SPP Southwest Power Pool

System Impact Study
SPP-2013-001
For Transmission Service
Requested By:
WRGS

From MPS to EES

For a Reserved Amount Of
53 MW
From 2/1/2013
To 3/1/2013

1. Executive Summary

WRGS has requested a system impact study for monthly firm transmission service from MPS to EES. The period of the transaction is from 2/1/2013 00:00 to 3/1/2013 00:00. The request is for reservation 77802044.

The 53 MW transaction from MPS has an impact on the following flowgates with no AFC: LACNEOLANWIC and NESTULNESONE. 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

WRGS has requested a system impact study for transmission service from MPS to EES.

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

- LACNEOLANWIC: Lacygne to Neosho 345 kV line for the loss of the Lang to Wichita 345 kV line.

- NESTULNESONE: NE Station to Tulsa N. 345 kV line for the loss of the NE Station to Oneta 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 2013 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)
5022 : LACNEOLANWIC	2/1/2013 - 2/3/2013	15%	3
5022 : LACNEOLANWIC	2/23/2013 - 3/1/2013	15.8%	3
5347 : NESTULNESONE	2/1/2013 - 2/3/2013	7.6%	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 LACNEOLANWIC			
Increment	**Decrement**	**Sensitivity**	**MW**
Neosho	Lawrence Energy Center	32%	9
Neosho	Tecumseh Energy Center	31%	10
Neosho	Jeffery Energy Center	30%	10
City of Erie	Lawrence Energy Center	23%	13
City of Erie	Tecumseh Energy Center	22%	14
City of Erie	Jeffery Energy Center	21%	14
Murray Gill Energy Center	Lawrence Energy Center	12%	25
Murray Gill Energy Center	Tecumseh Energy Center	11%	27
Gordon Evans Energy Center	Lawrence Energy Center	11%	27
Murray Gill Energy Center	Jeffery Energy Center	10%	29
Gordon Evans Energy Center	Tecumseh Energy Center	10%	30
Gordon Evans Energy Center	Jeffery Energy Center	9%	32

5347 NESTULNESONE			
Increment	**Decrement**	**Sensitivity**	**MW**
City of Mcpherson Plant	Neosho	12%	9
Hutchinson Energy Center	Neosho	12%	9
Abilene Energy Center	Neosho	11%	9
City of Mcpherson Plant	City of Erie	8%	13
Hutchinson Energy Center	City of Erie	8%	13
Abilene Energy Center	City of Erie	8%	13

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.