



SPP

*Southwest
Power Pool*

System Impact Study

SPP-2003-004

For Transmission Service

Requested By:

***Aquila Energy Marketing
Corporation***

From OPPD to ERCOTE

***For a Reserved Amount Of
50 MW***

From 03/1/03

To 06/1/03

SPP Transmission Planning

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1. Executive Summary

Aquila has requested a system impact study for Monthly Firm transmission service from OPPD to ERCOTE. The period of the transaction is from 03/1/03 to 06/1/03. The request is for reservation 473327 for the amount of 50MW and is a redirect of original confirmed service 338092 from CLEC to ERCOTE.

The 50MW transaction from OPPD to ERCOTE has created new constraints on the NESONENESTUL, WNE_WKS, and WEBRERICHARD flowgates. To provide the ATC necessary for this transfer, the impact on these flowgates must be relieved.

It has been determined that there is not sufficient time available to complete upgrades to the system that would relieve these flowgates.

After studying many scenarios using redispatch and curtailment of reservations, there are no feasible solutions that will relieve the flowgates in question.

2. Introduction

Aquila has requested an impact study for transmission service from OPPD to ERCOTE.

There are three constrained flowgates that need relief in order for this reservation to be accepted. The flowgates and their explanations are as follows:

- The Northeastern Station to Oneta (NESONEENESTUL) flowgate has been identified as the limiting constraint for the OPPD to ERCOTE transfer. For this flowgate, the Northeastern Station to Oneta, 345kV line is monitored during the loss of the Northeastern Station to Tulsa North, 345kV line. It has been determined that the 50MW transfer from OPPD to ERCOTE will cause the Northeastern Station to Oneta line to overload should the loss of the Northeastern Station to Tulsa North line occur.
- The Gentleman to Red Willow, 345 KV line makes up the WNE_WKS flowgate.
- The Webre to Richard 500 KV line makes up the WEBRERICHARD flowgate.

There are no facility upgrades available to relieve this flowgate that can be completed in the time period available. This impact study reviews redispatch and curtailment of existing reservations as an option to relieving the transmission constraints.

3. Study Methodology

A. Description

Southwest Power Pool used the NERC Generator Sensitivity Factor (GSF) Viewer to obtain possible unit pairings that would relieve the constraint. The GSF viewer calculates impacts on monitored facilities for all units above 20MW in the Eastern Interconnection. The SPP ATC Calculator is used to determine response factors for the time period of the reservation.

B. Model Updates

The 2003 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 the NERC Generator Sensitivity Factor (GSF) Viewer, 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 the Viewer is the amount of redispatch necessary to relieve the impact on the affected flowgate.

4. Study Results

After comparing impacts of original request 338092 and redirect request 473327, three flowgates remain unrelieved. These flowgates with the amount that is needed to be relieved are as follows:

- NESONENESTUL (5.0 MW)
- WNE_WKS (3.8 MW)
- WEBRERICHARD (6.0 MW)

The only flowgate that was able to be relieved using curtailment of reservations was the WEBRERICHARD flowgate. Since this was a new constraint, the total impact of the reservation on this flowgate had to be relieved. With a sensitivity factor of 0.12, the impact is as stated, 6.0 MW. In order to relieve this amount of constraint, a CSWS to ERCOTE reservation would have to be curtailed by 110 MW, since the sensitivity factor of this particular reservation was 0.055 on this flowgate. This was possible with the reservations available to curtail.

After running all generation scenarios, it was determined that it would take more generation than what was available in order to relieve the constraints on NESONENESTUL, and WNE_WKS. The generation, available for redispatch, is too far removed from these flowgates.

5. Conclusion

Redispatch and curtailment options given by Aquila Energy Marketing Corporation were exhausted in this study to relieve the constraints necessary. The results of the study showed that the constraints on the flowgates in question could not be relieved. Therefore, the request for monthly service from OPPD to ERCOTE will be refused.