



***Feasibility Study
For
Generation Interconnection
Request
GEN-2004-017***

***SPP Tariff Studies
(#GEN-2004-017)***

May 9, 2005

Executive Summary

<OMITTED TEXT> (Customer) has requested a Feasibility Study for the purpose of interconnecting 250MW of generation within the service territory of Empire District Electric Company (EDE) in Cherokee County Kansas. The proposed point of interconnection is in the existing Riverton 161kV station located 9 miles west of Joplin, Missouri. This 161kV substation is owned by EDE. The proposed in-service date is January 1, 2007 for a 170MW turbine and June 1, 2012 for an 80MW unit.

Power flow analysis has indicated that for the powerflow cases studied, it is possible to interconnect the 250MW of generation with transmission system reinforcements within the local transmission system. The requirements for interconnection consist of adding new 161kV substation with three (3) 161kV breakers to the existing Riverton Station. These 161kV additions shall be constructed and maintained by EDE. This expansion would provide terminals for the 2 new units and 1 auxiliary transformer.

The total cost for adding the new 161kV substation to the Riverton Station, the interconnection facility, is estimated at \$8,600,000. Other Network Upgrades that are required for Network Integrated Transmission Service are listed in System Impact Study SPP-203-253-1 and System Facilities Study SPP-2003-253-2 dated April 13, 2004 and October 8, 2004 respectively including Third Party Facilities. These costs do not include the Customer's Direct Assignment Facilities.

Given the engineering and construction cost estimates for the new 161kV substation to the Riverton Station total \$8,600,000, the total estimated engineering and construction cost of Network Upgrades to accommodate these new Network Resources is \$17,880,000. These costs do not include the Customer's Direct Assignment Facilities.

Introduction

<OMITTED TEXT> (Customer) has requested a Feasibility Study for the purpose of interconnecting 250MW of generation within the service territory of EDE in Cherokee County Kansas. The proposed point of interconnection is at the existing Riverton Station. The Riverton Station 161kV facilities are owned by EDE. The proposed in-service date is January 1, 2007 for a 170MW turbine and June 1, 2012 for an 80MW unit.

Interconnection Facilities

The primary objective of this study is to identify the system problems associated with connecting the plant to the area transmission system and estimated costs of system modifications needed to alleviate the system problems. The Feasibility and other subsequent Interconnection Studies are designed to identify attachment facilities, Network Upgrades and other direct assignment facilities needed to accept power into the grid at the interconnection receipt point.

The requirements for interconnection consist of adding a new 161kV substation to the existing Riverton Station. These 161kV additions shall be constructed and maintained by EDE. All necessary right-of-way for the new facilities at the Riverton Station has been obtained by the Customer.

The total cost for EDE to add new 161kV substation for the Riverton Station, the interconnection facility, is estimated at \$8,600,000. Other Network Upgrades in the EDE and other systems are required that are listed in System Impact Study SPP-203-253-1 and System Facilities Study SPP-2003-253-2 dated April 13, 2004 and October 8, 2004 respectively including Third Party Facilities. Therefore, the total estimated engineering and construction cost to the Customer is \$17,880,000.

These estimates will be refined during the development of the impact study based on the final designs. This cost does not include the Customer's Direct Assignment facilities and these cost estimates should be determined by the Customer. **These costs do not include any cost that might be associated with short circuit study results or dynamic stability study results.** These costs will be determined when and if a System Impact Study is conducted.

Powerflow Analysis

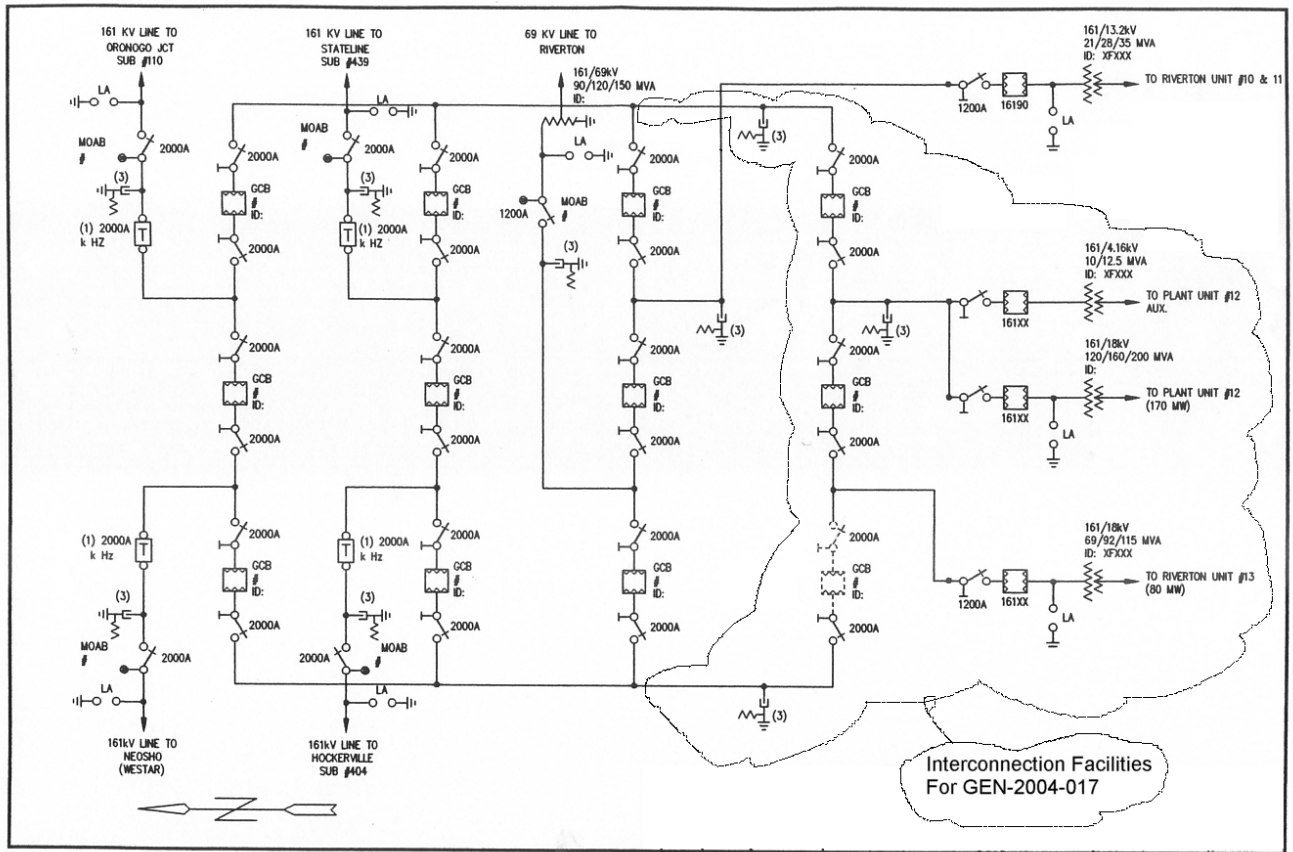
Additional powerflow analyses were not conducted for the facility as the new generating facility was not designated as an Energy Resource. The facility was designated only as a Network Resource and other studies including System Impact Study SPP-203-253-1 and System Facilities Study SPP-2003-253-2 dated April 13, 2004 and October 8, 2004 respectively are applicable.

Conclusion

The minimum cost of interconnecting the Customer project is estimated at \$8,600,000 for EDE's interconnection facilities excluding other transmission upgrades. Including all Network Upgrades by the affected Transmission Owners, the total estimated engineering and construction cost is \$17,880,000. At this time, the cost estimates for other Direct Assignment facilities are estimated as \$ 1,300,000.

These interconnection costs do not include any cost that may be associated with short circuit or transient stability analysis. These studies will be performed if the Customer signs a System Impact Study Agreement.

These estimated engineering and construction costs include those associated with the deliverability of the energy to final customers as defined in System Impact Study SPP-203-253-1 and System Facilities Study SPP-2003-253-2 available on Southwest Power Pool's OASIS.



**Figure 1: Proposed Interconnection
(Final substation design to be determined)**

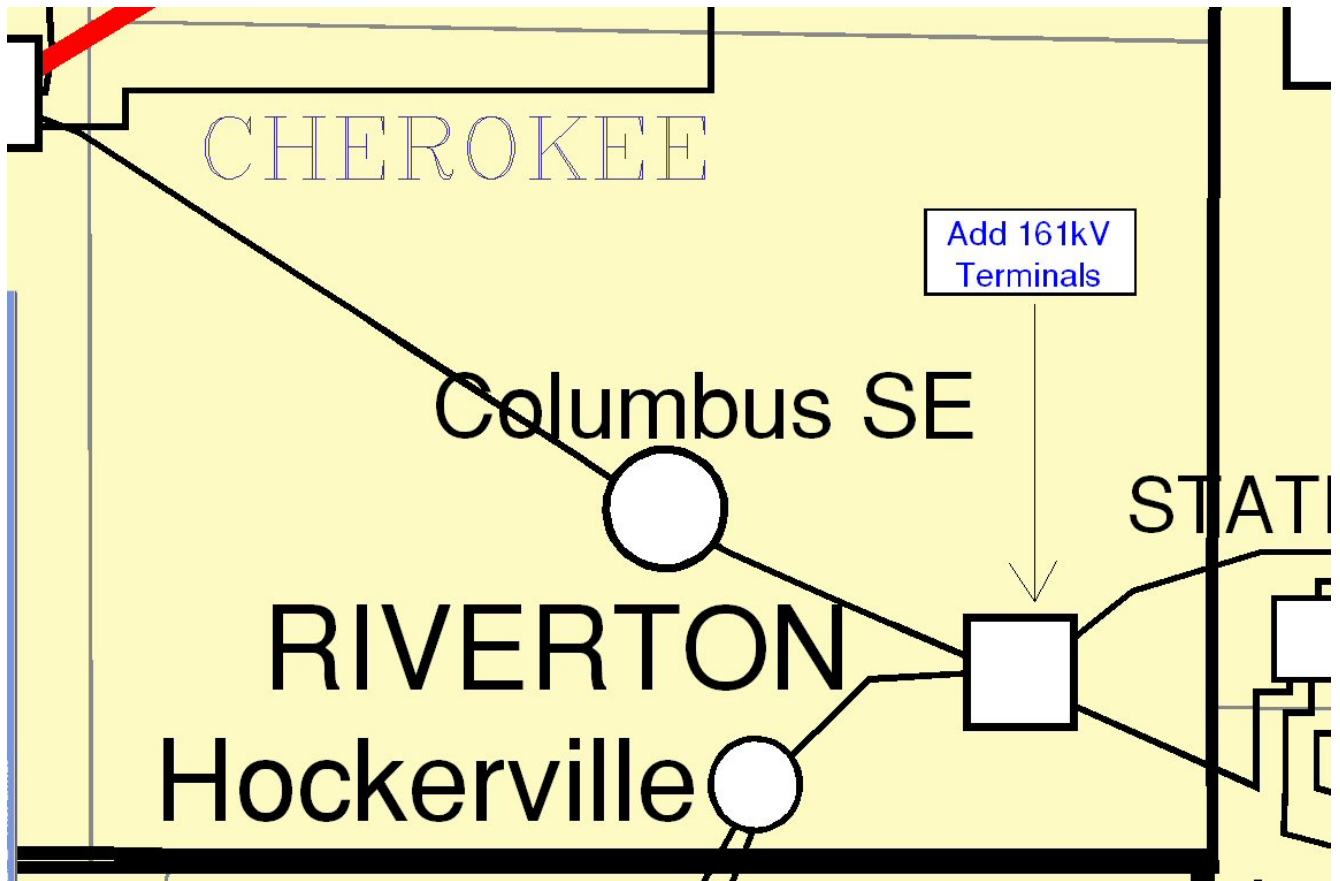


Figure 2: Map Of The Surrounding Area