



SPP *Southwest Power Pool*

Feasibility Study for PID 219 100 MW Wind Generation

*Prepared by:
Southwest Power Pool,
Independent Coordinator of Transmission (SPP ICT)
415 North McKinley, Suite 140
Little Rock, AR 72205
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I. Introduction

This Energy Resource Interconnection Service (ERIS) is based on **PID-219 Plant** request for interconnection on Entergy's transmission system between Green Forest South and Harrison West 161kV substations located at Terrapin Creek 161kV substation, 9.82 miles from Harrison West 161kV substation. The objective of this study is to assess the reliability impact of the new facility on the Entergy transmission system with respect to the steady state and transient stability performance of the 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 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 PID-219 Plant and assumptions made by ICT 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.

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

II. Load Flow Analysis

A. Model Information

The load flow analysis was performed based on the projected 2010 and 2015 summer peak load flow model. 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 2010 and 2015 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 proposed 100MW Terrapin Creek generation and the 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 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

Prior transmission service requests that were included in this study:

OASIS #	PSE	MW	Begin	End
1460876	Aquila Networks - MPS	75	3/1/2009	3/1/2029
1460878	Aquila Networks - MPS	75	3/1/2009	3/1/2029
1460879	Aquila Networks - MPS	75	3/1/2009	3/1/2029
1460881	Aquila Networks - MPS	75	3/1/2009	3/1/2029
1460900	Louisiana Energy & Power Authority	116	1/1/2009	1/1/2030
1468285	MidAmerican Energy, Inc.	103	9/1/2007	9/1/2008
1468286	MidAmerican Energy, Inc.	103	9/1/2007	9/1/2008
1468288	MidAmerican Energy, Inc.	103	1/1/2008	1/1/2009
1468289	MidAmerican Energy, Inc.	103	1/1/2008	1/1/2009
1470484	City of West Memphis	20	1/1/2011	1/1/2041

OASIS #	PSE	MW	Begin	End
1477636	Westar Energy Gen & Mtkg	27	6/1/2010	6/1/2040
1477639	Westar Energy Gen & Mtkg	27	6/1/2010	6/1/2011
1478781	Entergy Services, Inc. (EMO)	804	1/1/2008	1/1/2058
1481059	Constellation Energy Group	60	2/1/2011	2/1/2030
1481111	City of Conway	50	2/1/2011	2/1/2046
1481119	Constellation Energy Group	30	2/1/2011	2/1/2030
1481235	Louisiana Energy & Power Authority	50	2/1/2011	2/1/2016
1481438	NRG Power Marketing	20	2/1/2011	2/1/2021
1483241	NRG Power Marketing	103	1/1/2010	1/1/2020
1483243	NRG Power Marketing	206	1/1/2010	1/1/2020
1483244	NRG Power Marketing	309	1/1/2010	1/1/2020
1520043	Municipal Energy Agency of Miss	20	1/1/2011	1/1/2026
1543292	Constellation Energy Group	215	4/1/2009	4/1/2010
1543616	CLECO Power Marketing	17	1/1/2009	1/1/2011
1543621	CLECO Power Marketing	162	1/1/2010	1/1/2019
1547988	West Star Energy Generation & Marketing	27	6/1/2010	6/1/2040
1547989	West Star Energy Generation & Marketing	15	6/1/2010	6/1/2011

Prior generator interconnection requests that were included for this study:

PID	Substation	MW	In Service Date
207	Grand Gulf	1594	1/1/2015
208	Fancy Point	1594	1/1/2015
210	Lewis Creek	358	6/1/2010
211	Lewis Creek	570	6/1/2011

The generator step-up transformers, generators, and interconnecting lines were modeled according to the information provided by PID-219 Plant. Customer supplied data are shown in **Appendix A-A**. The data used to build the load flow and dynamic models are also shown in **Appendix A-A**. Stability issues in the Western Region of the Entergy System due to Merchant Generators are shown in **Appendix A-G**. All stability study plots are shown in **Appendix A-H**. Policy statement / guidelines for Power System Stabilizer is included as **Appendix A-I**.

B. Load Flow Analyses

i) Load Flow Analysis:

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.

ii) 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 Rate A.

iii) Power Factor Consideration / Criteria

Entergy, consistent with the FERC Large Generator Interconnection Procedures (LGIP) requires the customer to be capable of supplying at least 0.33 MVAR (*i.e.*, 0.95 lagging power factor) and absorbing at least 0.33 MVAR (*i.e.*, 0.95 leading power factor) for every MW of power injected into the grid. In the event that, under normal operating conditions, the customer facility does not meet the prescribed power factor requirements at the point of interconnection, the customer shall take necessary steps, such as the installation of reactive power compensating devices, to achieve the desired power factor.

C. Analysis Results

Summary of the analysis results are documented in following table for each scenario.

Table II-C Summary of Results for PID-219 Plant Windfarm – ERIS Load Flow Study

Interface		2010 FCITC Available for Scenario 1	2015 FCITC Available for Scenario 1	2015 FCITC Available for Scenario 2	2010 FCITC Available for Scenario 3	2015 FCITC Available for Scenario 3	2015 FCITC Available for Scenario 4
AECI	Associated Electric Cooperative, Inc.	100	100	100	100	100	100
AMRN	Ameren Transmission	100	100	100	100	100	100
AEP-W	American Electric Power - West	100	100	100	100	100	0
CLEC	CLECO	0	0	0	0	0	0
EES	Entergy	0	0	0	0	0	0
EDE	Empire District Electric Co	100	100	100	100	100	100
LAF	Lafayette Utilities System	0	0	0	0	0	0
LAGN	Louisiana Generating, LLC	100	88	0	0	100	0
LEPA	Louisiana Energy & Power Authority	0	100	0	0	100	0
OGE	Oklahoma Gas & Electric Company	0	0	0	16	0	0
SME	South Mississippi Electric Power Assoc.	100	0	0	100	0	0
SOCO	Southern Company	100	100	0	100	100	0
SPA	Southwest Power Administration	100	0	0	100	0	0
TVA	Tennessee Valley Authority	100	100	0	100	100	0

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

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

2010 Summer Peak	Interface														
Limiting Element	Cost (\$)	AECI	AEPW	AMRN	CLECO	EES	EMDE	Lafa	Lagn	LEPA	OKGE	SMEPA	SOCO	SWPA	TVA
Cocodrie 230kV - Coughlin 138kV (CLECO)	TBD							X							
Danville - North Magazine REA 161kV	10,530,000										X				
Greenwood - Terrebone 115kV	22,094,000				X			X							
Judice - Scott1 138kV	10,000,000				X					X					
North Crowley - Scott1 138kV	11,942,000							X							
Scott1 - Bonin 138kV	1,755,000							X							
Semere - Scott2 138kV	16,432,875							X							
Sterlington 500/115kV transformer 1	19,401,000					X									
Sterlington 500/115kV transformer 2	19,401,000					X									

2015 Summer Peak	Interface														
Limiting Element	Cost (\$)	AECI	AEPW	AMRN	CLECO	EES	EMDE	Lafa	LAGN	LEPA	OKGE	SMEPA	SOCO	SWPA	TVA
Colonial Academy - Richard 138kV	2,652,500							X							
Danville - North Magazine REA 161kV	10,530,000										X				
Fairview - Gypsy 230kV	15,775,000											X			
Greenwood - Terrebone 115kV	22,113,272				X			X							
Grimes - Grimes 345/138kV transformer 1	TBD					X		X	X						
Grimes - Grimes 345/138kV transformer 2	TBD					X		X	X						
Grimes - Mt. Zion 138kV	TBD							X							
Jonesboro - Jonesboro North (AECC) 161kV	1,570,000													X	
Judice - Scott1 138kV	10,000,000				X										
North Crowley - Scott1 138kV	4,265,000							X							
Richard - Scott1 138kV	9,531,000							X							
Scott1 - Bonin 138kV	1,755,000							X							
Semere - Scott2 138kV	5,477,625							X							
Sterlington 500/115kV transformer 1	19,401,000					X									
Sterlington 500/115kV transformer 2	19,401,000					X									

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

2015 Summer Peak Limiting Element	Cost (\$)	Interface													
		AECI	AEPW	AMRN	CLECO	EES	EMDE	Lafa	LAGN	LEPA	OKGE	SMEPA	SOCO	SWPA	TVA
Acadia - Colonial Academy 138kV	2,092,500							X							
Acadia GSU - Scanlan 138kV	485,000							X							
Addis - Willow Glen 138kV	9,585,000									X					
Bogalusa - Adams Creek 230kV ckt 2	900,000				X	X		X	X	X					
Bonin - Cecelia 138kV	4,792,500				X										
Chauvin - Ashland 115kV	4,606,875									X					
Chauvin - Valentine 115kV	TBD									X					
Colonial Academy - Richard 138kV	2,652,500							X							
Coly - Vignes 230kV	13,350,000									X					
Cypress 500/138kV transformer 1	6,412,500						X								
Cypress 500/230kV transformer	TBD						X								
Danville - North Magazine REA 161kV	10,530,000										X				
Fairview - Gypsy 230kV	34,728,000											X			
Florence - South Jackson 115kV	5,715,000											X			
French Settlement - Sorrento 230kV	3,345,300											X			
Habetz - Richard 138kV	3,272,500							X							
Hartburg - Inland Orange 230kV	2,985,000						X								
Hartburg 500/230kV transformer 1	7,000,000						X								
Helbig - McLewis 230kV	22,740,000						X								
Inland - McLewis 230kV	4,912,500						X								
Jackson Miami - Jackson Monument Street 115kV	945,000											X			
Jackson Miami - Rex Brown 115kV	1,320,000											X			
Jonesboro - Jonesboro North (AECC) 161kV	10,575,000													X	
Judice - Scott1 138kV	10,000,000				X										
Lakeover 500/115kV transformer	8,100,000											X			
North Crowley - Richard 138kV	3,776,625							X							
North Crowley - Scott1 138kV	4,265,000				X			X							
Raceland - Coteau 115kV	3,065,000									X					
Ray Braswell - Grand Gulf 500kV	171,034,959				X	X		X		X		X	X		X

2015 Summer Peak	Interface														
Limiting Element	Cost (\$)	AECI	AEPW	AMRN	CLECO	EES	EMDE	LAFa	LAGN	LEPA	OKGE	SMEPA	SOCO	SWPA	TVA
Richard - Scott1 138kV	9,531,000				X			X							
Scott1 - Bonin 138kV	1,755,000							X							
Semere - Scott2 138kV	5,477,625				X			X							
Sorrento - Vignes 230kV	8,120,000									X					
Sterlington 500/115kV transformer 1	19,401,000					X									
Sterlington 500/115kV transformer 2	19,401,000					X									

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

2010 Summer Peak	Interface														
Limiting Element	Cost (\$)	AECI	AEPW	AMRN	CLECO	EES	EMDE	Lafa	Lagn	LEPA	OKGE	SMEPA	SOCO	SWPA	TVA
Danville - North Magazine REA 161kV	10,530,000										X				
Greenwood - Terrebone 115kV	22,094,000				X			X							
Judice - Scott1 138kV	10,000,000				X					X					
North Crowley - Scott1 138kV	4,265,000							X							
Scott1 - Bonin 138kV	1,755,000							X							
Semere - Scott2 138kV	5,477,625							X							
Sterlington 500/115kV transformer 1	8,100,000					X									
Sterlington 500/115kV transformer 2	8,100,000					X									

2015 Summer Peak	Interface														
Limiting Element	Cost (\$)	AECI	AEPW	AMRN	CLECO	EES	EMDE	Lafa	Lagn	LEPA	OKGE	SMEPA	SOCO	SWPA	TVA
Acadia - Colonial Academy 138kV	2,092,000							X							
Colonial Academy - Richard 138kV	2,652,500							X							
Danville - North Magazine REA 161kV	10,530,000										X				
Fairview - Gypsy 230kV	34,728,000											X			
Greenwood - Terrebone 115kV	22,094,000				X			X							
Jonesboro - Jonesboro North (AECC) 161kV	10,575,000													X	
Judice - Scott1 138kV	10,000,000				X										
North Crowley - Scott1 138kV	4,265,000							X							
Richard - Scott1 138kV	9,531,000							X							
Scott1 - Bonin 138kV	1,755,000							X							
Semere - Scott2 138kV	5,477,625							X							
Sterlington 500/115kV transformer 1	19,401,000					X									
Sterlington 500/115kV transformer 2	19,401,000					X									

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

2015 Summer Peak Limiting Element	Cost (\$)	Interface													
		AECI	AEPW	AMRN	CLECO	EES	EMDE	LAF A	LAGN	LEPA	OKGE	SMEPA	SOCO	SWPA	TVA
Acadia - Colonial Academy 138kV	2,092,500							X							
Acadia GSU - Scanlan 138kV	485,000							X							
Addis - Willow Glen 138kV	9,585,000									X					
Bogalusa - Adams Creek 230kV ckt 2	900,000				X	X		X	X	X					
Bonin - Cecelia 138kV	4,792,500				X										
Chauvin - Ashland 115kV	4,606,875									X					
Chauvin - Valentine 115kV	TBD									X					
Colonial Academy - Richard 138kV	2,652,500							X							
Cypress 500/138kV transformer 1	6,412,500		X			X									
Cypress 500/230kV transformer	7,000,000		X			X									
Danville - North Magazine REA 161kV	6,500,000										X				
Fairview - Gypsy 230kV	34,728,000											X			
Florence - South Jackson 115kV	5,715,000											X			
French Settlement - Sorrento 230kV	3,345,300											X			
Habetz - Richard 138kV	3,272,500							X							
Hartburg - Inland Orange 230kV	2,985,000					X									
Hartburg 500/230kV transformer 1	7,000,000					X									
Helbig - McLewis 230kV	22,740,000					X									
Inland - McLewis 230kV	4,912,500					X									
Jonesboro - Jonesboro North (AECC) 161kV	10,575,000														2
Judice - Scott1 138kV	10,000,000				X										
Lakeover 500/115kV transformer	8,100,000											8			
North Crowley - Richard 138kV	3,776,625							X							
North Crowley - Scott1 138kV	4,265,000				X			X							
Raceland - Coteau 115kV	3,065,000									X					
Ray Braswell - Grand Gulf 500kV	171,034,989				X	X		X	X	X		X	X		X
Richard - Scott1 138kV	9,531,000				X			X							

2015 Summer Peak	Interface														
Limiting Element	Cost (\$)	AECI	AEPW	AMRN	CLECO	EES	EMDE	LAF A	LAGN	LEPA	OKGE	SMEPA	SOCO	SWPA	TVA
Scott1 - Bonin 138kV	1,755,000							X							
Semere - Scott2 138kV	5,477,625							X							
Sterlington 500/115kV transformer 1	19,401,000					X									
Sterlington 500/115kV transformer 2	19,401,000					X									

III. Short Circuit Analysis / Breaker Rating Analysis

A. 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.

B. Short Circuit Analysis

The method used to determine if any short circuit problems would be caused by the addition of the PID-219 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-219 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-219 generation. Any breakers identified to be upgraded through this comparison are *mandatory* upgrades.

C. Analysis Results

There were no breakers that were found to be under-rated as a result of the additional short circuit current due to PID-219 generator.

APPENDIX A-C: DETAILS OF SCENARIO 1

AECI 2010

Limiting Element	Contingency Element	ATC
NONE	NONE	100

2015

Limiting Element	Contingency Element	ATC
NONE	NONE	100

AEP-W 2010

Limiting Element	Contingency Element	ATC
NONE	NONE	100

2015

Limiting Element	Contingency Element	ATC
NONE	NONE	100

AMRN 2010

Limiting Element	Contingency Element	ATC
NONE	NONE	100

2015

Limiting Element	Contingency Element	ATC
NONE	NONE	100

CLECO 2010

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Judice - Scott1 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	0

**CLECO
2015**

Limiting Element	Contingency Element	ATC
Judice - Scott1 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	0
Judice - Scott1 138kV	Greenwood - Terrebone 115kV	0
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Judice - Scott1 138kV	Greenwood - Humphery 115kV	0
Judice - Scott1 138kV	Gibson - Humphrey 115kV	0
Judice - Scott1 138kV	Gibson 138/115kV transformer	96
Judice - Scott1 138kV	Gibson - Ramos 138kV	96

**EES
2010**

Limiting Element	Contingency Element	ATC
Sterlington 500/115kV transformer 2	Sterlington 500/115kV transformer 1	0
Sterlington 500/115kV transformer 1	Sterlington 500/115kV transformer 2	0

2015

Limiting Element	Contingency Element	ATC
Sterlington 500/115kV transformer 2	Sterlington 500/115kV transformer 1	0
Sterlington 500/115kV transformer 1	Sterlington 500/115kV transformer 2	0
Grimes - Grimes 345/138kV transformer 1	Grimes - Grimes 345/138kV transformer 2	89
Grimes - Grimes 345/138kV transformer 2	Grimes - Grimes 345/138kV transformer 1	89

**EMDE
2010**

Limiting Element	Contingency Element	ATC
NONE	NONE	100

2015

Limiting Element	Contingency Element	ATC
NONE	NONE	100

LAF 2010

Limiting Element	Contingency Element	ATC
Semere - Scott2 138kV	Bonin - Labbe 230kV (LAF)	0
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Cocodrie 230kV - Coughlin 138kV (CLECO)	Cocodrie - Vil Plat 230kV	0
Semere - Scott2 138kV	Point Des Mouton - Wells 230kV	0
Semere - Scott2 138kV	Point Des Mouton (LAF) - Labbe (LAF) 230kV	0
North Crowley - Scott1 138kV	Bonin - Labbe 230kV (LAF)	0
Scott1 - Bonin 138kV	Bonin - Labbe 230kV (LAF)	0
North Crowley - Scott1 138kV	Point Des Mouton - Wells 230kV	0
North Crowley - Scott1 138kV	Point Des Mouton (LAF) - Labbe (LAF) 230kV	25
Scott1 - Bonin 138kV	Point Des Mouton - Wells 230kV	33
Scott1 - Bonin 138kV	Point Des Mouton (LAF) - Labbe (LAF) 230kV	57
Semere - Scott2 138kV	Greenwood - Terrebone 115kV	59
Semere - Scott2 138kV	Habetz - Richard 138kV	95

2015

Limiting Element	Contingency Element	ATC
Semere - Scott2 138kV	Bonin - Labbe 230kV (LAF)	0
North Crowley - Scott1 138kV	Bonin - Labbe 230kV (LAF)	0
Semere - Scott2 138kV	Point Des Mouton - Wells 230kV	0
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Semere - Scott2 138kV	Point Des Mouton (LAF) - Labbe (LAF) 230kV	0
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
North Crowley - Scott1 138kV	Point Des Mouton - Wells 230kV	0
Grimes - Mt. Zion 138kV	Grimes - Walden 138kV	0
Colonial Academy - Richard 138kV	Bonin - Labbe 230kV (LAF)	0
North Crowley - Scott1 138kV	Point Des Mouton (LAF) - Labbe (LAF) 230kV	0
Semere - Scott2 138kV	Habetz - Richard 138kV	16
North Crowley - Scott1 138kV	Richard - Scott1 138kV	19
Semere - Scott2 138kV	Greenwood - Terrebone 115kV	22
Colonial Academy - Richard 138kV	Point Des Mouton - Wells 230kV	23
Richard - Scott1 138kV	Bonin - Labbe 230kV (LAF)	28
Scott1 - Bonin 138kV	Bonin - Labbe 230kV (LAF)	45
Colonial Academy - Richard 138kV	Point Des Mouton (LAF) - Labbe (LAF) 230kV	58
Richard - Scott1 138kV	Point Des Mouton - Wells 230kV	75
Grimes - Grimes 345/138kV transformer 1	Grimes - Grimes 345/138kV transformer 2	82
Grimes - Grimes 345/138kV transformer 2	Grimes - Grimes 345/138kV transformer 1	82
Scott1 - Bonin 138kV	Point Des Mouton - Wells 230kV	84
North Crowley - Scott1 138kV	Habetz - Richard 138kV	86

**LAGN
2010**

Limiting Element	Contingency Element	ATC
NONE	NONE	100

2015

Limiting Element	Contingency Element	ATC
Grimes - Grimes 345/138kV transformer 1	Grimes - Grimes 345/138kV transformer 2	88
Grimes - Grimes 345/138kV transformer 2	Grimes - Grimes 345/138kV transformer 1	88

**LEPA
2010**

Limiting Element	Contingency Element	ATC
Judice - Scott1 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	0

2015

Limiting Element	Contingency Element	ATC
NONE	NONE	100

**OKGE
2010**

Limiting Element	Contingency Element	ATC
Danville - North Magazine REA 161kV	ANO - Fort Smith 500kV	0

2015

Limiting Element	Contingency Element	ATC
Danville - North Magazine REA 161kV	ANO - Fort Smith 500kV	0

**SMEPA
2010**

Limiting Element	Contingency Element	ATC
NONE	NONE	100

**SMEPA
2015**

Limiting Element	Contingency Element	ATC
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Fairview - Gypsy 230kV	Front Street - Slidell 230kV	0
Fairview - Gypsy 230kV	Bogalusa - Adams Creek 500/230kV transformer	20
Fairview - Gypsy 230kV	Bogalusa - Franklin 500kV	20

**SOCO
2010**

Limiting Element	Contingency Element	ATC
NONE	NONE	100

2015

Limiting Element	Contingency Element	ATC
NONE	NONE	100

**SWPA
2010**

Limiting Element	Contingency Element	ATC
NONE	NONE	100

2015

Limiting Element	Contingency Element	ATC
Jonesboro - Jonesboro North (AECC) 161kV	Heber Springs South - Quitman 161 kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Heber Springs South - Heber Industrial 161kV	0

**TVA
2010**

Limiting Element	Contingency Element	ATC
NONE	NONE	100

2015

Limiting Element	Contingency Element	ATC
NONE	NONE	100

APPENDIX A-D: DETAILS OF SCENARIO 2

2015

AECI

Limiting Element	Contingency Element	ATC
NONE	NONE	100

AEP-W

Limiting Element	Contingency Element	ATC
NONE	NONE	100

AMRN

Limiting Element	Contingency Element	ATC
NONE	NONE	100

CLECO

Limiting Element	Contingency Element	ATC
North Crowley - Scott1 138kV	Bonin - Labbe 230kV (LAFA)	0
North Crowley - Scott1 138kV	Point Des Mouton - Wells 230kV	0
North Crowley - Scott1 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
Bonin - Cecelia 138kV	Colonial Academy - Richard 138kV	0
Bogalusa - Adams Creek 230kV ckt 2	Bogalusa - Adams Creek 230kV ckt 1	0
Judice - Scott1 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	0
Bonin - Cecelia 138kV	Acadia - Colonial Academy 138kV	0
North Crowley - Scott1 138kV	Richard - Scott1 138kV	0
Ray Braswell - Grand Gulf 500kV	Franklin - Grand Gulf 500kV	0
Judice - Scott1 138kV	Greenwood - Terrebone 115kV	0
Bonin - Cecelia 138kV	Acadia GSU - Scanlan 138kV	0
Richard - Scott1 138kV	Bonin - Labbe 230kV (LAFA)	0
Judice - Scott1 138kV	Greenwood - Terrebone 115kV	0
Semere - Scott2 138kV	Habetz - Richard 138kV	0
North Crowley - Scott1 138kV	Habetz - Richard 138kV	0
Semere - Scott2 138kV	Greenwood - Terrebone 115kV	0
Judice - Scott1 138kV	Habetz - Richard 138kV	0
Judice - Scott1 138kV	Greenwood - Humphery 115kV	30
Judice - Scott1 138kV	Bonin - Cecelia 138kV	34
Judice - Scott1 138kV	Gibson - Humphrey 115kV	67

EES

Limiting Element	Contingency Element	ATC
Sterlington 500/115kV transformer 2	Sterlington 500/115kV transformer 1	0
Sterlington 500/115kV transformer 1	Sterlington 500/115kV transformer 2	0
Hartburg - Inland Orange 230kV	Cypress - Hartburg 500kV	0
Inland - McLewis 230kV	Cypress - Hartburg 500kV	0
Cypress 500/138kV transformer 1	Cypress 500/230kV transformer	0
Helbig - McLewis 230kV	Cypress - Hartburg 500kV	0
Cypress 500/230kV transformer	Cypress 500/138kV transformer 1	0
Hartburg 500/230kV transformer 1	Cypress - Hartburg 500kV	0
Bogalusa - Adams Creek 230kV ckt 2	Bogalusa - Adams Creek 230kV ckt 1	0
Ray Braswell - Grand Gulf 500kV	Franklin - Grand Gulf 500kV	0

EMDE

Limiting Element	Contingency Element	ATC
NONE	NONE	100

LAFa

Limiting Element	Contingency Element	ATC
Semere - Scott2 138kV	Bonin - Labbe 230kV (LAFa)	0
Bogalusa - Adams Creek 230kV ckt 2	Bogalusa - Adams Creek 230kV ckt 1	0
North Crowley - Scott1 138kV	Bonin - Labbe 230kV (LAFa)	0
Semere - Scott2 138kV	Point Des Mouton - Wells 230kV	0
Colonial Academy - Richard 138kV	Bonin - Labbe 230kV (LAFa)	0
North Crowley - Scott1 138kV	Point Des Mouton - Wells 230kV	0
Ray Braswell - Grand Gulf 500kV	Franklin - Grand Gulf 500kV	0
Semere - Scott2 138kV	Point Des Mouton (LAFa) - Labbe (LAFa) 230kV	0
North Crowley - Scott1 138kV	Point Des Mouton (LAFa) - Labbe (LAFa) 230kV	0
North Crowley - Scott1 138kV	Richard - Scott1 138kV	0
Semere - Scott2 138kV	Habetz - Richard 138kV	0
Richard - Scott1 138kV	Bonin - Labbe 230kV (LAFa)	0
Colonial Academy - Richard 138kV	Point Des Mouton - Wells 230kV	0
North Crowley - Scott1 138kV	Habetz - Richard 138kV	0
Semere - Scott2 138kV	Greenwood - Terrebone 115kV	0
Colonial Academy - Richard 138kV	Point Des Mouton (LAFa) - Labbe (LAFa) 230kV	0
Acadia - Colonial Academy 138kV	Bonin - Labbe 230kV (LAFa)	0
Richard - Scott1 138kV	Point Des Mouton - Wells 230kV	18
North Crowley - Scott1 138kV	Livonia - Wilbert 138kV	42
Richard - Scott1 138kV	Point Des Mouton (LAFa) - Labbe (LAFa) 230kV	51
Semere - Scott2 138kV	Wells 500/230kV transformer	52

Limiting Element	Contingency Element	ATC
North Crowley - Scott1 138kV	Wells 500/230kV transformer	55
Acadia - Colonial Academy 138kV	Point Des Mouton - Wells 230kV	57
North Crowley - Richard 138kV	Bonin - Labbe 230kV (LAFA)	58
Scott1 - Bonin 138kV	Bonin - Labbe 230kV (LAFA)	62
Habetz - Richard 138kV	Bonin - Labbe 230kV (LAFA)	80
North Crowley - Scott1 138kV	Greenwood - Terrebone 115kV	87
Acadia - Colonial Academy 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	91
North Crowley - Richard 138kV	Point Des Mouton - Wells 230kV	92
Acadia GSU - Scanlan 138kV	Bonin - Labbe 230kV (LAFA)	93
Scott1 - Bonin 138kV	Point Des Mouton - Wells 230kV	94

LAGN

Limiting Element	Contingency Element	ATC
Bogalusa - Adams Creek 230kV ckt 2	Bogalusa - Adams Creek 230kV ckt 1	0

LEPA

Limiting Element	Contingency Element	ATC
Coly - Vignes 230kV	Polsky Carville - Willow Glen 230kV	0
Coly - Vignes 230kV	A.A.C. - Polsky Carville 230kV	0
Coly - Vignes 230kV	A.A.C. - Licar 230kV	0
Coly - Vignes 230kV	Belle Helene - Licar 230kV	0
Coly - Vignes 230kV	Belle Helene - Woodstock 230kV	0
Coly - Vignes 230kV	Vulchlor - Woodstock 230kV	0
Bogalusa - Adams Creek 230kV ckt 2	Bogalusa - Adams Creek 230kV ckt 1	0
Ray Braswell - Grand Gulf 500kV	Franklin - Grand Gulf 500kV	0
Chauvin - Ashland 115kV	Coteau - Houma 115kV	0
Sorrento - Vignes 230kV	Polsky Carville - Willow Glen 230kV	11
Sorrento - Vignes 230kV	A.A.C. - Polsky Carville 230kV	27
Addis - Willow Glen 138kV	Louisiana Station - Wilbert 138kV	37
Sorrento - Vignes 230kV	A.A.C. - Licar 230kV	63
Raceland - Coteau 115kV	Terrebone 230/115kV transformer	65
Chauvin - Valentine 115kV	Coteau - Houma 115kV	99

OKGE

Limiting Element	Contingency Element	ATC
Danville - North Magazine REA 161kV	ANO - Fort Smith 500kV	0

SMEPA

Limiting Element	Contingency Element	ATC
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Fairview - Gypsy 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
Fairview - Gypsy 230kV	Bogalusa - Franklin 500kV	0
Jackson Miami - Rex Brown 115kV	South Jackson 230/115kV transformer 1	0
Florence - South Jackson 115kV	Bogalusa - Adams Creek 500/230kV transformer	0
Florence - South Jackson 115kV	Bogalusa - Franklin 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Ray Braswell - Grand Gulf 500kV	Franklin - Grand Gulf 500kV	0
Lakeover 500/115kV transformer	Ray Braswell 500/115kV transformer 1	0
Jackson Miami - Rex Brown 115kV	Jackson Forrest Hill - Ray Braswell 115kV	0
Jackson Miami - Jackson Monument Street 115kV	South Jackson 230/115kV transformer 1	0
Florence - South Jackson 115kV	Angie - Adams Creek 230kV	48
Florence - South Jackson 115kV	South Jackson - Pop Spring 115kV	58
Florence - South Jackson 115kV	Franklin - Grand Gulf 500kV	66
Florence - South Jackson 115kV	Georgetown - Pop Spring 115kV	82
Florence - South Jackson 115kV	Eldorado EHV - Sterlington 500kV	83
Florence - South Jackson 115kV	McAdams - Wolf Creek 500kV	84
Florence - South Jackson 115kV	Georgetown - Silver Creek 115kV	90

SOCO

Limiting Element	Contingency Element	ATC
Ray Braswell - Grand Gulf 500kV	Franklin - Grand Gulf 500kV	0

SWPA

Limiting Element	Contingency Element	ATC
Jonesboro - Jonesboro North (AECC) 161kV	Heber Springs South - Quitman 161 kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Heber Springs South - Heber Industrial 161kV	0

TVA

Limiting Element	Contingency Element	ATC
Ray Braswell - Grand Gulf 500kV	Franklin - Grand Gulf 500kV	0

APPENDIX A-E: DETAILS OF SCENARIO 3

AECI 2010

Limiting Element	Contingency Element	ATC
NONE	NONE	100

2015

Limiting Element	Contingency Element	ATC
NONE	NONE	100

AEP-W 2010

Limiting Element	Contingency Element	ATC
NONE	NONE	100

2015

Limiting Element	Contingency Element	ATC
NONE	NONE	100

AMRN 2010

Limiting Element	Contingency Element	ATC
NONE	NONE	100

2015

Limiting Element	Contingency Element	ATC
NONE	NONE	100

**CLECO
2010**

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Judice - Scott1 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	0

2015

Limiting Element	Contingency Element	ATC
Judice - Scott1 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	0
Judice - Scott1 138kV	Greenwood - Terrebone 115kV	0
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Judice - Scott1 138kV	Greenwood - Humphrey 115kV	0
Judice - Scott1 138kV	Gibson - Humphrey 115kV	0
Judice - Scott1 138kV	Gibson 138/115kV transformer	90
Judice - Scott1 138kV	Gibson - Ramos 138kV	90

**EES
2010**

Limiting Element	Contingency Element	ATC
Sterlington 500/115kV transformer 2	Sterlington 500/115kV transformer 1	0
Sterlington 500/115kV transformer 1	Sterlington 500/115kV transformer 2	0

2015

Limiting Element	Contingency Element	ATC
Sterlington 500/115kV transformer 2	Sterlington 500/115kV transformer 1	0
Sterlington 500/115kV transformer 1	Sterlington 500/115kV transformer 2	0

**EMDE
2010**

Limiting Element	Contingency Element	ATC
NONE	NONE	100

2015

Limiting Element	Contingency Element	ATC
NONE	NONE	100

Lafa 2010

Limiting Element	Contingency Element	ATC
Semere - Scott2 138kV	Bonin - Labbe 230kV (Lafa)	0
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Semere - Scott2 138kV	Point Des Mouton - Wells 230kV	0
Semere - Scott2 138kV	Point Des Mouton (Lafa) - Labbe (Lafa) 230kV	0
North Crowley - Scott1 138kV	Bonin - Labbe 230kV (Lafa)	0
Scott1 - Bonin 138kV	Bonin - Labbe 230kV (Lafa)	0
North Crowley - Scott1 138kV	Point Des Mouton - Wells 230kV	0
North Crowley - Scott1 138kV	Point Des Mouton (Lafa) - Labbe (Lafa) 230kV	24
Scott1 - Bonin 138kV	Point Des Mouton - Wells 230kV	31
Scott1 - Bonin 138kV	Point Des Mouton (Lafa) - Labbe (Lafa) 230kV	56
Semere - Scott2 138kV	Greenwood - Terrebone 115kV	61
Semere - Scott2 138kV	Habetz - Richard 138kV	93

2015

Limiting Element	Contingency Element	ATC
Semere - Scott2 138kV	Bonin - Labbe 230kV (Lafa)	0
North Crowley - Scott1 138kV	Bonin - Labbe 230kV (Lafa)	0
Semere - Scott2 138kV	Point Des Mouton - Wells 230kV	0
Semere - Scott2 138kV	Point Des Mouton (Lafa) - Labbe (Lafa) 230kV	0
North Crowley - Scott1 138kV	Point Des Mouton - Wells 230kV	0
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Colonial Academy - Richard 138kV	Bonin - Labbe 230kV (Lafa)	0
North Crowley - Scott1 138kV	Point Des Mouton (Lafa) - Labbe (Lafa) 230kV	0
North Crowley - Scott1 138kV	Richard - Scott1 138kV	19
Colonial Academy - Richard 138kV	Point Des Mouton - Wells 230kV	21
Richard - Scott1 138kV	Bonin - Labbe 230kV (Lafa)	27
Scott1 - Bonin 138kV	Bonin - Labbe 230kV (Lafa)	44
Colonial Academy - Richard 138kV	Point Des Mouton (Lafa) - Labbe (Lafa) 230kV	56
Richard - Scott1 138kV	Point Des Mouton - Wells 230kV	74
Scott1 - Bonin 138kV	Point Des Mouton - Wells 230kV	84
Acadia - Colonial Academy 138kV	Bonin - Labbe 230kV (Lafa)	99

Lagn 2010

Limiting Element	Contingency Element	ATC
NONE	NONE	100

**LAGN
2015**

Limiting Element	Contingency Element	ATC
NONE	NONE	100

**LEPA
2010**

Limiting Element	Contingency Element	ATC
Judice - Scott1 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	0

2015

Limiting Element	Contingency Element	ATC
NONE	NONE	100

**OKGE
2010**

Limiting Element	Contingency Element	ATC
Danville - North Magazine REA 161kV	ANO - Fort Smith 500kV	16

2015

Limiting Element	Contingency Element	ATC
Danville - North Magazine REA 161kV	ANO - Fort Smith 500kV	0

**SMEPA
2010**

Limiting Element	Contingency Element	ATC
NONE	NONE	100

2015

Limiting Element	Contingency Element	ATC
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0

SOCO 2010

Limiting Element	Contingency Element	ATC
NONE	NONE	100

2015

Limiting Element	Contingency Element	ATC
NONE	NONE	100

SWPA 2010

Limiting Element	Contingency Element	ATC
NONE	NONE	100

2015

Limiting Element	Contingency Element	ATC
Jonesboro - Jonesboro North (AECC) 161kV	Heber Springs South - Quitman 161 kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Heber Springs South - Heber Industrial 161kV	0

TVA

2010

Limiting Element	Contingency Element	ATC
NONE	NONE	100

2015

Limiting Element	Contingency Element	ATC
NONE	NONE	100

APPENDIX A-F: DETAILS OF SCENARIO 4

2015

AECI

Limiting Element	Contingency Element	ATC
NONE	NONE	100

AEP-W

Limiting Element	Contingency Element	ATC
Cypress 500/138kV transformer 1	Cypress 500/230kV transformer	0
Cypress 500/230kV transformer	Cypress 500/138kV transformer 1	0

AMRN

Limiting Element	Contingency Element	ATC
NONE	NONE	100

CLECO

Limiting Element	Contingency Element	ATC
Ray Braswell - Grand Gulf 500kV	Franklin - Grand Gulf 500kV	0
North Crowley - Scott1 138kV	Bonin - Labbe 230kV (LAFA)	0
North Crowley - Scott1 138kV	Point Des Mouton - Wells 230kV	0
North Crowley - Scott1 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
Bonin - Cecelia 138kV	Colonial Academy - Richard 138kV	0
Judice - Scott1 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	0
Bogalusa - Adams Creek 230kV ckt 2	Bogalusa - Adams Creek 230kV ckt 1	0
Bonin - Cecelia 138kV	Acadia - Colonial Academy 138kV	0
North Crowley - Scott1 138kV	Richard - Scott1 138kV	0
Bonin - Cecelia 138kV	Acadia GSU - Scanlan 138kV	0
Richard - Scott1 138kV	Bonin - Labbe 230kV (LAFA)	0
Judice - Scott1 138kV	Greenwood - Terrebone 115kV	0
Judice - Scott1 138kV	Greenwood - Humphery 115kV	21
Judice - Scott1 138kV	Gibson - Humphrey 115kV	58
Richard - Scott1 138kV	Point Des Mouton - Wells 230kV	99

EES

Limiting Element	Contingency Element	ATC
Sterlington 500/115kV transformer 2	Sterlington 500/115kV transformer 1	0
Sterlington 500/115kV transformer 1	Sterlington 500/115kV transformer 2	0
Cypress 500/138kV transformer 1	Cypress 500/230kV transformer	0
Hartburg - Inland Orange 230kV	Cypress - Hartburg 500kV	0
Cypress 500/230kV transformer	Cypress 500/138kV transformer 1	0
Inland - McLewis 230kV	Cypress - Hartburg 500kV	0
Helbig - McLewis 230kV	Cypress - Hartburg 500kV	0
Ray Braswell - Grand Gulf 500kV	Franklin - Grand Gulf 500kV	0
Hartburg 500/230kV transformer 1	Cypress - Hartburg 500kV	0
Bogalusa - Adams Creek 230kV ckt 2	Bogalusa - Adams Creek 230kV ckt 1	0

EMDE

Limiting Element	Contingency Element	ATC
NONE	NONE	100

LAGN

Limiting Element	Contingency Element	ATC
Ray Braswell - Grand Gulf 500kV	Franklin - Grand Gulf 500kV	0
Bogalusa - Adams Creek 230kV ckt 2	Bogalusa - Adams Creek 230kV ckt 1	0

Lafa

Limiting Element	Contingency Element	ATC
Ray Braswell - Grand Gulf 500kV	Franklin - Grand Gulf 500kV	0
Semere - Scott2 138kV	Bonin - Labbe 230kV (Lafa)	0
North Crowley - Scott1 138kV	Bonin - Labbe 230kV (Lafa)	0
Bogalusa - Adams Creek 230kV ckt 2	Bogalusa - Adams Creek 230kV ckt 1	0
Semere - Scott2 138kV	Point Des Mouton - Wells 230kV	0
Colonial Academy - Richard 138kV	Bonin - Labbe 230kV (Lafa)	0
North Crowley - Scott1 138kV	Point Des Mouton - Wells 230kV	0
Semere - Scott2 138kV	Point Des Mouton (Lafa) - Labbe (Lafa) 230kV	0
North Crowley - Scott1 138kV	Point Des Mouton (Lafa) - Labbe (Lafa) 230kV	0
North Crowley - Scott1 138kV	Richard - Scott1 138kV	0
Semere - Scott2 138kV	Habetz - Richard 138kV	0
Richard - Scott1 138kV	Bonin - Labbe 230kV (Lafa)	0
Colonial Academy - Richard 138kV	Point Des Mouton - Wells 230kV	0
North Crowley - Scott1 138kV	Habetz - Richard 138kV	0
Semere - Scott2 138kV	Greenwood - Terrebone 115kV	0
Acadia - Colonial Academy 138kV	Bonin - Labbe 230kV (Lafa)	0
Colonial Academy - Richard 138kV	Point Des Mouton (Lafa) - Labbe (Lafa) 230kV	0

Limiting Element	Contingency Element	ATC
Richard - Scott1 138kV	Point Des Mouton - Wells 230kV	17
North Crowley - Scott1 138kV	Livonia - Wilbert 138kV	44
Richard - Scott1 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	50
Semere - Scott2 138kV	Wells 500/230kV transformer	53
North Crowley - Richard 138kV	Bonin - Labbe 230kV (LAFA)	55
Acadia - Colonial Academy 138kV	Point Des Mouton - Wells 230kV	56
North Crowley - Scott1 138kV	Wells 500/230kV transformer	57
Scott1 - Bonin 138kV	Bonin - Labbe 230kV (LAFA)	59
Habetz - Richard 138kV	Bonin - Labbe 230kV (LAFA)	75
North Crowley - Scott1 138kV	Greenwood - Terrebone 115kV	89
Acadia - Colonial Academy 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	90
North Crowley - Richard 138kV	Point Des Mouton - Wells 230kV	91
Acadia GSU - Scanlan 138kV	Bonin - Labbe 230kV (LAFA)	91
Scott1 - Bonin 138kV	Point Des Mouton - Wells 230kV	93

LEPA

Limiting Element	Contingency Element	ATC
Ray Braswell - Grand Gulf 500kV	Franklin - Grand Gulf 500kV	0
Bogalusa - Adams Creek 230kV ckt 2	Bogalusa - Adams Creek 230kV ckt 1	0
Chauvin - Ashland 115kV	Coteau - Houma 115kV	0
Addis - Willow Glen 138kV	Louisiana Station - Wilbert 138kV	40
Raceland - Coteau 115kV	Terrebone 230/115kV transformer	67
Chauvin - Valentine 115kV	Coteau - Houma 115kV	100

OKGE

Limiting Element	Contingency Element	ATC
Danville - North Magazine REA 161kV	ANO - Fort Smith 500kV	0

SMEPA

Limiting Element	Contingency Element	ATC
Lakeover 500/115kV transformer	Ray Braswell 500/115kV transformer 1	0
Lakeover 500/115kV transformer	McAdams 500/230kV transformer 1	0
Lakeover 500/115kV transformer	Ray Braswell 500/230kV transformer 1	0
Lakeover 500/115kV transformer	Ray Braswell 500/230kV transformer 2	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Lakeover 500/115kV transformer	Northside - Ray Braswell 230kV	0
Lakeover 500/115kV transformer	Northside - Rex Brown 230kV	0
Ray Braswell - Grand Gulf 500kV	Franklin - Grand Gulf 500kV	0
Fairview - Gypsy 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
Fairview - Gypsy 230kV	Bogalusa - Franklin 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Lakeover 500/115kV transformer	McAdams - Pickens 230kV	0
Florence - South Jackson 115kV	Bogalusa - Adams Creek 500/230kV transformer	0
Florence - South Jackson 115kV	Bogalusa - Franklin 500kV	0
Lakeover 500/115kV transformer	South Jackson 230/115kV transformer 1	62

SOCO

Limiting Element	Contingency Element	ATC
Ray Braswell - Grand Gulf 500kV	Franklin - Grand Gulf 500kV	0

SWPA

Limiting Element	Contingency Element	ATC
Jonesboro - Jonesboro North (AECC) 161kV	Heber Springs South - Quitman 161 kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Heber Springs South - Heber Industrial 161kV	0

TVA

Limiting Element	Contingency Element	ATC
Ray Braswell - Grand Gulf 500kV	Franklin - Grand Gulf 500kV	0