System Impact Study
SPP-2018-034
For Transmission Service
Requested By:
MCPI

From CSWS to EES

For a Reserved Amount Of
200 MW
From 02/12/2018
To 02/17/2018

1. Executive Summary

MCPI has requested a system impact study for daily firm transmission service from CSWS to EES. The period of the transaction is from 02/12/2018 00:00 to 02/17/2018 00:00. The request is for reservation 86344324.

The 200 MW transaction from CSWS has an impact on the following flowgates with no AFC: BEAEURFLIBRO, TAHH59MUSFTS, PITVALANOFTS. 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

MCPI has requested a system impact study for transmission service from CSWS to EES.

There are 3 constrained flowgates that require relief in order for this reservation to be accepted. The flowgates and the explanations are as follows:

- BEAEURFLIBRO: BEAVER – EUREKA 161 kV for the loss of the FLINT CREEK – BROOKLINE 345 kV.

- TAHH59MUSFTS: TALEQUAH – HIGHWAY 59 161 kV for the loss of the MUSKOGEE – Ft. SMITH 345 kV.

- PITVALANOFTS: PITTSBURGH – VALIANT 345 kV for the loss of the ANO – Ft. SMITH 500 kV.

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 2018 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 (%)	Required Relief (MW)
5218:BEAEURFLIBRO	2/12/2018 08:00 - 2/13/2018 23:00	3.40%	7
5223:TAHH59MUSFTS	2/12/2018 00:00 - 2/17/2018 00:00	3.98%	8
5660:PITVALANOFTS	2/12/2018 06:00 - 2/12/2018 09:00	3.41%	7

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

5218:BEAEURFLIBRO			
Increment	**Decrement**	**Sensitivity**	**MW**
James River	Flint Creek	13.44%	52
James River	GREC	9.99%	70
Plum Point	Flint Creek	9.98%	70
James River	Asbury	8.72%	80
Big Stone	Flint Creek	8.44%	83

5223:TAHH59MUSFTS			
Increment	**Decrement**	**Sensitivity**	**MW**
Fitzhugh	GREC	14.51%	55
Fitzhugh	Northeastern	14.02%	57
Fitzhugh	Muskogee	13.89%	58
Turk	GREC	4.27%	187
Wilkes	GREC	3.72%	215

5660:PITVALANOFTS			
Increment	**Decrement**	**Sensitivity**	**MW**
Turk	Redbud	34.21%	20
Turk	Mcclain	34.09%	21
Turk	Oneta	33.17%	21
Lebrock	Redbud	30.37%	23
Lebrock	Mcclain	30.26%	23
Knoxlee	Redbud	30.11%	23
Knoxlee	Mcclain	29.99%	23
Lebrock	Oneta	29.34%	24
Knoxlee	Oneta	29.08%	24

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, 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.