



**SPP** *Southwest  
Power Pool*

***System Impact Study  
SPP-2020-075  
For Transmission Service  
Requested By:  
NPPM***

***From BEPC.BRADY1 to  
WAUW.NWMT***

***For a Reserved Amount Of  
50 MW  
From 11/01/2020  
To 01/01/2021***

## **1. Executive Summary**

NPPM has requested a system impact study for monthly firm transmission service from BEPC.BRADY1 to WAUW.NWMT. The period of the transaction is from 11/01/2020 00:00 to 01/01/2021 00:00. The request is for reservation 92017952.

The 50 MW transaction from BEPC.BRADY1 has an impact on the following flowgates with no AFC: CHAWATCHAPAT. 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**

NPPM has requested a system impact study for transmission service from BEPC.BRADY1 to WAUW.NWMT.

There is one constrained flowgate that requires relief in order for this reservation to be accepted. The flowgate and the explanation is as follows:

- CHAWATCHAPAT: Charlie Creek – Waterford 230 kV for the loss of Charlie Creek – Patent Gate 345 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 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, one flowgate requires relief. The flowgate and associated amount of relief are as follows:

**Table 1**

<b>Flowgate</b>	<b>Duration</b>	<b>Sensitivity (%)</b>	<b>Required Relief (MW)</b>
5717:CHAWATCHAPAT	11/1/2020 00:00 - 1/1/2021 00:00	5.54%	2.77

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**

<b>5717:CHAWATCHAPAT</b>			
<b>Increment</b>	<b>Decrement</b>	<b>Sensitivity</b>	<b>MW</b>
Lonesome 5	Lelando 2	57.13%	4.85
Lonesome 5	OAHE 1	56.55%	4.90
Lonesome 5	Big Bend 6	56.55%	4.90
Pioneer 3	Lelando 2	32.61%	8.49
Pioneer 3	OAHE 1	32.04%	8.65
Pioneer 3	Big Bend 6	32.03%	8.65
Tande 3	Lelando 2	29.71%	9.32
Tande 3	OAHE 1	29.14%	9.51
Tande 3	Big Bend 6	29.13%	9.51

## **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.