



**Economic Transmission Planning Study
for the
South Carolina Regional Transmission Planning (SCRTP)
Stakeholder Group**

**Scenario: 500 MW Transfer from SCE&G to
Progress Energy Carolinas, 2015 Summer**

**Prepared by
SCE&G Transmission Planning
and Santee Cooper Transmission Planning**

March 18, 2010

Scenario: 500 MW Transfer from SCE&G to Progress Energy Carolinas Economic Transmission Planning Study

GENERAL DISCUSSION

This study was conducted to determine the ability of the SCE&G and Santee Cooper transmission systems to transfer 500 MW from SCE&G to Progress Energy Carolinas for expected 2015 summer conditions.

SCE&G Transmission Planning and Santee Cooper Transmission Planning have studied the requested transfer and conducted a comparative analysis of the SCE&G and Santee Cooper transmission systems without the requested transfer and then with the requested transfer. This report discusses the differences between these two analyses.

STUDY METHODOLOGY

The base case model used in this study was the 2015 Summer Peak case created by the SERC Long-term Study Group (LTSG) during the 2009 model development process. For the transfer case, the request was to study a 500 MW transfer from the SCEG area to the Progress Energy Carolinas area. SCE&G modeled 105 MW of available generation and reduced load by 395 MW to make the 500 MW transfer.

In accordance with the requirements of NERC Standards FAC-012-1 and FAC-013-1, the transfer capability in this study was developed consistent with Transfer Capability Methodology as documented in the SERC LTSG Procedure Manual.

Two types of studies performed:

- The first analysis in this study was a linear transfer analysis using PTI's MUST Software. This analysis included single contingencies in SERC while monitoring SCE&G and Santee Cooper transmission systems.
- The second analysis in this study was a thermal and voltage analysis using PTI's PSS/E Power Flow Software and PowerWorld Simulator Software. This analysis of SCE&G and Santee Cooper internal transmission systems included single contingencies, double contingencies and select bus outages with and without the simulated 500 MW transfer in effect. However, this analysis is not a complete testing of NERC TPL standards. It does not include all required TPL events nor does it include dynamic stability analyses.

In these analyses, overloaded facilities that had a low response to the requested transfer were excluded; and problems or issues identified that are local area in nature were also excluded.

STUDY RESULTS

From the linear analysis the following transmission facilities limit the transfer.

For SCE&G:

No SCE&G facilities were a limit to the linear transfer analysis.

For Santee Cooper:

No Santee Cooper facilities were a limit to the linear transfer analysis.

From the thermal and voltage analysis the following transmission facilities exceeded their thermal or voltage limits:

For SCE&G:

Scenario	Constrained Facility	Percent Loading	Percent Increase	Contingencies
SCEG-Progress Energy Carolinas 500 MW	Urquhart-Langley Tap 115 kV	105.29	6.6	Urquhart-Belvedere SS 115 kV
				Urquhart-Urquhart 46 115 kV

For Santee Cooper:

No Santee Cooper facilities exceeded their thermal or voltage limits for the thermal and voltage analysis.

CONCLUSIONS

Based on the results of this study for the time period studied and the assumptions made, there are no single contingencies in the SCE&G and Santee Cooper areas that limit this transfer.

For a double contingency of the Urquhart-Belvedere Switching Station 115 kV line and Urquhart-Urquhart 46 115 kV line, the Urquhart-Langley Tap 115 kV line is above its thermal rating at the 500 MW transfer level.

RECOMMENDATIONS, COST ESTIMATES AND SCHEDULES

To alleviate the constrained Urquhart-Langley Tap 115 kV line during this double contingency the circuit would need to be rebuilt with a larger conductor.

The cost of this project is estimated to be \$5,100,000*.

The time to complete this project once it is initiated is estimated to be 24 months.

*Based on 2010 dollars.

Attachment “A”

DRAFT

**South Carolina Regional Transmission Planning
Economic Transmission Study Submittal Form**

Please email completed form to: cyoung@scana.com

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Economic Scenario #1:

Source Area:	SCE&G
Sink Area:	CPL
Transfer (MW):	500 MW
Study Year:	2015
Study Conditions:	
Other Information:	
Benefits of Study and Other Comments:	