Interconnection Facilities**

The Interconnection Customer will be responsible for the 345 kV transmission line from the Wind turbine Collector Substation to the Point of Interconnection (POI), a new KGE 345 kV ring bus substation on the Wolf Creek – LaCygne 345 kV line near Waverly, 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. Any capacitor banks installed by the Customer shall not cause voltage or other distortion on the transmission system in accordance with Article 9.7.6 of the Standard GIA, Power Quality.

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

Per the following Facility Study, the Interconnection Customer is responsible for **\$26,000** of Transmission Owner Interconnection Facilities and non-shared network upgrades.

## **Shared Network Upgrades**

The interconnection customer was studied within the DISIS-2010-001-1 Impact Restudy. 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 GIA, 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.

## **Other System Network Upgrades**

Kansas City Power & Light (KCPL) has been contacted to determine any impacts to LaCygne Power Station or its substation due to the interconnection of the Customer's generation. If any impacts are determined by KCPL, the Interconnection Customer will be notified and those impacts will be included in the GIA.



**Generation Interconnection Facilities  
Study**

**For**

**Generation Interconnection Request  
SPP-GEN-2010-003**

**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 phase II interconnection request by the customer for 100 MW of wind-powered generation in Coffey County, Kansas, to the transmission system of Kansas Gas and Electric Company (KGE). The proposed interconnection is on the KGE transmission system on the Wolf Creek – LaCygne 345 kV line near Waverly, Kansas. 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, 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 Coffey County in east central Kansas. The interconnection will be at a 345 kV ring-bus substation on the Wolf Creek – LaCygne 345 kV line near Waverly, Kansas, identified from a previous study. 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**

GEN-2010-003 will be interconnected into the GEN-2008-098 Interconnection Customer Interconnection Facilities. No additional infrastructure will be required at the existing interconnection substation identified for GEN-2008-098. System protection setting changes will be required.

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

The project cost for GEN-2010-003 for protection relaying settings changes and trap tuning at Wolf Creek – LaCygne 345 kV.

**\$26,000**

The total cost estimate for Stand Alone Network Upgrade (345 kV Ring-bus Substation) is:

### **\$26,000 345 kV Ring-bus Substation Stand Alone Network Upgrades**

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 settings cannot be assured.

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

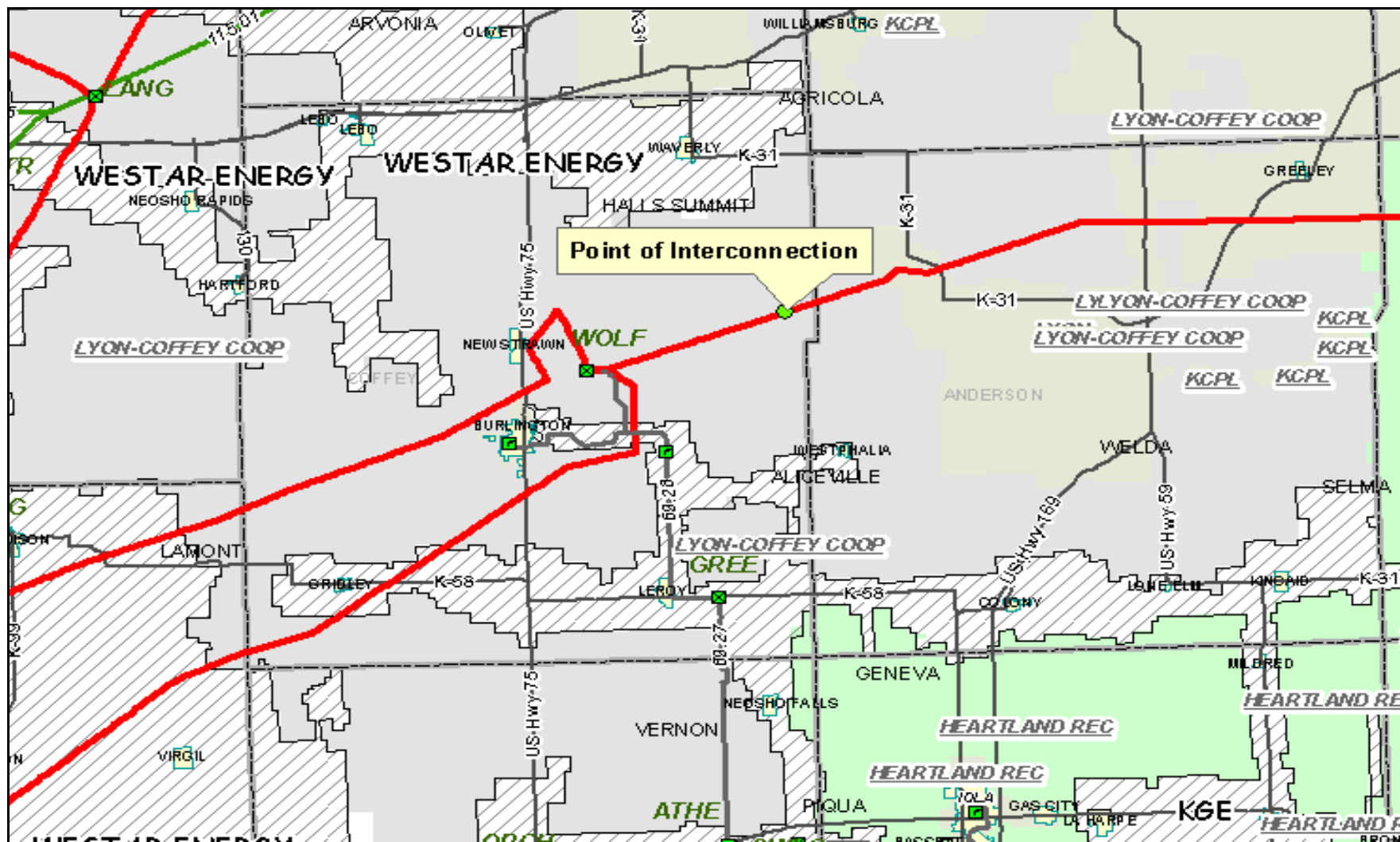
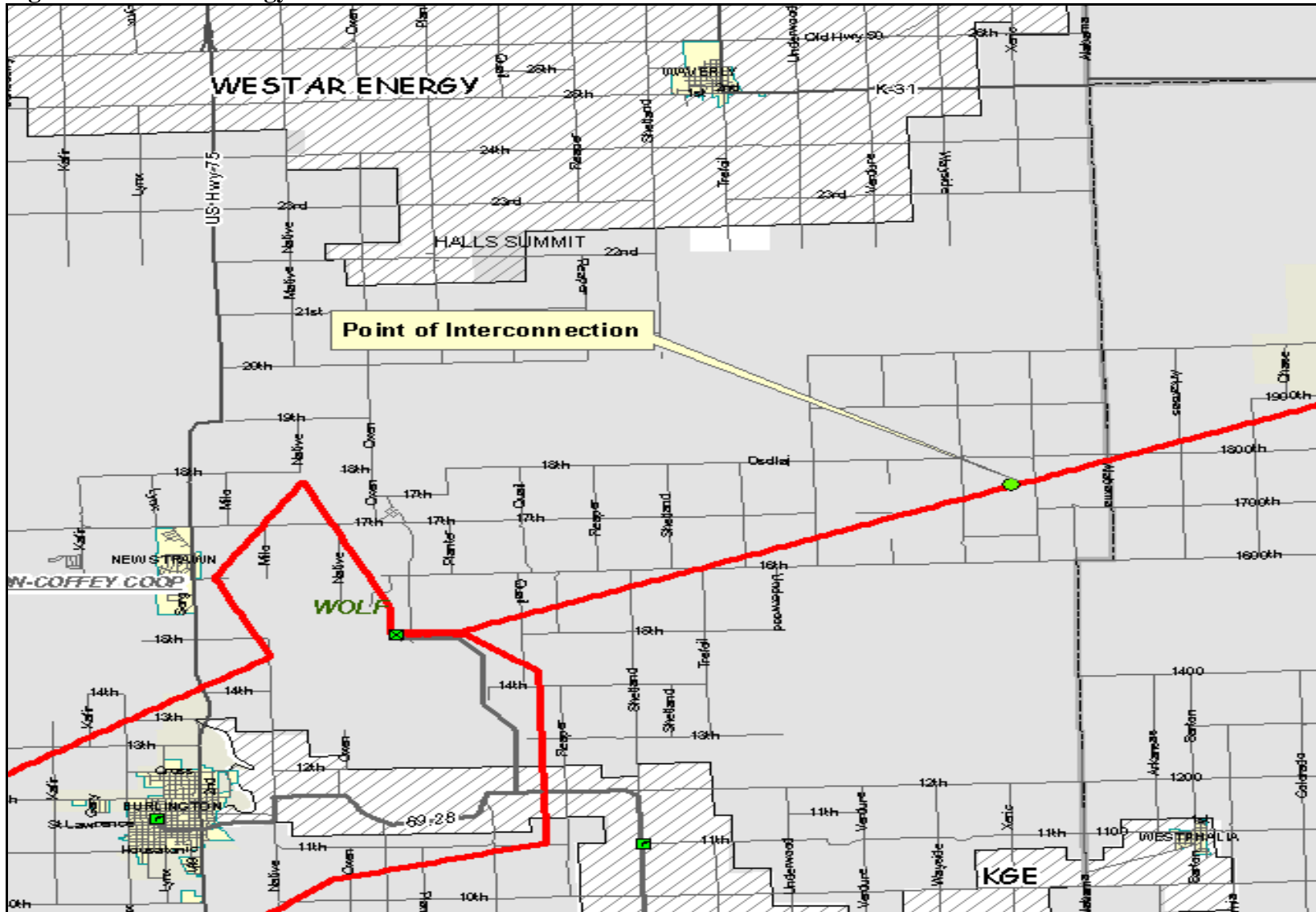


Figure 2 – Westar Energy Local Area Transmission



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

Figure 3 – Interconnection Substation One-Line

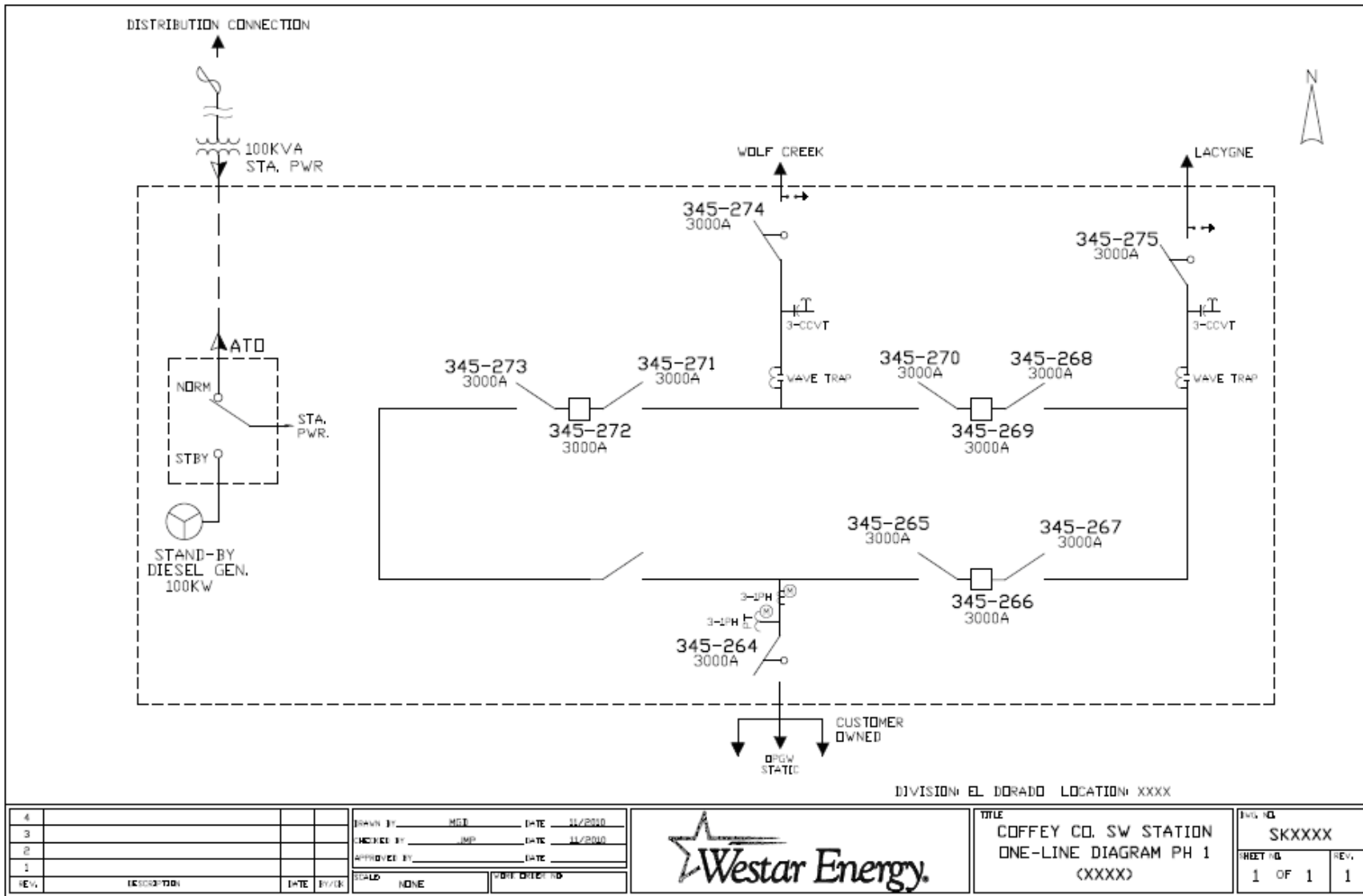
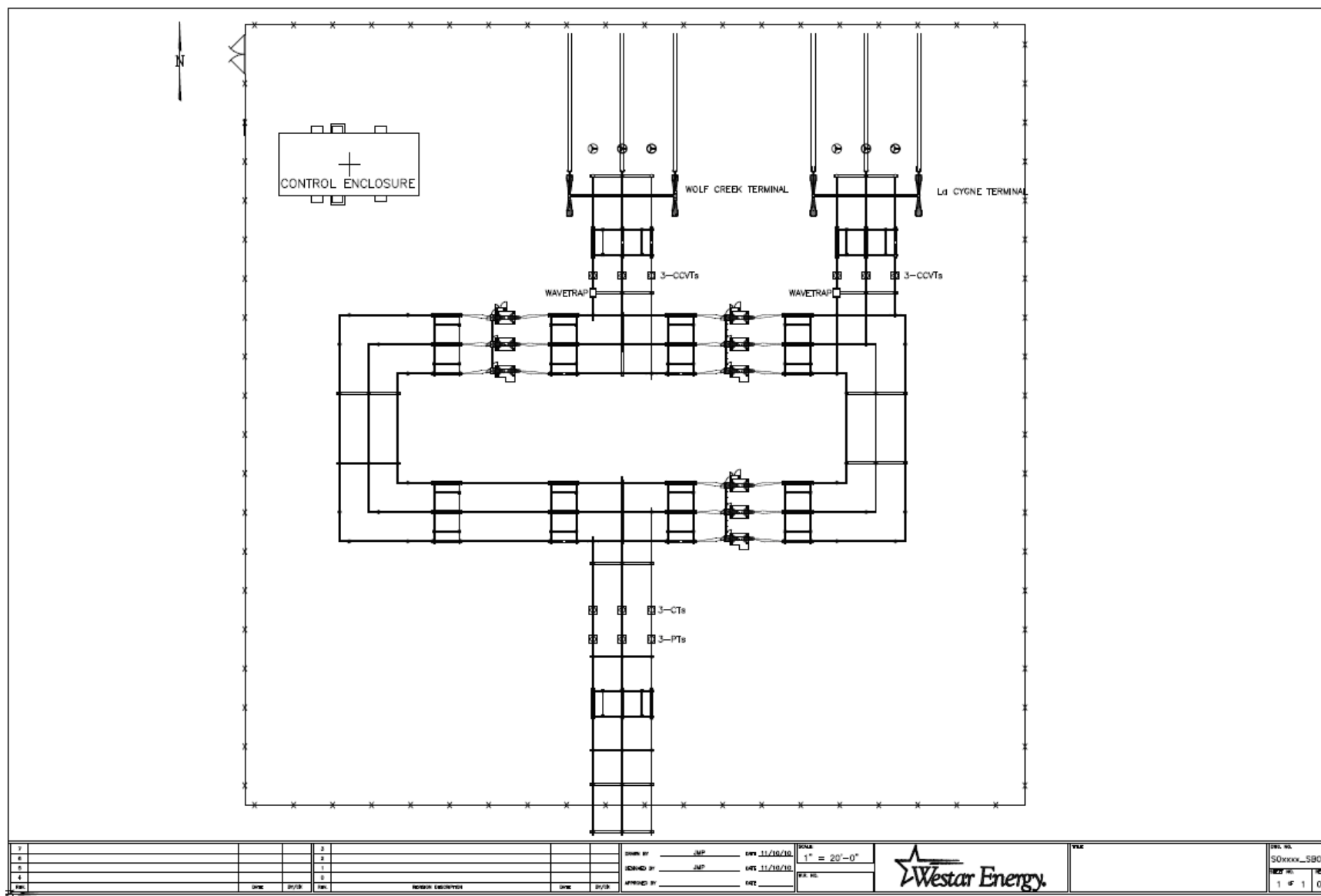



Figure 4 – Substation Layout



7			2			DESIGNED BY	JMP	DATE	11/10/10	SCALE	1" = 20'-0"		FIG. NO.	50xxxx_S801
6			2		DESIGNED BY	JMP	DATE	11/10/10	SCALE		FIG. NO.		1 of 1	
5			1		APPROVED BY		DATE		FIG. NO.		1 of 1		0	
4			0											
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