



***Facility Study for Generation
Interconnection Request
GEN-2004-017***

SPP Tariff Studies

#GEN-2004-017

January, 2006

Summary

Empire District Electric performed the following Study at the request of the Southwest Power Pool (SPP) for Generation Interconnection request GEN-2004-017, a gas fired power plant in Cherokee County, Kansas. 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, Empire District Electric 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.



Generation Interconnection
Facility Study

For

GEN-2004-017

Empire District Electric Company

December 2005

Introduction

The Southwest Power Pool (SPP) has requested a Facility Study for a 161 kV interconnection for a 250 MW generator at the Empire District Electric Company (EDE) Riverton Plant at Riverton Kansas. This generator will be interconnected to a new Riverton Plant substation (Riverton Rams Sub #452) that will be a 6 breaker ring bus configuration. The new Riverton substation is being constructed for improved system reliability. The existing Riverton Plant Substation #167 is a single-line single-breaker configuration and is located adjacent to the Spring River at an elevation lower than flood stage.

The purpose of this study is to identify the facilities and their costs that are needed to interconnect the 250 MW of generation into the SPP transmission system. This study is being done in conjunction with SPP Impact Study for Generation Interconnection Request GEN-2004-017.

Facility Details

The 250 MW of generation will be interconnected to the SPP transmission system at Riverton Rams substation via 0.5 miles of 161 kV transmission line. There are minimal costs at the Riverton Rams sub for this interconnection. The terminal that the new generation will attach to is also used for interconnecting the existing Riverton generating units #10 and #11 into the transmission system. Therefore, both Riverton Units #10 and #11 and the new 250 MW of generation will terminate on the same terminal at Riverton Rams sub. A one-line of the facilities is shown in Figure 1.

Interconnection Costs

There are minimal costs associated with interconnecting the new 250 MW of generation at the Riverton Rams substation. The costs are labor needed for modifications to the relaying system and termination of the line. EDE estimates this cost to be \$20,000.

Short Circuit Fault Duty Evaluation

It is standard practice for EDE to recommend replacing a circuit breaker when the current through the breaker due to a fault exceeds 100% of its reclosing adjusted interrupting rating. The interrupting rating is determined by applying a de-rating factor to the nameplate rating due to reclosing.

The study the 250 MW generation interconnection indicated that the additional generation did not cause any breakers to exceed their interrupting capability.

Figure 1: Riverton #12 Generation Interconnection One-line

