



SPP *Southwest Power Pool*

*System Impact Study
SPP-2001-078
For Transmission Service
Requested By
NRG Power Marketing*

From EES to SPS

*For a Reserved Amount Of 100MW
From 6/1/01
To 6/1/02*

SPP Coordinated Planning

Table of Contents

1. EXECUTIVE SUMMARY	3
2. INTRODUCTION	5
3. STUDY METHODOLOGY	6
A. DESCRIPTION.....	6
B. MODEL UPDATES.....	6
C. TRANSFER ANALYSIS	6
4. STUDY RESULTS.....	7
A. STUDY ANALYSIS RESULTS	7
TABLE 1 – SPP FACILITY OVERLOADS CAUSED BY THE EES TO SPS 100MW TRANSFER	8
TABLE 2 – NON - SPP FACILITY OVERLOADS CAUSED BY THE EES TO SPS 100MW TRANSFER.....	9
TABLE 3 – PREVIOUSLY ASSIGNED OR IDENTIFIED SPP FACILITIES IMPACTED BY THE EES TO SPS 100MW TRANSFER	10
TABLE 4 – EXISTING HIGHER PRIORITY TRANSMISSION REQUESTS OVER THE SPP TO SPS INTERFACE DURING THE RESERVATION PERIOD	11
TABLE 5 – AVAILABLE TRANSFER CAPABILITY DURING THE RESERVATION PERIOD FOR SPS IMPORTS DUE TO VOLTAGE STABILITY LIMITATIONS	11
5. CONCLUSION	12
APPENDIX A	13

1. Executive Summary

NRG Power Marketing has requested a system impact study for long-term Firm Point-to-Point transmission service from Entergy to SPS. The period of the transaction is from 6/1/01 to 6/1/02. The request is for OASIS reservations 242360 and 242361, totaling 100MW.

Before conducting this study, SPP had to complete the *Southwestern Public Service Voltage Constrained Import Limits 2001 Fall – 2010 Summer Study*, which is posted on OASIS, and evaluate 478MW of higher priority requests for service into the SPS system. The following table lists these higher priority requests and their updated status.

Study	Request	Customer	POR	POD	Status	Start Time	Stop Time	Capacity Requested
2000-145	227799	OPMC	OKGE	SPS	WITHDRAWN	6/1/01	6/1/02	75
2001-016	229925	SPSM	AMRN	SPS	REFUSED	1/1/02	1/1/03	50
2001-016	229926	SPSM	AMRN	SPS	REFUSED	1/1/02	1/1/03	50
2001-035	237266	SPSM	AMRN	SPS	REFUSED	1/1/02	1/1/03	3
2001-035	237267	SPSM	AMRN	SPS	REFUSED	1/1/02	1/1/03	50
2001-035	237268	SPSM	AMRN	SPS	REFUSED	1/1/02	1/1/03	50
2001-076	242232	WRGS	WR	BLKW	STUDY	2/1/02	3/1/12	200
Sum Of Requests								478

Since the start date of the requested year of service has passed, SPP will grant, depending on the conclusion of the study, either the remaining request period or a deferral period of 11/1/01 to 11/1/02.

The principal objective of this study is to identify system problems and potential system modifications necessary to facilitate the additional 100MW transfer while maintaining system reliability. The 100MW transfer was studied without the WRGS WR to BLKW 200MW request because it is assumed that the request will be withdrawn. If the request is not withdrawn the loading on the system will only be more severe and the conclusion of the study the same.

New overloads caused by the 100MW transfer were identified along with determining the impact of the transfer on any previously assigned and identified facilities.

The EES to SPS transfer overloads new facilities as well as impacts facilities that have been identified as limiting constraints for previously studied transfers. Tables 1 and 2 list the new overloads caused by the 100MW transfer. Table 3 lists the previously assigned and identified facilities impacted by the 100MW transfer. The facilities found in Table 3 limit the ATC to zero.

In addition to the thermal limitations identified, the SPP to SPS interface has Voltage Stability Limitations. The ATC determination and the higher priority transmission requests over the SPP to SPS interface are documented in Tables 4 and 5. The ATC was determined by using previously calculated Total Transfer Capability (TTC) for SPS

Imports from the before mentioned *Southwestern Public Service Voltage Constrained Import Limits 2001 Fall – 2010 Summer Study*, the Transmission Reliability Margin for SPS Imports of 540MW, and the existing higher priority SPS Imports. For the 2002 Summer, the voltage constrained ATC has been determined to be 159MW.

The SPP and effected member companies shall use due diligence to coordinate the addition of necessary facilities or transmission system upgrades to provide the requested transmission service. NRG is to compensate SPP for such costs pursuant to the terms of section 27 of the SPP Open Access Transmission Tariff.

Expedited procedures for new facilities and upgrades are available to NRG per section 19.8 of the SPP Open Access Transmission Service Tariff.

Engineering and construction of any new facilities or modifications will not start until after a transmission service agreement and/or construction agreement is in place and effected member companies receive the appropriate authorization to proceed from the SPP after receiving authorization from the transmission customer.

2. Introduction

NRG has requested an impact study for transmission service from Entergy control area with a point-of-delivery of SPS.

The principal objective of this study is to identify the restraints on the SPP Regional Tariff System that may limit the transfer to less than 100MW. This study includes steady-state contingency analyses (PSS/E function ACCC) and Available Transfer Capability (ATC) analyses.

The steady-state analyses consider the impact of the 100MW transfer on transmission line loading and transmission bus voltages for outages of single and selected multiple transmission lines and transformers on the SPP system.

3. Study Methodology

A. Description

Three analyses were conducted to determine the impact of the 100MW transfer on the system. The first analysis was conducted to identify any new overloads caused by the 100MW transfer. The second analysis was done to ensure that available capacity exists on previously identified circuits. The final analysis was done to determine the ATC, using the calculated TTC of the posted *Southwestern Public Service Voltage Constrained Import Limits 2001 Fall – 2010 Summer Study*. The performed study did not consider thermal limitations only voltage limitations for SPS imports.

The first analysis was to study the steady-state analysis impact of the 100MW transfer on the SPP system and surrounding systems. The second step was to study Available Transfer Capability (ATC) of the facilities identified in the steady-state analysis impact. The steady-state analysis was done to ensure current SPP Criteria and NERC Planning Standards requirements are fulfilled. The Southwest Power Pool (SPP) conforms to the NERC Planning Standards, which provide the strictest requirements, related to thermal overloads with a contingency. It requires that all facilities be within emergency ratings after a contingency.

The second analysis was done to determine the impact of the transfer on previously assigned and identified facilities.

B. Model Updates

SPP used two seasonal models to study the 100MW request. The SPP 2001 Series Cases 2001/02 Winter Peak and 2002 Summer Peak were used to study the impact of the 100MW transfer on the SPP system for the remaining request period and a deferral period of 11/1/01 to 11/1/02.

The chosen base case models were modified to reflect the most current modeling information. The cases were modified to reflect future firm transfers during the request period that were not already included in the January 2001 base case series models.

C. Transfer Analysis

Using the created models and the ACCC function of PSS/E, single and select double contingency outages were analyzed. Then full AC solution was used to obtain the most accurate results possible. Any facility overloaded, using MVA ratings, in the transfer case and not overloaded in the base case was flagged. The PSS/E options chosen to conduct the Impact Study analysis can be found in Appendix A.

4. Study Results

A. Study Analysis Results

Tables 1, 2, and 3 contain the steady-state analysis results of the System Impact Study. The tables identify the seasonal case in which the event occurred; the emergency rating of the overloaded circuit (Rate B or Flowgate Rating), the contingent loading percentage of circuit with and without the studied transfer, the estimated ATC value using interpolation if calculated, any SPP identification or assignment of the event, and any solutions received from the transmission owners. Tables 4 and 5 provide information from the previous Voltage Stability study regarding the voltage constrained import capability of the SPS system.

Table 1 shows the new facility overloads caused by the 100MW transfer. Upgrades associated with these new overloads can be directly assigned to the EES to SPS transfers.

Table 2 documents overloads on Non SPP Regional Tariff participants' transmission systems caused by the 100MW transfer.

Table 3 documents the 100MW transfer impact on previously assigned and identified facilities.

Table 4 lists the existing higher priority transmission requests over the SPS interface. Table 5 documents the ATC, using the results of Table 4 and the TTC for SPS imports due to voltage stability limitations. The ATC of Table 4 does not account for thermal limitations.

Table 1 – SPP Facility Overloads caused by the EES to SPS 100MW Transfer

Study Year	From Area To Area	Branch Over 100% RateB	RATE B	BC %Loading	TC %Loading	Outaged Branch That Caused Overload	ATC (MW)	Solution
01WP	WERE-WERE	GILL WEST TO EL PASO, 138KV 57045 GILL W4 138 to 57039 ELPASO 4 138 CKT 1	191	100.0	100.7	EVANS NORTH TO EVAN SOUTH, 138KV 57040 EVANS N4 138 to 57041 EVANS S4 138 CKT1	0	Solution Undetermined
01WP	WERE-WERE	WEST JCT CITY TO WEST JCT CITY JCT (WEST), 115KV 57342 WJCCTY 3 115 to 57344 WJCCTYW3 115 CKT 1	141	99.9	101.5	JEFFREY ENERGY CENTER NORTH TO SUMMIT, 345KV 56766 JEC N 7 345 to 56773 SUMMIT 7 345 CKT1	9	"
01WP	WERE-WERE	WEST JCT CITY TO WEST JCT CITY JCT (WEST), 115KV 57342 WJCCTY 3 115 to 57344 WJCCTYW3 115 CKT 1	141	99.7	101.6	SUMMIT 345/230KV TRANSFORMER 56773 SUMMIT 7 345 to 56813 SUMMIT7X1.00 CKT1	17	"
01WP	OKGE-WFEC	RUSSETT TO RUSSETT, 138KV 55120 RUSSETT4 138 to 56044 RUSSETT4 138 CKT 1	96	98.6	102.0	EXPLORER TAP TO BROWN, 138KV 55153 EXPLRTP4 138 to 55157 BROWN 4 138 CKT1	41	"
01WP	SWPA-WFEC	BROWN TO RUSSETT, 138KV 52802 S BROWN4 138 to 56044 RUSSETT4 138 CKT 1	96	97.9	101.3	BROWN TAP TO EXPLORER TAP, 55152 BROWNT4 138 to 55153 EXPLRTP4 138 CKT1	63	"
02SP	SPS-SPS	CANYON EAST TO CANYON WEST, 115KV 51080 CANYNE3 115 to 51078 CANYNW3 115 CKT 1	90	98.8	108.2	BUSHLAND INTRCHNG TO DEAF SMITH INTRCHNG, 230KV 50993 BUSHLND6 230 to 51111 DFSMTH6 230 CKT1	13	"
02SP	AEPW-AEPW	FULTON TO HOPE, 115KV 53374 FULTON 3 115 to 53383 HOPE 3 115 CKT 1	174	99.8	101.1	EL DERADO 500/345KV TRANSFORMER 99294 7ELDEHV 345 to 99295 8ELDEHV 500 CKT1	16	"
02SP	AEPW-AEPW	FULTON TO HOPE, 115KV 53374 FULTON 3 115 to 53383 HOPE 3 115 CKT 1	174	99.8	101.1	LONGWOOD TO EL DERADO, 345KV 53424 LONGWD 7 345 to 99294 7ELDEHV 345 CKT1	17	"
02SP	WFEC-OKGE	FRANKLIN SW TO MIDWEST TAP, 138KV 55917 FRNKLNS4 138 to 54946 MIDWEST4 138 CKT 1	215	99.7	101.1	CROMWELL TO WETUMKA, 138KV 55869 CROMWEL4 138 to 56084 WETUMKA4 138 CKT1	22	"
02SP	SPS-SPS	OSAGE SS TO CANYON EAST, 115KV 51014 OSAGE--3 115 to 51080 CANYNE3 115 CKT 1	90	98.4	104.7	NICHOLS TO SWISHER, 230KV 50915 NICHOL6 230 to 51321 SWISHER6 230 CKT1	25	"
02SP	WFEC-OKGE	FRANKLIN SW TO MIDWEST TAP, 138KV 55917 FRNKLNS4 138 to 54946 MIDWEST4 138 CKT 1	215	99.6	101.0	PHAROAH TO WETUMKA, 138KV 56026 PHAROAH4 138 to 56084 WETUMKA4 138 CKT1	30	"
02SP	AEPW-AEPW	MAGAZINE REC TO N MAGAZINE, 161KV 53201 MAGZREA5 161 to 53149 NMAGZIN5 161 CKT 1	155	97.4	101.5	FORT SMITH TO ANO, 500KV 55305 FTSMITH8 500 to 99486 8ANO 500 CKT1	64	"
02SP	OKGE-OKGE	RUSSETT TO GLASSES, 138KV 55120 RUSSETT4 138 to 55147 GLASSES4 138 CKT 1	96	99.0	100.4	EXPLORER TAP TO BROWN, 138KV 55153 EXPLRTP4 138 to 55157 BROWN 4 138 CKT1	69	"

Table 2 – Non - SPP Facility Overloads caused by the EES to SPS 100MW Transfer

Study Year	From Area To Area	Branch Over 100% RateB	RATE B	BC %Loading	TC %Loading	Outaged Branch That Caused Overload
01WP	AECI-AECI	96067 5CHAMOI 161 to 96626 2CHAMOI 69.0 CKT 1	50	99.2	100.1	31088 MCCREDIE 345 to 31230 MONTGMRY 345 CKT1
01WP	EES-EES	99798 5BATEVL 161 to 99808 5CUSHMN 161 CKT 1	148	99.7	101.4	99764 5NEWPO 161 to 99778 5SWIFTN 161 CKT1
01WP	EES-EES	99798 5BATEVL 161 to 99808 5CUSHMN 161 CKT 1	148	99.2	100.9	99778 5SWIFTN 161 to 99784 5WALNUT 161 CKT1
01WP	EES-EES	99798 5BATEVL 161 to 99808 5CUSHMN 161 CKT 1	148	98.4	100.6	55305 FTSMITH8 500 to 99486 8ANO 500 CKT1
	CELE-CELE	50033 COLFAX 6 230 to 50177 RODEMR 6 230 CKT 1	414	98.6	100.4	97717 8HARTBRG 500 to 97916 8NELSON 500 CKT1
02SP	CELE-EES	50106 MADISON6 230 to 98555 6GYPSY 230 CKT 1	454	99.4	100.1	98487 8BOGALUS 500 to 99027 8FRKLIN 500 CKT1
02SP	LAGN-EES	97305 MARION 3 115 to 99287 3HUTTIG* 115 CKT 1	98	98.2	100.7	99148 8STERL 500 to 99295 8ELDEHV 500 CKT1
02SP	EES-EES	98031 4JENNGS 138 to 98108 4RICHARD 138 CKT 1	159	99.9	102.2	97916 8NELSON 500 to 98107 8RICHARD 500 CKT1
02SP	EES-EES	98107 8RICHARD 500 to 98430 8WEBRE 500 CKT 1	1732	99.9	102.3	98235 8MCKNT 500 to 99027 8FRKLIN 500 CKT1
02SP	EES-EES	98737 3DELTA 115 to 98724 3SHLBY* 115 CKT 1	87	99.1	100.1	98718 6TUNICA 230 to 99651 6RITCH 230 CKT1
02SP	EES-EES	99146 3STERL 115 to 99232 3CROS-N 115 CKT 1	80	99.3	100.1	99286 3CROS-S* 115 to 99305 3MERIDN# 115 CKT1
02SP	EES-EES	99782 5TRUMAN 161 to 99781 5TRUM-W# 161 CKT 1	148	99.7	100.5	99762 5NEW-AB 161 to 99763 5NEW-IN 161 CKT1
02SP	EES-EES	99798 5BATEVL 161 to 99808 5CUSHMN 161 CKT 1	148	99.8	101.4	54033 PITTSB-7 345 to 55224 MUSKOGEE7 345 CKT1
02SP	EES-EES	99798 5BATEVL 161 to 99808 5CUSHMN 161 CKT 1	148	99.7	101.3	98937 8B.WLSN 500 to 99203 8PERYVIL 500 CKT1
02SP	EES-EES	99808 5CUSHMN 161 to 99834 5SAGE * 161 CKT 1	148	99.6	101.3	96040 7FLETCH 345 to 96051 7WILHLM 345 CKT1
02SP	EES-EES	99808 5CUSHMN 161 to 99834 5SAGE * 161 CKT 1	148	99.5	101.2	52660 BULL SH5 161 to 52708 DARDANE5 161 CKT1
02SP	EES-EES	99808 5CUSHMN 161 to 99834 5SAGE * 161 CKT 1	148	99.1	101.0	53277 LYDIA 7 345 to 54037 VALIANT7 345 CKT1
02SP	EES-EES	99817 5ISES 1 161 to 99826 5MORFLD 161 CKT 1	223	99.9	101.0	99806 5CLIN-W# 161 to 99847 5BOTKIN# 161 CKT1
02SP	EES-EES	99817 5ISES 1 161 to 99826 5MORFLD 161 CKT 1	223	99.8	100.9	99822 5MARSHL 161 to 99847 5BOTKIN# 161 CKT1
02SP	EES-EES	99817 5ISES 1 161 to 99826 5MORFLD 161 CKT 1	223	99.9	100.9	99764 5NEWPO 161 to 99817 5ISES 1 161 CKT2

Table 3 – Previously Assigned or Identified SPP Facilities Impacted by the EES to SPS 100MW Transfer

Study Year	From Area To Area	Branch Over 100% RateB	RATE B or Flowgate Rating	BC %Loading	TC %Loading	Outaged Branch That Caused Overload	ATC (MW)	Assignment
01WP	SWPA-WFEC	TUPELO TO TUPELO TAP, 138KV 52800 TUPELO 4 138 to 56071 TUPLOTP4 138 CKT 1	96	112.2	118.0	PITTSBURG TO VALLIANT, 345KV 54037 VALIANT7 345 to 54033 PITTSB-7 345 CKT1	0	SPP Flowgate
01WP	WERE-WERE	PHILIPS TO SOUTH PHILIPS JCT, 115KV 57372 PHILIPS3 115 to 57374 SPHILPJ3 115 CKT 1	160	110.8	113.9	SUMMIT TO EAST MCPHERSON, 230KV 56873 SUMMIT 6 230 to 56872 EMCIPHER6 230 CKT1	0	SPP Flowgate
01WP	WERE-WERE	EXIDE JCT TO SUMMIT, 115KV 57368 EXIDE J3 115 to 57381 SUMMIT 3 115 CKT 1	181	105.5	107.1	SUMMIT TO EAST MCPHERSON, 230KV 56873 SUMMIT 6 230 to 56872 EMCIPHER6 230 CKT1	0	1999-017
01WP	WERE-WERE	EXIDE JCT TO PHILIPS, 115KV 57368 EXIDE J3 115 to 57372 PHILIPS3 115 CKT 1	181	100.4	102.0	SUMMIT TO EAST MCPHERSON, 230KV 56873 SUMMIT 6 230 to 56872 EMCIPHER6 230 CKT1	0	1999-017
02SP	EES-EES	WEBRE TO RICHARD, 500KV 98430 8WEBRE 500 to 98107 8RICHARD 500 CKT1	1250	104.8	107.0	Non - Contingent Flowgate	0	Entergy Flowgate
02SP	EES-EES	WILBERT TO LIVONIA BULK, 138KV 98411 4WILBT 138 to 98410 4LIVON 138 CKT 1	289	138.4	141.0	WEBRE TO RICHARD, 500KV 98430 8WEBRE 500 to 98107 8RICHARD 500 CKT1	0	Entergy Flowgate
02SP	AEPW-AEPW	WELEETKA 138/69KV TRANSFORMER 2 54028 WELETK4 138 to 54029 WELEETK269.0 CKT 2	36	102.8	103.5	WELEETKA 138/69KV TRANSFORMER 1 54028 WELETK4 138 to 54029 WELEETK269.0 CKT1	0	1999-017
02SP	SPS-SPS	ROOSEVELT CO TO TOLK, 230KV CKT 1 51203 ROOSEVL6 230 to 51437 TOLKW6 230 CKT 1	451	106.8	107.7	ROOSEVELT CO TO TOLK, 230KV CKT 2 51203 ROOSEVL6 230 to 51435 TOLKE6 230 CKT2	0	
02SP	SPS-SPS	ROOSEVELT CO TO TOLK, 230KV CKT 2 51203 ROOSEVL6 230 to 51435 TOLKE6 230 CKT 2	451	106.6	107.4	ROOSEVELT CO TO TOLK, 230KV CKT 1 51203 ROOSEVL6 230 to 51437 TOLKW6 230 CKT1	0	
02SP	OKGE-OKGE	FORT SMITH 500/161KV TRANSFORMER 55305 FTSMITH8 500 to 55300 FTSMITH5 161 CKT 1	480	100.2	101.4	FORT SMITH 345/161KV TRANSFORMER 55302 FTSMITH7 345 to 55300 FTSMITH5 161 CKT1	0	
02SP	EES-AEPW	DANVILLE (APL) TO MAGAZINE REC, 161KV 99496 5DANVI 161 to 53201 MAGZREA5 161 CKT 1	155	100.4	104.5	FT SMITH TO ARKANSAS NUCLEAR ONE, 500KV 55305 FTSMITH8 500 to 99486 8ANO 500 CKT1	0	

Table 4 – Existing Higher Priority Transmission Requests Over the SPP to SPS Interface During the Reservation Period

Request	POR	POD	Amnt	Customer	Status	Nov-01	Dec-01	Jan-02	Feb-02	Mar-02	Apr-02	May-02	Jun-02	Jul-02	Aug-02	Sep-02	Oct-02
136714	AMRN	SPS	50	SPSM	Confirmed			50	50	50	50	50	50	50	50	50	50
136717	AMRN	SPS	50	SPSM	Confirmed			50	50	50	50	50	50	50	50	50	50
136718	AMRN	SPS	50	SPSM	Confirmed			50	50	50	50	50	50	50	50	50	50
136724	AMRN	SPS	50	SPSM	Confirmed			50	50	50	50	50	50	50	50	50	50
Total Amount of Requests						0	0	200	200	200	200	200	200	200	200	200	200

Table 5 – Available Transfer Capability During the Reservation Period for SPS Imports Due To Voltage Stability Limitations

	Nov-01	Dec-01	Jan-02	Feb-02	Mar-02	Apr-02	May-02	Jun-02	Jul-02	Aug-02	Sep-02	Oct-02
Total Transfer Capability (TTC)	1031	993	993	993	993	985	985	899	899	899	899	1009
Transmission Reliability Margin (TRM)	540	540	540	540	540	540	540	540	540	540	540	540
Total Amount of Requests	0	0	200	200	200	200	200	200	200	200	200	200
Available Transfer Capability (ATC)	491	453	253	253	253	245	245	159	159	159	159	269

5. Conclusion

The request was studied with an assumed deferral period of 11/1/01 to 11/1/02. The previously assigned and identified facilities limit the ATC to zero in the 2001/2002 Winter and 2002 Summer due to the inability to upgrade the thermal constraints as required. Those facilities that have an ATC of zero are given below.

- For the 2001/2002 Winter (12/1/01-4/1/02), the ATC is zero due to the loading of the Tupelo to Tupelo Tap, Pittsburg to Valliant Flowgate; the Philips to South Philips, Summit to East McPherson Flowgate; and the Summit to Exide Junction to Philips 138kV line. Upgrades for these facilities cannot be completed by 12/1/01.
- For the 2002 Summer (6/1/02-10/1/02), the ATC is zero due to the Weleetka 138/69kV Transformer #2, the Roosevelt to Tolk 345kV lines, the Fort Smith 500/161kV Transformer, and the Danville to Magazine REC 161kV line. Upgrades for these facilities cannot be completed by 6/1/02. In addition, Entergy's Webre to Richard Flowgate and Wilbert to Livonia, Webre to Richard Flowgate; limit the ATC to zero.

The Entergy to SPS 100MW reservation is limited to zero ATC due to thermal constraints on one or more facilities, and the time frame of the limitations is such that facilities cannot be upgraded; therefore, the request must be refused.

Appendix A

PSS/E CHOICES IN RUNNING LOAD FLOW PROGRAM AND ACCC

BASE CASES:

Solutions - Fixed slope decoupled Newton-Raphson solution (FDNS)

1. Tap adjustment – Stepping
2. Area interchange control – Tie lines only
3. Var limits – Apply immediately
4. Solution options - Phase shift adjustment
 - Flat start
 - Lock DC taps
 - Lock switched shunts

ACCC CASES:

Solutions – AC contingency checking (ACCC)

1. MW mismatch tolerance –0.5
2. Contingency case rating – Rate B
3. Percent of rating – 100
4. Output code – Summary
5. Min flow change in overload report – 1mw
6. Excl'd cases w/ no overloads form report – YES
7. Exclude interfaces from report – NO
8. Perform voltage limit check – YES
9. Elements in available capacity table – 60000
10. Cutoff threshold for available capacity table – 99999.0
11. Min. contng. case Vltg chng for report – 0.02
12. Sorted output – None

Newton Solution:

1. Tap adjustment – Stepping
2. Area interchange control – Tie lines only
3. Var limits - Apply automatically
4. Solution options - Phase shift adjustment
 - Flat start
 - Lock DC taps
 - Lock switched shunts