



***Feasibility Study
PID 270
50MW Plant***

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Energy Resource Interconnection Service

1. Introduction

This Energy Resource Interconnection Service (ERIS) is based on the Customer's request for 50MW interconnection on Entergy's transmission system between the Wisner and Red Gum substations located at PID 270 substation. The proposed commercial operation date of the project is December 31, 2013. The objective of this study is to assess the reliability impact of the new facility on the Entergy transmission system as well as its effects on the system's existing short circuit current capability. It is also intended to determine whether the transmission system meets standards established by NERC Reliability Standards and Entergy's planning guidelines when the plant is connected to Entergy's transmission system. If not, transmission improvements will be identified.

The Feasibility Study process required a load flow analysis to determine if the existing transmission lines are adequate to handle the full output from the plant for simulated transfers to adjacent control areas. A short circuit analysis is performed to determine if the generation would cause the available fault current to surpass the fault duty of existing equipment within the Entergy transmission system.

This ERIS Feasibility Study was based on information provided by the Customer and assumptions made by Entergy's Independent Coordinator of Transmission (ICT) planning group and Entergy's Transmission Technical System Planning group. All supplied information and assumptions are documented in this report. If the actual equipment installed is different from the supplied information or the assumptions made, the results outlined in this report are subject to change.

It was determined that there are no Entergy Transmission System upgrades required for this ERIS request. The estimated cost of interconnection facilities is \$7,500,000 which covers the cost of the construction of a new 115kV 3-breaker ring bus substation at the Customer's point of interconnection.

The load flow results from the ERIS study are for information only. ERIS does not in and of itself convey any transmission service.

2. Short circuit Analysis/Breaker Rating Analysis

2.1 Model Information

The short circuit analysis was performed on the Entergy system short circuit model using ASPEN software. This model includes all generators interconnected to the Entergy system or interconnected to an adjacent system and having an impact on this interconnection request, IPP's with signed IOAs, and approved future transmission projects on the Entergy transmission system.

2.2 Short Circuit Analysis

The method used to determine if any short circuit problems would be caused by the addition of the PID-270 generation is as follows:

Three phase and single phase to ground faults were simulated on the Entergy base case short circuit model and the worst case short circuit level was determined at each station. The PID-270 generator was then modeled in the base case to generate a revised short circuit model. The base case short circuit results were

then compared with the results from the revised model to identify any breakers that were under-rated as a result of additional short circuit contribution from PID-270 generation. Any breakers identified to be upgraded through this comparison are mandatory upgrades.

2.3 Analysis Results

The results of the short circuit analysis indicated that the additional generation due to PID 270 generation caused no increase in short circuit current such that they exceeded the fault interrupting capability of the high voltage circuit breakers within the vicinity of the PID 270 plant **with and without priors**. Priors included are: 221, 231, 238, 240, 244, 247, 250, 251, 252, 253, 254, 255, 256, 257, 259, 260, 261, 266, 268, and 270.

2.4 Problem Resolution

As a result of the short circuit analysis findings, no resolution was required.

3. Load Flow Analysis

3.1 Model Information

The load flow analysis was performed based on the projected 2014 summer peak load flow model. Approved future transmission projects in the 2011-2013 ICT Base Plan were used in the models for scenarios three and four. These upgrades can be found on Entergy's OASIS web page <http://www.oatioasis.com/EES/EESDocs/Disclaimer.html>. The loads were scaled based on the forecasted loads for the year. All firm power transactions between Entergy and its neighboring control areas were modeled for the year 2014 excluding short-term firm transactions on the same transmission interface. An economic dispatch was carried out on Entergy generating units after the scaling of load and modeling of transactions. The PID 270 generation interconnection point was modeled on the existing Wisner-Red Gum 115kV transmission line. These associated facilities were then modeled in the case to build a revised case for the load flow analysis. Transfers were simulated between thirteen (13) control areas and Entergy using the requesting generator as the source and adjacent control area as sink.

This study considered the following four scenarios:

Scenario No.	Approved Future Transmission Projects	Pending Transmission Service & Study Requests
1	Not Included	Not Included
2	Not Included	Included
3	Included	Not Included
4	Included	Included

The generator step-up transformers, generators, and interconnecting lines were modeled according to the information provided by the customer.

3.2 Load Flow Analysis

3.2.1 Load Flow Analysis:

The load flow analysis was performed as a DC analysis using PSS/E and PSS/MUST software by Power Technologies Incorporated (PTI). A Transmission Reliability Margin (TRM) that effectively reduced line ratings by 5% was used in the

model. With the above assumptions implemented, the First Contingency Incremental Transfer Capability (FCITC) values are calculated. The FCITC depends on various factors – the system load, generation dispatch, scheduled maintenance of equipment, and the configuration of the interconnected system and the power flows in effect among the interconnected systems. The FCITC is also dependent on previously confirmed firm reservations on the interface. The details of each scenario list each limiting element, the contingency for the limiting element, and the Available Transfer Capacity (ATC). The ATC is equal to the FCITC.

3.2.2 Performance Criteria

The criteria for overload violations are as follows:

A) With All Lines in Service

- The MVA flow in any branch should not exceed Rate A (normal rating).

B) Under Contingencies

- The MVA flow through any facility should not exceed 95% Rate A.

3.2.3 Analysis Results

It was determined there are no Entergy Transmission System upgrades required for this ERIS request. Summary of the analysis results are documented in Table 3.2.1 for each scenario. Detailed results for each of the 13 studied interfaces for Scenarios 1, 2, 3 and 4 are included in Tables 3.2.2 - 3.2.5.

Table 3.2.1: Summary of Results for PID 270 – ERIS Load Flow Study

Interface		Summer Peak Case Used	FCITC Available for Scenario 1	FCITC Available for Scenario 2	FCITC Available for Scenario 3	FCITC Available for Scenario 4
AECI	Associated Electric Cooperative, Inc.	2014	-1125	50	-1306	-483
AEPW	American Electric Power West	2014	-531	-3225	-632	-1079
AMRN	Ameren Transmission	2014	-1223	50	-72	-414
CLEC	CLECO	2014	-516	50	-66	-423
EES	Entergy	2014	50	-1890	-91	-1199
EMDE	Empire District Electric Co	2014	-944	50	-1103	-559
Lafa	Lafayette Utilities System	2014	-405	-913	-82	-517
LAGN	Louisiana Generating, LLC	2014	50	50	-103	-294
LEPA	Louisiana Energy & Power Authority	2014	-585	-892	-2039	-2660
OKGE	Oklahoma Gas & Electric Company	2014	-797	50	-937	-641
SMEPA	South Mississippi Electric Power Assoc.	2014	-889	-1370	-746	-1255
SOCO	Southern Company	2014	50	50	-94	-266
SPA	Southwest Power Administration	2014	-1015	50	-1181	-590
TVA	Tennessee Valley Authority	2014	50	50	-83	-315

4. Facilities at the Point of Interconnection

The Interconnection Customer's designated Point of Interconnection (POI) is a new 115kV substation that will be constructed and cut-in on Entergy's Wisner-Red Gum 115kV transmission line. The interconnection customer is responsible for constructing all facilities needed to deliver generation to the POI. The estimated cost for a 115kV, 3 element ring bus configuration substation is \$7.5 Million. This cost is based on parametric estimating techniques for a "typical" site. Cost may significantly change based on specific project parameters that are not known at this time. Costs specific to this interconnection will be developed during the Facility Study.

TABLE 3.2.2: DETAILS OF SCENARIO 1 RESULTS: (WITHOUT FUTURE PROJECTS AND WITHOUT PENDING TRANSMISSION SERVICE & STUDY REQUEST)

Limiting Elements	Est. Cost	AECI	AEPW	AMRN	CLECO	EES	EMDE	Lafa	LAGN	LEPA	OKGE	SMEPA	SOCO	SPA	TVA
Bonin - Cecelia 138kV	11,760,000									X					
Brookhaven - Brookhaven South 115kV	3,360,000											X			
Brookhaven South - Franklin 115kV	10,920,000											X			
Carroll 230/138kV transformer (CLECO)	Other Ownership		X				X				X			X	
Champagne - Plaisance (CLECO) 138kV	10,920,000							X		X					
Coughlin - Plaisance 138kV (CLECO)	Other Ownership							X		X					
French Settlement - Sorrento 230kV	7,200,000											X			
Greenwood - Humphrey 115kV	840,000				X			X		X					
Greenwood - Terrebone 115kV	8,400,000				X			X		X					
Habetz - Richard 138kV	Included in 2011 ICT Base Plan							X		X					
International Paper - Mansfield 138kV (CLECO)	Other Ownership	X	X	X			X				X			X	
International Paper - Wallake 138kV (CLECO)	Other Ownership	X	X	X			X				X			X	
Jackson Miami - Jackson Monument Street 115kV	2,520,000											X			
North Crowley - Scott1 138kV	21,250,000							X		X					
Rapidies (CLECO) - Rodemacher (CLECO) 230kV	Other Ownership							X							

Limiting Elements	Est. Cost	AECI	AEPW	AMRN	CLECO	EES	EMDE	LAFa	LAGN	LEPA	OKGE	SMEPA	SOCO	SPA	TVA
Ray Braswell - West Jackson 115kV	5,040,000											X			
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Committed to by others											X			
Scott1 - Bonin 138kV	4,200,000							X							
Semere - Scott2 138kV	13,440,000							X		X					
Toledo - VP Tap 138kV	Included in 2011 ICT Base Plan		X												

TABLE 3.2.3: DETAILS OF SCENARIO 2 RESULTS: (WITHOUT FUTURE PROJECTS AND WITH PENDING TRANSMISSION SERVICE & STUDY REQUEST)

Limiting Elements	Est. Cost	AECI	AEPW	AMRN	CLECO	EES	EMDE	LAFA	LAGN	LEPA	OKGE	SMEPA	SOCO	SPA	TVA
Bonin - Cecelia 138kV	11,760,000									X					
Brookhaven - Brookhaven South 115kV	3,360,000											X			
Brookhaven - Mallalieu (MEPA) 115kV	5,737,200											X			
Brookhaven South - Franklin 115kV	10,920,000											X			
Champagne - Plaisance (CLECO) 138kV	10,920,000							X		X					
Coughlin - Plaisance 138kV (CLECO)	Other Ownership							X		X					
Cypress 500/138kV transformer 1	18,770,000		X			X									
Florence - South Jackson 115kV - Supplemental Upgrade	TBD											X			
French Settlement - Sorrento 230kV	7,200,000											X			
Habetz - Richard 138kV	Included in 2011 ICT Base Plan							X		X					
Hartburg - Inland Orange 230kV	Included in 2011 ICT Base Plan		X			X									
Hartburg - Inland Orange 230kV - Supplemental Upgrade	Committed to by others		X			X									

Limiting Elements	Est. Cost	AECI	AEPW	AMRN	CLECO	EES	EMDE	LAFa	LAGN	LEPA	OKGE	SMEPA	SOCO	SPA	TVA
Helbig - McLewis 230kV	Included in 2011 ICT Base Plan		X			X									
Inland - McLewis 230kV	Included in 2011 ICT Base Plan		X			X									
Inland - McLewis 230kV - Supplemental Upgrade	Committed to by others		X			X									
Jackson Miami - Jackson Monument Street 115kV	2,520,000											X			
Jackson Miami - Rex Brown 115kV	1,680,000											X			
North Crowley - Scott1 138kV	14,280,000							X		X					
Rapidies (CLECO) - Rodemacher (CLECO) 230kV	Other Ownership							X							
Ray Braswell - West Jackson 115kV	5,040,000											X			
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Committed to by others											X			
Scott1 - Bonin 138kV	4,200,000							X							
Semere - Scott2 138kV	13,440,000							X		X					

TABLE 3.2.4: DETAILS OF SCENARIO 3 RESULTS: (WITH FUTURE PROJECTS AND WITHOUT PENDING TRANSMISSION SERVICE & STUDY REQUEST)

Limiting Element	Est. Cost	AECI	AEPW	AMRN	CLECO	EES	EMDE	Lafa	Lagn	LEPA	OKGE	SMEPA	SOCO	SPA	TVA
Brookhaven - Brookhaven South 115kV	3,360,000											X			
Brookhaven South - Franklin 115kV	10,920,000											X			
Carroll 230/138kV transformer (CLECO)	Other Ownership		X				X				X			X	
Downsville - Ruston East 115kV	7,560,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X
International Paper - Mansfield 138kV (CLECO)	15,960,000	X	X				X				X			X	
International Paper - Wallake 138kV (CLECO)	15,120,000	X	X				X				X			X	
Jackson Miami - Jackson Monument Street 115kV	2,520,000											X			
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	TBD	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Ray Braswell - West Jackson 115kV	5,040,000											X			
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Committed to by others											X			
Rilla - Frostkraft 115kV - Supplemental Upgrade	TBD	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Willow Glen - Evergreen 230kV ckt 2	3,600,000									X					

TABLE 3.2.5: DETAILS OF SCENARIO 4 RESULTS: (WITH FUTURE PROJECTS AND WITH PENDING TRANSMISSION SERVICE & STUDY REQUEST)

Limiting Element	Est. Cost	AECI	AEPW	AMRN	CLECO	EES	EMDE	LAF A	LAGN	LEPA	OKGE	SMEPA	SOCO	SPA	TVA
Brookhaven - Brookhaven South 115kV	3,360,000											X			
Brookhaven South - Franklin 115kV	10,920,000											X			
Champagne - Plaisance (CLECO) 138kV	10,920,000							X		X					
Coughlin - Plaisance 138kV (CLECO)	Other Ownership							X		X					
Cypress 500/138kV transformer 1	18,770,000		X			X									
Florence - South Jackson 115kV - Supplemental Upgrade	TBD											X	X		
Hartburg - Inland Orange 230kV - Supplemental Upgrade	Committed to by others					X									
Helbig - McLewis 230kV	Included in 2011 ICT Base Plan					X									
Inland - McLewis 230kV - Supplemental Upgrade	Committed to by others					X									
Jackson Miami - Jackson Monument Street 115kV	2,520,000											X			
Jackson Miami - Rex Brown 115kV	1,680,000											X			
Rapidies (CLECO) - Rodemacher (CLECO) 230kV	Other Ownership							X							

Limiting Element	Est. Cost	AECI	AEPW	AMRN	CLECO	EES	EMDE	Lafa	LAGN	LEPA	OKGE	SMEPA	SOCO	SPA	TVA
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	TBD	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Ray Braswell - West Jackson 115kV	5,040,000											X			
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Committed to by others											X			
Willow Glen - Evergreen 230kV ckt 2	3,600,000									X					

APPENDIX A: Prior Generation Interconnection and Transmission Service Requests in Study Models

Prior Generation Interconnection NRIS requests that were included in this study:

PID	Substation	MW	In Service Date
PID 259	North Bastrop 115kV	36	12/31/2013

Prior transmission service requests that were included in this study:

OASIS #		PSE	MW	Begin	End
74597193		NRG Power Marketing	300	1/1/2013	1/1/2018
74597198		NRG Power Marketing	300	1/1/2013	1/1/2018
74728369		Brazos Electric Cooperative	100	1/1/2012	1/1/2017
74728395	Not modeled	Brazos Electric Cooperative	100	1/1/2012	1/1/2017
74728400	Not modeled	Brazos Electric Cooperative	100	1/1/2012	1/1/2017
74728415	Not modeled	Brazos Electric Cooperative	100	1/1/2012	1/1/2017
74728420	Not modeled	Brazos Electric Cooperative	100	1/1/2012	1/1/2017
74799834		Cargill Power Markets	101	7/1/2012	7/1/2017
74799836		Cargill Power Markets	101	7/1/2012	7/1/2017
74799837		Cargill Power Markets	101	7/1/2012	7/1/2017
74799848		Cargill Power Markets	101	7/1/2013	7/1/2018
74799851		Cargill Power Markets	101	7/1/2013	7/1/2018
74799853		Cargill Power Markets	101	7/1/2013	7/1/2018
74846159		AEPM	65	1/1/2015	1/1/2020
74899933		Entergy Services (SPO)	322	2/1/2011	2/1/2041
74899972		Entergy Services (SPO)	1	1/1/2015	1/1/2045
74899974		Entergy Services (SPO)	1	1/1/2015	1/1/2045
74899976		Entergy Services (SPO)	1	1/1/2015	1/1/2045
74899980		Entergy Services (SPO)	584	1/1/2015	1/1/2045
74899988		Entergy Services (SPO)	1	6/1/2012	6/1/2042
74899989		Entergy Services (SPO)	485	6/1/2012	6/1/2042
74899996		Entergy Services (SPO)	450	6/1/2012	6/1/2042
74900000		Entergy Services (SPO)	620	6/1/2012	6/1/2042
74900014		Entergy Services (SPO)	35	6/1/2012	6/1/2042
74900016		Entergy Services (SPO)	20	6/1/2012	6/1/2042
75009400		Entergy Services (SPO)	1	1/1/2012	1/1/2042
75009407		Entergy Services (SPO)	1	1/1/2012	1/1/2042
75206836		ETEC	125	1/1/2015	2/1/2020

APPENDIX B: Detailed Results for Scenario 1 - 2014

AECI

Limiting Element	Contingency Element	ATC
International Paper - Mansfield 138kV (CLECO)	Dolet Hills - S.W. Shreevport 345kV (CLECO)	-1125
International Paper - Wallake 138kV (CLECO)	Dolet Hills - S.W. Shreevport 345kV (CLECO)	-394

AEPW

Limiting Element	Contingency Element	ATC
International Paper - Mansfield 138kV (CLECO)	Dolet Hills - S.W. Shreevport 345kV (CLECO)	-531
Carroll 230/138kV transformer (CLECO)	Dolet Hills - S.W. Shreevport 345kV (CLECO)	-332
International Paper - Wallake 138kV (CLECO)	Dolet Hills - S.W. Shreevport 345kV (CLECO)	-186
Toledo - VP Tap 138kV	Colfax - Rodemacher 230kV	-65

AMRN

Limiting Element	Contingency Element	ATC
International Paper - Mansfield 138kV (CLECO)	Dolet Hills - S.W. Shreevport 345kV (CLECO)	-1223
International Paper - Wallake 138kV (CLECO)	Dolet Hills - S.W. Shreevport 345kV (CLECO)	-428

CLECO

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	-516
Greenwood - Humphrey 115kV	Webre - Wells 500kV	27

EES

Limiting Element	Contingency Element	ATC
NONE	NONE	50

EMDE

Limiting Element	Contingency Element	ATC
International Paper - Mansfield 138kV (CLECO)	Dolet Hills - S.W. Shreevport 345kV (CLECO)	-944
Carroll 230/138kV transformer (CLECO)	Dolet Hills - S.W. Shreevport 345kV (CLECO)	-502
International Paper - Wallake 138kV (CLECO)	Dolet Hills - S.W. Shreevport 345kV (CLECO)	-330

Lafa

Limiting Element	Contingency Element	ATC
Coughlin - Plaisance 138kV (CLECO)	Cocodrie (CLECO) - Vil Plat (CLECO) 230kV	-405
Champagne - Plaisance (CLECO) 138kV	Cocodrie (CLECO) - Vil Plat (CLECO) 230kV	-345
Rapidies (CLECO) - Rodemacher (CLECO) 230kV	Rodemacher (CLECO) - Sherwood (CLECO) 230kV	-311
Greenwood - Terrebone 115kV	Webre - Wells 500kV	-301
Coughlin - Plaisance 138kV (CLECO)	Vil Plat (CLECO) - West Fork (CLECO) 230kV	-286
Champagne - Plaisance (CLECO) 138kV	Vil Plat (CLECO) - West Fork (CLECO) 230kV	-226
Semere - Scott2 138kV	Cocodrie (CLECO) - Vil Plat (CLECO) 230kV	-195

Limiting Element	Contingency Element	ATC
Semere - Scott2 138kV	Vil Plat (CLECO) - West Fork (CLECO) 230kV	-158
Habetz - Richard 138kV	Cocodrie (CLECO) - Vil Plat (CLECO) 230kV	-113
Habetz - Richard 138kV	Vil Plat (CLECO) - West Fork (CLECO) 230kV	-74
Semere - Scott2 138kV	Wells 500/230kV transformer	-8
North Crowley - Scott1 138kV	Cocodrie (CLECO) - Vil Plat (CLECO) 230kV	1
Greenwood - Humphrey 115kV	Webre - Wells 500kV	16
Scott1 - Bonin 138kV	Cocodrie (CLECO) - Vil Plat (CLECO) 230kV	28
North Crowley - Scott1 138kV	Vil Plat (CLECO) - West Fork (CLECO) 230kV	32

LAGN

Limiting Element	Contingency Element	ATC
NONE	NONE	50

LEPA

Limiting Element	Contingency Element	ATC
Coughlin - Plaisance 138kV (CLECO)	Cocodrie (CLECO) - Vil Plat (CLECO) 230kV	-585
Semere - Scott2 138kV	Cocodrie (CLECO) - Vil Plat (CLECO) 230kV	-542
Champagne - Plaisance (CLECO) 138kV	Cocodrie (CLECO) - Vil Plat (CLECO) 230kV	-498
Semere - Scott2 138kV	Vil Plat (CLECO) - West Fork (CLECO) 230kV	-439
Coughlin - Plaisance 138kV (CLECO)	Vil Plat (CLECO) - West Fork (CLECO) 230kV	-413
Habetz - Richard 138kV	Cocodrie (CLECO) - Vil Plat (CLECO) 230kV	-383
Greenwood - Terrebone 115kV	Webre - Wells 500kV	-337
Champagne - Plaisance (CLECO) 138kV	Vil Plat (CLECO) - West Fork (CLECO) 230kV	-326
Habetz - Richard 138kV	Vil Plat (CLECO) - West Fork (CLECO) 230kV	-251
Bonin - Cecelia 138kV	Colonial Academy - Richard 138kV	-104
North Crowley - Scott1 138kV	Cocodrie (CLECO) - Vil Plat (CLECO) 230kV	3
Greenwood - Humphrey 115kV	Webre - Wells 500kV	18

OKGE

Limiting Element	Contingency Element	ATC
International Paper - Mansfield 138kV (CLECO)	Dolet Hills - S.W. Shreevport 345kV (CLECO)	-797
Carroll 230/138kV transformer (CLECO)	Dolet Hills - S.W. Shreevport 345kV (CLECO)	-444
International Paper - Wallake 138kV (CLECO)	Dolet Hills - S.W. Shreevport 345kV (CLECO)	-279

SMEPA

Limiting Element	Contingency Element	ATC
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Lakeover 500/115kV transformer	*
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Ray Braswell 500/115kV transformer 1	*
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Ray Braswell 500/230kV transformer 1	*
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Lakeover - Rex Brown E 115kV ckt 2	*
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Lakeover - Rex Brown C 115kV ckt 1	*
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Vicksburg North - South Redwood 115kV	*

Limiting Element	Contingency Element	ATC
Supplemental Upgrade		
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Baxter Wilson - South East Vicksburg 115kV	*
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Bovina - South East Vicksburg 115kV	*
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Redwood - South Redwood 115kV	*
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Franklin - Grand Gulf 500kV	*
Brookhaven South - Franklin 115kV	Franklin - Vaughn 115kV	-889
Jackson Miami - Jackson Monument Street 115kV	South Jackson 230/115kV transformer 1	-880
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	-822
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	-822
Brookhaven South - Franklin 115kV	CALIFRN - Vaughn 115kV	-661
Ray Braswell - West Jackson 115kV	South Jackson 230/115kV transformer 1	-587
Brookhaven South - Franklin 115kV	CALIFRN - West Brookhaven 115kV	-534
Brookhaven - Brookhaven South 115kV	Franklin - Vaughn 115kV	-429
Brookhaven South - Franklin 115kV	Brookhaven - West Brookhaven 115kV	-266
Brookhaven - Brookhaven South 115kV	CALIFRN - Vaughn 115kV	-200
Jackson Miami - Jackson Monument Street 115kV	Jackson Forrest Hill - Ray Braswell 115kV	-192
Jackson Miami - Jackson Monument Street 115kV	Jackson HICO - North Jackson 115kV	-169
Jackson Miami - Jackson Monument Street 115kV	Jackson HICO - Rex Brown E 115kV	-169
Brookhaven - Brookhaven South 115kV	CALIFRN - West Brookhaven 115kV	-73
Jackson Miami - Jackson Monument Street 115kV	Jackson Forrest Hill - Southwest Jackson 115kV	-36
Jackson Miami - Jackson Monument Street 115kV	Klean - Jackson Northeast 115kV	4
Jackson Miami - Jackson Monument Street 115kV	Ray Braswell - West Jackson 115kV	41

SOCO

Limiting Element	Contingency Element	ATC
NONE	NONE	50

SPA

Limiting Element	Contingency Element	ATC
International Paper - Mansfield 138kV (CLECO)	Dolet Hills - S.W. Shreevport 345kV (CLECO)	-1015
Carroll 230/138kV transformer (CLECO)	Dolet Hills - S.W. Shreevport 345kV (CLECO)	-523
International Paper - Wallake 138kV (CLECO)	Dolet Hills - S.W. Shreevport 345kV (CLECO)	-355

TVA

Limiting Element	Contingency Element	ATC
NONE	NONE	50

APPENDIX C: Detailed Results for Scenario 2 - 2014

AECI

Limiting Element	Contingency Element	ATC
NONE	NONE	50

AEPW

Limiting Element	Contingency Element	ATC
Inland - McLewis 230kV	Cypress - Hartburg 500kV	-3225
Hartburg - Inland Orange 230kV - Supplemental Upgrade	Cypress - Hartburg 500kV	-2672
Helbig - McLewis 230kV	Cypress - Hartburg 500kV	-2637
Hartburg - Inland Orange 230kV	Cypress - Hartburg 500kV	-2550
Inland - McLewis 230kV - Supplemental Upgrade	Cypress - Hartburg 500kV	-1885
Cypress 500/138kV transformer 1	Cypress 500/230kV transformer	-771

AMRN

Limiting Element	Contingency Element	ATC
NONE	NONE	50

CLECO

Limiting Element	Contingency Element	ATC
NONE	NONE	50

EES

Limiting Element	Contingency Element	ATC
Inland - McLewis 230kV	Cypress - Hartburg 500kV	-1890
Helbig - McLewis 230kV	Cypress - Hartburg 500kV	-1564
Hartburg - Inland Orange 230kV - Supplemental Upgrade	Cypress - Hartburg 500kV	-1541
Hartburg - Inland Orange 230kV	Cypress - Hartburg 500kV	-1471
Inland - McLewis 230kV - Supplemental Upgrade	Cypress - Hartburg 500kV	-1105
Cypress 500/138kV transformer 1	Cypress 500/230kV transformer	-525

EMDE

Limiting Element	Contingency Element	ATC
NONE	NONE	50

Lafa

Limiting Element	Contingency Element	ATC
Rapidies (CLECO) - Rodemacher (CLECO) 230kV	Rodemacher (CLECO) - Sherwood (CLECO) 230kV	-913
Coughlin - Plaisance 138kV (CLECO)	Cocodrie (CLECO) - Vil Plat (CLECO) 230kV	-618
Champagne - Plaisance (CLECO) 138kV	Cocodrie (CLECO) - Vil Plat (CLECO) 230kV	-558
Coughlin - Plaisance 138kV (CLECO)	Vil Plat (CLECO) - West Fork (CLECO) 230kV	-499
Champagne - Plaisance (CLECO) 138kV	Vil Plat (CLECO) - West Fork (CLECO) 230kV	-439

Limiting Element	Contingency Element	ATC
Semere - Scott2 138kV	Cocodrie (CLECO) - Vil Plat (CLECO) 230kV	-253
Semere - Scott2 138kV	Vil Plat (CLECO) - West Fork (CLECO) 230kV	-216
Habetz - Richard 138kV	Cocodrie (CLECO) - Vil Plat (CLECO) 230kV	-161
Habetz - Richard 138kV	Vil Plat (CLECO) - West Fork (CLECO) 230kV	-122
North Crowley - Scott1 138kV	Cocodrie (CLECO) - Vil Plat (CLECO) 230kV	-57
Semere - Scott2 138kV	Wells 500/230kV transformer	-46
North Crowley - Scott1 138kV	Vil Plat (CLECO) - West Fork (CLECO) 230kV	-26
Scott1 - Bonin 138kV	Cocodrie (CLECO) - Vil Plat (CLECO) 230kV	17

LAGN

Limiting Element	Contingency Element	ATC
NONE	NONE	50

LEPA

Limiting Element	Contingency Element	ATC
Coughlin - Plaisance 138kV (CLECO)	Cocodrie (CLECO) - Vil Plat (CLECO) 230kV	-892
Champagne - Plaisance (CLECO) 138kV	Cocodrie (CLECO) - Vil Plat (CLECO) 230kV	-806
Coughlin - Plaisance 138kV (CLECO)	Vil Plat (CLECO) - West Fork (CLECO) 230kV	-720
Semere - Scott2 138kV	Cocodrie (CLECO) - Vil Plat (CLECO) 230kV	-702
Champagne - Plaisance (CLECO) 138kV	Vil Plat (CLECO) - West Fork (CLECO) 230kV	-634
Semere - Scott2 138kV	Vil Plat (CLECO) - West Fork (CLECO) 230kV	-599
Habetz - Richard 138kV	Cocodrie (CLECO) - Vil Plat (CLECO) 230kV	-546
Willow Glen - Evergreen 230kV ckt 2	Willow Glen - Evergreen 230kV ckt 1	-454
Habetz - Richard 138kV	Vil Plat (CLECO) - West Fork (CLECO) 230kV	-414
North Crowley - Scott1 138kV	Cocodrie (CLECO) - Vil Plat (CLECO) 230kV	-204
Bonin - Cecelia 138kV	Colonial Academy - Richard 138kV	-203
North Crowley - Scott1 138kV	Vil Plat (CLECO) - West Fork (CLECO) 230kV	-92
Bonin - Cecelia 138kV	Acadia GSU - Colonial Academy 138kV	-40

OKGE

Limiting Element	Contingency Element	ATC
NONE	NONE	50

SMEPA

Limiting Element	Contingency Element	ATC
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Lakeover 500/115kV transformer	*
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Ray Braswell 500/115kV transformer 1	*
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Keo - West Memphis EHV 500kV	*
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Franklin - Grand Gulf 500kV	*
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Vicksburg North - South Redwood 115kV	*
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Ray Braswell 500/230kV transformer 1	*

Limiting Element	Contingency Element	ATC
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Franklin - Vaughn 115kV	*
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Brookhaven South - Franklin 115kV	*
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Attala - Conehoma 115kV	*
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Baxter Wilson - South East Vicksburg 115kV	*
Jackson Miami - Jackson Monument Street 115kV	South Jackson 230/115kV transformer 1	-1370
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	-896
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	-896
Brookhaven South - Franklin 115kV	Franklin - Vaughn 115kV	-764
Jackson Miami - Jackson Monument Street 115kV	Jackson HICO - Rex Brown E 115kV	-593
Jackson Miami - Jackson Monument Street 115kV	Jackson HICO - North Jackson 115kV	-593
Ray Braswell - West Jackson 115kV	South Jackson 230/115kV transformer 1	-585
Jackson Miami - Jackson Monument Street 115kV	Jackson Forrest Hill - Ray Braswell 115kV	-577
Brookhaven South - Franklin 115kV	CALIFRN - Vaughn 115kV	-536
Jackson Miami - Jackson Monument Street 115kV	Jackson Forrest Hill - Southwest Jackson 115kV	-421
Brookhaven South - Franklin 115kV	CALIFRN - West Brookhaven 115kV	-409
Jackson Miami - Jackson Monument Street 115kV	Klean - Jackson Northeast 115kV	-387
Jackson Miami - Jackson Monument Street 115kV	Klean - Flowood 115kV	-323
Jackson Miami - Jackson Monument Street 115kV	North Jackson - Jackson Canton Road 115kV	-314
Brookhaven - Brookhaven South 115kV	Franklin - Vaughn 115kV	-303
Jackson Miami - Jackson Monument Street 115kV	Ray Braswell - West Jackson 115kV	-279
Brookhaven - Mallalieu (MEPA) 115kV	Bogalusa - Adams Creek 500/230kV transformer	-170
Brookhaven - Mallalieu (MEPA) 115kV	Bogalusa - Franklin 500kV	-170
Brookhaven South - Franklin 115kV	Brookhaven - West Brookhaven 115kV	-141
Jackson Miami - Rex Brown 115kV	South Jackson 230/115kV transformer 1	-104
Brookhaven - Brookhaven South 115kV	CALIFRN - Vaughn 115kV	-75
Florence - South Jackson 115kV - Supplemental Upgrade	Bogalusa - Franklin 500kV	-3
Florence - South Jackson 115kV - Supplemental Upgrade	Bogalusa - Adams Creek 500/230kV transformer	-3

SOCO

Limiting Element	Contingency Element	ATC
NONE	NONE	50

SPA

Limiting Element	Contingency Element	ATC
NONE	NONE	50

TVA

Limiting Element	Contingency Element	ATC
NONE	NONE	50

APPENDIX D: Detailed Results for Scenario 3 - 2014

AECI

Limiting Element	Contingency Element	ATC
International Paper - Mansfield 138kV (CLECO)	Dolet Hills - S.W. Shreevport 345kV (CLECO)	-1306
International Paper - Wallake 138kV (CLECO)	Dolet Hills - S.W. Shreevport 345kV (CLECO)	-540
Downsville - Ruston East 115kV	Eldorado EHV - Sterlington 500kV	-68
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	Franklin - Grand Gulf 500kV	-63
Rilla - Frostkraft 115kV - Supplemental Upgrade	Sterlington - Walnut Grove East 115kV	-20

AEPW

Limiting Element	Contingency Element	ATC
International Paper - Mansfield 138kV (CLECO)	Dolet Hills - S.W. Shreevport 345kV (CLECO)	-632
Carroll 230/138kV transformer (CLECO)	Dolet Hills - S.W. Shreevport 345kV (CLECO)	-415
International Paper - Wallake 138kV (CLECO)	Dolet Hills - S.W. Shreevport 345kV (CLECO)	-261
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	Franklin - Grand Gulf 500kV	-97
Downsville - Ruston East 115kV	Eldorado EHV - Sterlington 500kV	-58
Rilla - Frostkraft 115kV - Supplemental Upgrade	Sterlington - Walnut Grove East 115kV	-20

AMRN

Limiting Element	Contingency Element	ATC
Downsville - Ruston East 115kV	Eldorado EHV - Sterlington 500kV	-72
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	Franklin - Grand Gulf 500kV	-54
Rilla - Frostkraft 115kV - Supplemental Upgrade	Sterlington - Walnut Grove East 115kV	-20

CLECO

Limiting Element	Contingency Element	ATC
Downsville - Ruston East 115kV	Eldorado EHV - Sterlington 500kV	-66
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	Franklin - Grand Gulf 500kV	-55
Rilla - Frostkraft 115kV - Supplemental Upgrade	Sterlington - Walnut Grove East 115kV	-24

EES

Limiting Element	Contingency Element	ATC
Downsville - Ruston East 115kV	Eldorado EHV - Sterlington 500kV	-91
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	Franklin - Grand Gulf 500kV	-42
Rilla - Frostkraft 115kV - Supplemental Upgrade	Sterlington - Walnut Grove East 115kV	-20
Rilla - Frostkraft 115kV - Supplemental Upgrade	Lamkin - Walnut Grove East 115kV	49

EMDE

Limiting Element	Contingency Element	ATC
International Paper - Mansfield 138kV (CLECO)	Dolet Hills - S.W. Shreevport 345kV (CLECO)	-1103
Carroll 230/138kV transformer (CLECO)	Dolet Hills - S.W. Shreevport 345kV (CLECO)	-635
International Paper - Wallake 138kV (CLECO)	Dolet Hills - S.W. Shreevport 345kV (CLECO)	-456
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	Franklin - Grand Gulf 500kV	-72
Downsville - Ruston East 115kV	Eldorado EHV - Sterlington 500kV	-65
Rilla - Frostkraft 115kV - Supplemental Upgrade	Sterlington - Walnut Grove East 115kV	-20

Lafa

Limiting Element	Contingency Element	ATC
Downsville - Ruston East 115kV	Eldorado EHV - Sterlington 500kV	-82
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	Franklin - Grand Gulf 500kV	-36
Rilla - Frostkraft 115kV - Supplemental Upgrade	Sterlington - Walnut Grove East 115kV	-22

LAGN

Limiting Element	Contingency Element	ATC
Downsville - Ruston East 115kV	Eldorado EHV - Sterlington 500kV	-103
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	Franklin - Grand Gulf 500kV	-38
Rilla - Frostkraft 115kV - Supplemental Upgrade	Sterlington - Walnut Grove East 115kV	-21

LEPA

Limiting Element	Contingency Element	ATC
Downsville - Ruston East 115kV	Eldorado EHV - Sterlington 500kV	-106
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	Franklin - Grand Gulf 500kV	-29
Rilla - Frostkraft 115kV - Supplemental Upgrade	Sterlington - Walnut Grove East 115kV	-21

OKGE

Limiting Element	Contingency Element	ATC
International Paper - Mansfield 138kV (CLECO)	Dolet Hills - S.W. Shreevport 345kV (CLECO)	-937
Carroll 230/138kV transformer (CLECO)	Dolet Hills - S.W. Shreevport 345kV (CLECO)	-560
International Paper - Wallake 138kV (CLECO)	Dolet Hills - S.W. Shreevport 345kV (CLECO)	-387
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	Franklin - Grand Gulf 500kV	-83
Downsville - Ruston East 115kV	Eldorado EHV - Sterlington 500kV	-62
Rilla - Frostkraft 115kV - Supplemental Upgrade	Sterlington - Walnut Grove East 115kV	-20

SMEPA

Limiting Element	Contingency Element	ATC
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	McAdams - Pickens 230kV	*
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Canton - Pickens 230kV	*

Limiting Element	Contingency Element	ATC
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Canton South - Canton 230kV	*
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Lakeover 500/115kV transformer	*
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Mosel (SMEPA) - Creek (SMEPA) 161kV	*
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	SilverCreekTie(SMEPA) - Prentiss (SMEPA) 161kV	*
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Baxter Wilson 500/115kV transformer 2	*
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Red Gum - PID 270 115kV	*
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Base Case	*
Jackson Miami - Jackson Monument Street 115kV	South Jackson 230/115kV transformer 1	-746
Brookhaven South - Franklin 115kV	Franklin - Vaughn 115kV	-729
Ray Braswell - West Jackson 115kV	South Jackson 230/115kV transformer 1	-625
Brookhaven South - Franklin 115kV	CALIFRN - Vaughn 115kV	-500
Brookhaven South - Franklin 115kV	CALIFRN - West Brookhaven 115kV	-373
Brookhaven - Brookhaven South 115kV	Franklin - Vaughn 115kV	-270
Downsville - Ruston East 115kV	Eldorado EHV - Sterlington 500kV	-131
Brookhaven South - Franklin 115kV	Brookhaven - West Brookhaven 115kV	-105
Brookhaven - Brookhaven South 115kV	CALIFRN - Vaughn 115kV	-42
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	Franklin - Grand Gulf 500kV	-26
Rilla - Frostkraft 115kV - Supplemental Upgrade	Sterlington - Walnut Grove East 115kV	-21
Jackson Miami - Jackson Monument Street 115kV	Jackson Forrest Hill - Ray Braswell 115kV	-2

SOCO

Limiting Element	Contingency Element	ATC
Downsville - Ruston East 115kV	Eldorado EHV - Sterlington 500kV	-94
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	Franklin - Grand Gulf 500kV	-34
Rilla - Frostkraft 115kV - Supplemental Upgrade	Sterlington - Walnut Grove East 115kV	-20

SPA

Limiting Element	Contingency Element	ATC
International Paper - Mansfield 138kV (CLECO)	Dolet Hills - S.W. Shreevport 345kV (CLECO)	-1181
Carroll 230/138kV transformer (CLECO)	Dolet Hills - S.W. Shreevport 345kV (CLECO)	-662
International Paper - Wallake 138kV (CLECO)	Dolet Hills - S.W. Shreevport 345kV (CLECO)	-488
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	Franklin - Grand Gulf 500kV	-77
Downsville - Ruston East 115kV	Eldorado EHV - Sterlington 500kV	-64
Rilla - Frostkraft 115kV - Supplemental Upgrade	Sterlington - Walnut Grove East 115kV	-20

TVA

Limiting Element	Contingency Element	ATC
Downsville - Ruston East 115kV	Eldorado EHV - Sterlington 500kV	-83
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	Franklin - Grand Gulf 500kV	-41
Rilla - Frostkraft 115kV - Supplemental Upgrade	Sterlington - Walnut Grove East 115kV	-20

APPENDIX E: Detailed Results for Scenario 4 - 2014

AECI

Limiting Element	Contingency Element	ATC
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	Franklin - Grand Gulf 500kV	-483

AEPW

Limiting Element	Contingency Element	ATC
Cypress 500/138kV transformer 1	Cypress 500/230kV transformer	-1079
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	Franklin - Grand Gulf 500kV	-745

AMRN

Limiting Element	Contingency Element	ATC
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	Franklin - Grand Gulf 500kV	-414

CLECO

Limiting Element	Contingency Element	ATC
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	Franklin - Grand Gulf 500kV	-423

EES

Limiting Element	Contingency Element	ATC
Hartburg - Inland Orange 230kV - Supplemental Upgrade	Cypress - Hartburg 500kV	-1199
Inland - McLewis 230kV - Supplemental Upgrade	Cypress - Hartburg 500kV	-728
Cypress 500/138kV transformer 1	Cypress 500/230kV transformer	-712
Helbig - McLewis 230kV	Cypress - Hartburg 500kV	-377
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	Franklin - Grand Gulf 500kV	-321

EMDE

Limiting Element	Contingency Element	ATC
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	Franklin - Grand Gulf 500kV	-559

LAF A

Limiting Element	Contingency Element	ATC
Rapides (CLECO) - Rodemacher (CLECO) 230kV	Rodemacher (CLECO) - Sherwood (CLECO) 230kV	-517
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	Franklin - Grand Gulf 500kV	-281
Coughlin - Plaisance 138kV (CLECO)	Cocodrie - Vil Plat 230kV	-211
Champagne - Plaisance (CLECO) 138kV	Cocodrie - Vil Plat 230kV	-131
Coughlin - Plaisance 138kV (CLECO)	Vil Plat - West Fork 230kV	-59
Champagne - Plaisance (CLECO) 138kV	Vil Plat - West Fork 230kV	21

LAGN

Limiting Element	Contingency Element	ATC
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	Franklin - Grand Gulf 500kV	-294

LEPA

Limiting Element	Contingency Element	ATC
Coughlin - Plaisance 138kV (CLECO)	Cocodrie - Vil Plat 230kV	-235
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	Franklin - Grand Gulf 500kV	-224
Champagne - Plaisance (CLECO) 138kV	Cocodrie - Vil Plat 230kV	-146
Coughlin - Plaisance 138kV (CLECO)	Vil Plat - West Fork 230kV	-65
Willow Glen - Evergreen 230kV ckt 2	A.A.C. - Polsky Carville 230kV	-44
Willow Glen - Evergreen 230kV ckt 2	A.A.C. - Licar 230kV	-8
Champagne - Plaisance (CLECO) 138kV	Vil Plat - West Fork 230kV	24

OKGE

Limiting Element	Contingency Element	ATC
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	Franklin - Grand Gulf 500kV	-641

SMEPA

Limiting Element	Contingency Element	ATC
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	McAdams - Pickens 230kV	*
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Lakeover 500/115kV transformer	*
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Canton - Pickens 230kV	*
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Ray Braswell 500/115kV transformer 1	*
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Mosel (SMEPA) - Creek (SMEPA) 161kV	*
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	SilverCreekTie(SMEPA) - Prentiss (SMEPA) 161kV	*
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Canton South - Canton 230kV	*
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Baxter Wilson 500/115kV transformer 2	*
Ray Braswell 500/230kV transformer ckt2 - Supplemental Upgrade	Base Case	*
Jackson Miami - Jackson Monument Street 115kV	South Jackson 230/115kV transformer 1	-1225
Ray Braswell - West Jackson 115kV	South Jackson 230/115kV transformer 1	-628
Brookhaven South - Franklin 115kV	Franklin - Vaughn 115kV	-599
Jackson Miami - Jackson Monument Street 115kV	Jackson Forrest Hill - Ray Braswell 115kV	-389
Brookhaven South - Franklin 115kV	CALIFRN - Vaughn 115kV	-371
Jackson Miami - Jackson Monument Street 115kV	Klean - Jackson Northeast 115kV	-257
Jackson Miami - Jackson Monument Street 115kV	Jackson HICO - Rex Brown E 115kV	-244
Jackson Miami - Jackson Monument Street 115kV	Jackson HICO - North Jackson 115kV	-244

Limiting Element	Contingency Element	ATC
Brookhaven South - Franklin 115kV	CALIFRN - West Brookhaven 115kV	-244
Jackson Miami - Jackson Monument Street 115kV	Jackson Forrest Hill - Southwest Jackson 115kV	-238
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	Franklin - Grand Gulf 500kV	-197
Jackson Miami - Jackson Monument Street 115kV	Klean - Flowood 115kV	-195
Brookhaven - Brookhaven South 115kV	Franklin - Vaughn 115kV	-140
Jackson Miami - Jackson Monument Street 115kV	Ray Braswell - West Jackson 115kV	-113
Florence - South Jackson 115kV - Supplemental Upgrade	Bogalusa - Franklin 500kV	-88
Florence - South Jackson 115kV - Supplemental Upgrade	Bogalusa - Adams Creek 500/230kV transformer	-88
Jackson Miami - Jackson Monument Street 115kV	Lake Castle - Lakeover 230kV	-69
Jackson Miami - Rex Brown 115kV	South Jackson 230/115kV transformer 1	4
Florence - South Jackson 115kV - Supplemental Upgrade	Choctaw MS (TVA) - Clay (TVA) 500kV	8
Brookhaven South - Franklin 115kV	Brookhaven - West Brookhaven 115kV	25

SOCO

Limiting Element	Contingency Element	ATC
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	Franklin - Grand Gulf 500kV	-266
Florence - South Jackson 115kV - Supplemental Upgrade	Choctaw MS (TVA) - Clay (TVA) 500kV	24

SPA

Limiting Element	Contingency Element	ATC
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	Franklin - Grand Gulf 500kV	-590

TVA

Limiting Element	Contingency Element	ATC
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	Franklin - Grand Gulf 500kV	-315