



SPP *Southwest
Power Pool*

***System Impact Study
SPP-2015-010
For Transmission Service
Requested By:
MOWR***

***From DOGWOOD.MJMEUC to
MOWR_MOPEMPS***

***For a Reserved Amount Of
25 MW
For 10/1/2015 – 1/1/2016***

1. Executive Summary

MOWR has requested a system impact study for monthly firm transmission service from DOGWOOD.MJMEUC to MOWR_MOPEPMP5. The period of the transaction is from 10/1/2015 00:00 CDT to 1/1/2016 00:00 CST. The request is for reservation 81596418.

The 25 MW transaction from MPS has an impact on the following flowgates with no AFC: LACNEOEMPWIC and IATSTRSTJHAW. To provide the AFC necessary for this transfer, the impact on these flowgates must be relieved.

After studying many scenarios using generation redispatch, there are several feasible scenarios that will relieve the flowgate(s) in question.

2. Introduction

MOWR has requested a system impact study for transmission service from DOGWOOD.MJMEUC to MOWR_MOPEMPS.

There are 2 constrained flowgates that require relief in order for this reservation to be accepted. The flowgates and the explanations are as follows:

- LACNEOEMPWIC _STH: Lacygne – Neosho 345 kV line for the loss of Emporia – Wichita 345 kV line.
- IATSTRSTJHAW _STH: Iatan - Stranger 345 kV line for the loss of St. Joe – Hawthorn 345 kV line.

3. Study Methodology

A. Description

Southwest Power Pool used Transmission Adequacy & Reliability Assessment (TARA) to obtain possible unit pairings that would relieve the constraint. TARA 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 2015 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 Transmission Adequacy & Reliability Assessment (TARA), 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 TARA is the amount of redispatch necessary to relieve the impact on the affected flowgate.

4. Study Results

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

Table 1

Flowgate	Duration	Sensitivity %	Impact MW
5022 : LACNEOEMPWIC	10/1/2015 - 1/1/2016	4.44%	1
5228 : IATSTRSTJHAW	10/1/2015 - 1/1/2016	7.19%	2

Table 2 displays a list of generator pairs that are possible relief options for each flowgate in question and the amount of redispatch capacity needed.

Table 2

5022 : LACNEOEMPWIC			
Increment	Decrement	Sensitivity %	Redispatch MW
Riverton	Lacygne	34.24%	3
Northeastern 3&4	Lacygne	34.02%	3
Stateline	Lacygne	33.78%	3
Riverton	Lawrence EC	23.00%	4
Northeastern 3&4	Lawrence EC	22.78%	4
Stateline	Lawrence EC	22.54%	4

5228 : IATSTRSTJHAW			
Increment	Decrement	Sensitivity %	Redispatch MW
Lawrence EC	latan	65.15%	3
Jeffrey EC	latan	64.93%	3
Tecumseh EC	latan	62.90%	3
Emporia EC	latan	59.86%	3
Lawrence EC	Lake Road	52.85%	4
Jeffrey EC	Lake Road	52.63%	4
Tecumseh EC	Lake Road	50.61%	4
Emporia EC	Lake Road	47.56%	4

5. Conclusion

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, agreement to the redispatch costs must be presented to Southwest Power Pool. Noncompliance with this guideline will result in the refusal of the reservation.