



SPP

*Southwest
Power Pool*

***System Impact Study
SPP-2015-004
For Transmission Service
Requested By:
MOWR***

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

***For a Reserved Amount Of
25 MW***

For 5/1/2015 – 7/1/2015

1. Executive Summary

MOWR has requested a system impact study for monthly firm transmission service from DOGWOOD.MJMEUC to MOWR_MOPEPMP. The period of the transaction is from 5/1/2015 00:00 CDT to 7/1/2015 00:00 CDT. The request is for reservation 80853925.

The 25 MW transaction from MPS has an impact on the following flowgates with no AFC: 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_MOPEPMPS.

There is 1 constrained flowgate that require relief in order for this reservation to be accepted. The flowgates and the explanations are as follows:

- IATSTRSTJHAW: Iatan – Stranger Creek 345 kV line for the loss of the 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, five flowgates require relief. The flowgates and associated amount of relief are as follows:

Table 1

Flowgate	Duration	Sensitivity %	Impact MW
5228 : IATSTRSTJHAW	5/1/2015 - 6/1/2015	3.3%	1

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

Table 2

Increment	Decrement	Sensitivity %	Redispatch MW
Lawrence EC	Iatan	71.7%	1
Jeffrey EC	Iatan	70.9%	1
Tecumseh EC	Iatan	69.3%	1
Emporia EC	Iatan	67.1%	1
Lawrence EC	Lake Road	56.7%	2
Jeffrey EC	Lake Road	56.0%	2
Tecumseh EC	Lake Road	54.4%	2
Emporia EC	Lake Road	52.1%	2
Lawrence EC	Nebraska City	37.5%	3
Jeffrey EC	Nebraska City	36.7%	3
Tecumseh EC	Nebraska City	35.1%	3
Emporia EC	Nebraska City	32.9%	3

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.