System Impact Study
SPP-2014-019
For Transmission Service
Requested By:
MOWR

From DOGWOOD.MJMEUC to MOWR_MOPEPMPS

For a Reserved Amount Of
25 MW
For 11/1/2014 – 4/1/2015

1. Executive Summary

MOWR has requested a system impact study for monthly firm transmission service from DOGWOOD.MJMEUC to MOWR_MOPEPMPS. The period of the transaction is from 11/1/2014 00:00 CDT to 4/1/2015 00:00 CDT. The request is for reservation 80269993.

The 25 MW transaction from MPS has an impact on the following flowgates with no AFC: LACNEOEMPWIC, IATSTRSTJHAW, and IATSTRIATEAT. 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 are 3 constrained flowgates that require relief in order for this reservation to be accepted. The flowgates and the explanations are as follows:

- LACNEOEMPWIC: Lacygne – Neosho 345 kV line for the loss of the Emporia – Wichita 345 kV line

- IATSTRSTJHAW: Iatan – Stranger Creek 345 kV line for the loss of the St. Joe - Hawthorn 345 kV line

- IATSTRIATEAT: Iatan – Stranger Creek 345 kV line for the loss of the Iatan – Eastowne 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 2014 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, three flowgates require relief. The flowgates and associated amount of relief are as follows:

Table 1

Flowgate	Duration	Sensitivity	MW Impact
5022 : LACNEOEMPWIC	11/1/2014 - 4/1/2015	6.9%	2
5228 : IATSTRSTJHAW	2/1/2015 - 3/1/2015	3.2%	1
5462 : IATSTRIATEAT	12/1/2014 - 3/1/2015	3.2%	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

5022 : LACNEOEMPWIC			
Increment	**Decrement**	**Sensitivity**	**Redispatch MW**
Coffeyville	Lacynge	37.0%	5
Northeast Station	Lacynge	34.6%	6
Riverton	Lacynge	34.5%	6
Coffeyville	West Gardner	27.7%	7
Coffeyville	South Harper	26.3%	8
Northeast Station	West Gardner	25.2%	8
Riverton	West Gardner	25.1%	8
Northeast Station	South Harper	23.8%	8
Riverton	South Harper	23.7%	8

5228 : IATSTRSTJHAW			
Increment	**Decrement**	**Sensitivity**	**Redispatch MW**
Lawrence Energy Center	Iatan	71.6%	1
Jeffrey Energy Center	Iatan	70.9%	1
Lawrence Energy Center	Lake Road	57.8%	2
Jeffrey Energy Center	Lake Road	57.1%	2

5462 : IATSTRIATEAT			
Increment	**Decrement**	**Sensitivity**	**Redispatch MW**
Jeffrey Energy Center	Iatan	85.1%	1
Lawrence Energy Center	Iatan	84.7%	1
Jeffrey Energy Center	Sibley	7.5%	13
Lawrence Energy Center	Sibley	7.2%	14

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.