



SPP

*Southwest
Power Pool*

System Impact Study

SPP-2007-026

For Transmission Service

Requested By:

***Empire District Electric
Company***

From KCPL to EDE

***For a Reserved Amount Of
100 MW***

From 10/01/2007

To 11/01/2007

SPP Transmission Planning

1. EXECUTIVE SUMMARY	3
2. INTRODUCTION	4
3. STUDY METHODOLOGY.....	5
A. DESCRIPTION	5
B. MODEL UPDATES	5
C. TRANSFER ANALYSIS	5
4. STUDY RESULTS	6
5. CONCLUSION.....	8

1. Executive Summary

Empire District Electric Company has requested a system impact study for monthly firm transmission service from KCPL to EDE. The period of the transaction is from 10/01/2007 to 11/01/2007. The request is for reservation 1335624 for the amount of 100 MW.

The 100 MW transaction from KCPL to EDE has an impact on the following flowgates with no AFC: FLCXFRFLCXFR and MUSCLAMUSRSS. To provide the AFC necessary for this transfer, the impact on these flowgates must be relieved.

After studying many scenarios using curtailment of reservations and generation redispatch, there are several feasible scenarios that will relieve the flowgates in question.

2. Introduction

Empire District Electric Company has requested a system impact study for transmission service from KCPL to EDE.

There are two constrained flowgates that require relief in order for this reservation to be accepted. The flowgates and the explanations are as follows:

- FLCXFRFLCXFR: Flint Creek 345/161 kV transformer for the loss of the second Flint Creek 345/161 kV transformer.
- MUSCLAMUSRSS: Muskogee to Clarksville 345 kV for the loss of Muskogee to Riverside 345 kV line

3. Study Methodology

A. Description

Southwest Power Pool used Managing and Utilizing System Transmission (MUST) to obtain possible unit pairings that would relieve the constraint. MUST calculates impacts on monitored facilities for all units within the Southwest Power Pool Footprint. The SPP ATC Calculator is used to determine response factors for the time period of the reservation.

B. Model Updates

The 2007 Southwest Power Pool model was used for the study. This model was updated to reflect the most current information available.

C. Transfer Analysis

Using the short-term calculator, the limiting constraints for the transfer are identified. The response factor of the transfer on each constraint is also determined.

The product of the transfer amount and the response factor is the impact of a transfer on a limiting flowgate that must be relieved. With multiple flowgates affected by a transfer, relief of the largest impact may also provide relief of smaller impacts.

Using Managing and Utilizing System Transmission (MUST), specific generator pairs are chosen to reflect the units available for redispatch. The quotient of the amount of impact that must be relieved and the generation sensitivity factor calculated by MUST is the amount of redispatch necessary to relieve the impact on the affected flowgate.

4. Study Results

After studying the impacts of request 1335624, two flowgates require relief. The flowgates and the associated amount of relief are as follows:

Table 1

Flowgates	Sensitivity (%)	Duration	Required Relief (MW)
FLCXFRFLCXFR	5.0	October 2007	5
MUSCLAMUSRSS	5.0	October 2007	5

Table 2 displays a list of generator pairs that are possible relief options for the flowgates in question.

Table 2

Source	Sink	FLCXFRFLCXFR Sensitivity (%)	MUSCLAMUSRSS Sensitivity (%)
Flint Creek (AEP)	NES (AEP)	42.0	-
Flint Creek (AEP)	TPS (AEP)	40.0	-
Flint Creek (AEP)	Weleetka (AEP)	40.0	-
Flint Creek (AEP)	SWS (AEP)	40.0	-
Matson (AEP)	NES (AEP)	34.0	-
Matson (AEP)	TPS (AEP)	34.0	-
OEC (AEP)	Fitzhugh (AEP)	-	36.0
OEC (AEP)	Kiowa (AEP)	-	36.0
OEC (AEP)	Welsh (AEP)	-	32.0
OEC (AEP)	Lonestar (AEP)	-	32.0
OEC (AEP)	Wilkes (AEP)	-	32.0
NES (AEP)	Fitzhugh (AEP)	-	29.0
NES (AEP)	Kiowa (AEP)	-	29.0
TPS (AEP)	Fitzhugh (AEP)	-	29.0
TPS (AEP)	Kiowa (AEP)	-	29.0
Stateline (EDE)	Montrose (KCPL)	6.3	5.9
Stateline (EDE)	LaCygne (KCPL)	6.2	4.0
Stateline (EDE)	Hawthorn (KCPL)	6.0	5.4
Stateline (EDE)	LEC (WR)	6.0	5.1
Stateline (EDE)	TEC (WR)	6.0	5.2
Stateline (EDE)	JEC (WR)	6.0	5.2

Table 3 displays the amount of redispatch capacity necessary for each generator pair.

Table 3

Source	Sink	FLCXFRFLCXFR (MW)	MUSCLAMUSRSS (MW)
Flint Creek (AEP)	NES (AEP)	12	-
Flint Creek (AEP)	TPS (AEP)	13	-
Flint Creek (AEP)	Weleetka (AEP)	13	-
Flint Creek (AEP)	SWS (AEP)	13	-
Matison (AEP)	NES (AEP)	15	-
Matison (AEP)	TPS (AEP)	15	-
OEC (AEP)	Fitzhugh (AEP)	-	14
OEC (AEP)	Kiowa (AEP)	-	14
OEC (AEP)	Welsh (AEP)	-	16
OEC (AEP)	Lonestar (AEP)	-	16
OEC (AEP)	Wilkes (AEP)	-	16
NES (AEP)	Fitzhugh (AEP)	-	17
NES (AEP)	Kiowa (AEP)	-	17
TPS (AEP)	Fitzhugh (AEP)	-	17
TPS (AEP)	Kiowa (AEP)	-	17
Stateline (EDE)	Montrose (KCPL)	79	85
Stateline (EDE)	LaCygne (KCPL)	81	125
Stateline (EDE)	Hawthorn (KCPL)	83	93
Stateline (EDE)	LEC (WR)	83	98
Stateline (EDE)	TEC (WR)	83	96
Stateline (EDE)	JEC (WR)	83	96

5. Conclusion

Reservation curtailment and generation redispatch options were studied in order to relieve the necessary constraints. The results of this study shows that the constraints on the flowgates in question could be relieved by executing one or more of the options described in the Study Results section of this document. Before the Transmission Provider accepts the reservations, proof of the necessary relief options must be presented to Southwest Power Pool. Noncompliance with this guideline will result in the refusal of the reservation.