SPP Southwest Power Pool

System Impact Study
SPP-2013-013
For Transmission Service
Requested By:
OPPM

From MPS to OPPD

For a Reserved Amount Of
150 MW
For 6/28/2013

1. Executive Summary

OPPM has requested a system impact study for monthly firm transmission service from MPS to OPPD. The period of the transaction is from 6/28/2013 00:00 to 6/29/2013 00:00. The request is for reservation 78398887.

The 150 MW transaction from MPS has an impact on the following flowgates with no AFC: GRIS_LNC and IATAN_STJOE. 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

OPPM has requested a system impact study for transmission service from MPS to OPPD.

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

- GRIS_LNC: Pauline – Moore 345 kV, Grand Island – McCool 345 kV, and Grand Island – Columbus West 230 kV interface.

- IATAN_STJOE: Iatan – St. Joe 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)
6008 : GRIS_LNC	6/28/2013	9.3%	14
6104 : IATAN_STJOE	6/28/2013	20.4%	31

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

6008 : GRIS_LNC			
Increment	**Decrement**	**Sensitivity**	**MW**
Nebraska City	Canaday NPPD	57.6%	24
Cass County	Canaday NPPD	57.2%	24
Sarpy	Canaday NPPD	56.5%	25
Jones	Canaday NPPD	56.4%	25
North Omaha	Canaday NPPD	56.4%	25
Nebraska City	Whelan Energy Center NPPD	56.0%	25
Cass County	Whelan Energy Center NPPD	55.6%	25
Nebraska City	Gentleman NPPD	55.0%	25
Sarpy	Whelan Energy Center NPPD	54.8%	26
Jones	Whelan Energy Center NPPD	54.8%	26
North Omaha	Whelan Energy Center NPPD	54.8%	26
Cass County	Gentleman NPPD	54.6%	26
Sarpy	Gentleman NPPD	53.8%	26
Jones	Gentleman NPPD	53.8%	26
North Omaha	Gentleman NPPD	53.8%	26

6104 : IATAN_STJOE			
Increment	**Decrement**	**Sensitivity**	**MW**
Nebraska City	Iatan KCPL	56.3%	55
Cass County	Iatan KCPL	55.1%	56
Sarpy	Iatan KCPL	54.4%	57
North Omaha	Iatan KCPL	54.3%	57
Jones	Iatan KCPL	54.3%	57
Nebraska City	LEC WR	34.0%	91
Nebraska City	JEC WR	33.2%	93
Cass County	LEC WR	32.9%	94
Sarpy	LEC WR	32.1%	96
Cass County	JEC WR	32.1%	97
North Omaha	LEC WR	32.1%	97
Jones	LEC WR	32.1%	97
Nebraska City	TEC GT WR	31.6%	98
Sarpy	JEC WR	31.3%	99
North Omaha	JEC WR	31.3%	99
Jones	JEC WR	31.3%	99

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.