



SPP *Southwest
Power Pool*

***System Impact Study
SPP-2020-084
For Transmission Service
Requested By:
MDUM***

***From MDU.LEWIS1 to
WAUE.MDU.NTWK***

***For a Reserved Amount Of
52 MW
From 10/1/2020
To 12/1/2020***

1. Executive Summary

MDUM has requested a system impact study for monthly firm transmission service from MDU.LEWIS1 to WAUE.MDU.NTWK. The period of the transaction is from 10/1/2020 00:00 to 12/1/2020 00:00. The request is for reservation 92039749.

The 52 MW transaction from MDU.LEWIS1 has an impact on the following flowgates with no AFC: LEWRICBELCHA, NDEX. To provide the AFC necessary for this transfer, the impact on these flowgates must be relieved.

2. Introduction

MDUM has requested a system impact study for transmission service from MDU.LEWIS1 to WAUE.MDU.NTWK.

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

- LEWRICBELCHA: Lewis – Richland 115 kV for the loss of Belfield – Charlie Creek 345 kV.
- NDEX: North Dakota Exports.

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 2020 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)
5121:LEWRICBELCHA	10/1/2020 00:00 - 12/1/2020 00:00	4.93%	2.57
6001:NDEX	10/1/2020 00:00 - 12/1/2020 00:00	46.29%	24.07

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

Table 2

5121:LEWRICBELCHA			
Increment	Decrement	Sensitivity	MW
No redispatch pairs available			

6001:NDEX			
Increment	Decrement	Sensitivity	MW
No redispatch pairs available			

5. Conclusion

Generation redispatch options were studied in order to relieve the necessary constraint. The result of this study shows that the constraints on the flowgates in question could not be relieved by executing one of the options described in the Study Results section of this document. The reservation will be refused due to no ATC on the impacted flowgates.