



*PID 229*  
*Feasibility Study Report*  
*550 MW Plant*

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# I. Introduction

This Energy Resource Interconnection Service (ERIS) is based on PID 229 550MW request for interconnection on Entergy's transmission system at Pee Dee 138kV 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. NRIS analysis will be performed during the system impact study.

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 System Impact Study was based on information provided by PID 229 customer and assumptions made by 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.

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

## **II. 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-229 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-229 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-229 generation. Any breakers identified to be upgraded through this comparison are mandatory upgrades.

### C. Analysis Results

The results of the short circuit analysis indicates that the additional generation due to PID 229 generation causes an increase in short circuit current such that they exceed the fault interrupting capability of the high voltage circuit breakers within the vicinity of the PID 229 plant without priors.

**Table I: Underrated Breakers W/O Priors Included**

<u>Substation</u>	<u>Breaker</u>	<u>Duty % w/o PID 229</u>	<u>Max Fault w/o PID 229 (amps)</u>	<u>Duty % w/ PID 229</u>	<u>Max Fault with PID 229 (amps)</u>	<u>Interrupting Rating (amps)</u>
Conroe 138 kV	6380-C	99.4	20786	100	20919	20918

Table I illustrates the station name, worst case fault level, and the number of breakers that were found to be under-rated at the respective locations as a result of the additional short circuit current due to PID 229 generation.

The results of the short circuit analysis indicates that the additional generation due to PID 229 generation causes an increase in short circuit current such that they exceed the fault interrupting capability of the high voltage circuit breakers within the vicinity of the PID 229 plant with priors.

**Table II: Underrated Breakers W Priors Included**

<u>Substation</u>	<u>Breaker</u>	<u>Duty % w/o PID 229</u>	<u>Max Fault w/o PID 229 (amps)</u>	<u>Duty % w/ PID 229</u>	<u>Max Fault with PID 229 (amps)</u>	<u>Interrupting Rating (amps)</u>
Conroe 138 kV	6380-C	99.4	20792	100	20925	20918

Table II illustrates the station name, worst case fault level, and the number of breakers that were found to be under-rated at the respective locations as a result of the additional short circuit current due to PID 229 generation **with** priors. Priors included are: 215, 216, 217, 220, 222, 223, 224, & 228.

## D. Problem Resolution

Table III illustrates the station name, and the cost associated with upgrading the breakers at each station both for mandatory and optional breaker upgrades.

**Table III**

<u>Substation</u>	<u>Number of Breakers</u>	<u>New Breaker Rating (amps)</u>	<u>Estimated cost of Breaker Upgrades (\$)</u>
Conroe 138 kV	1	50000	\$234,800

\* Price based on 145 kV Breaker

*The results of the short circuit analysis based upon the current configuration of the Entergy transmission system and Generation Interconnection Study Queue. Therefore, these results are subject to change.*

### III. Load Flow Analysis

#### A. Model Information

The load flow analysis was performed based on the projected 2012 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 2012 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 PID 229 550MW 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:

<b>Scenario No.</b>	<b>Approved Future Transmission Projects</b>	<b>Pending Transmission Service &amp; Study Requests</b>
1	Not Included	Not Included
2	Not Included	Included
3	Included	Not Included
4	Included	Included

## **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 229 – ERIS Load Flow Study**

<b>Interface</b>		<b>Summer Peak Case Used</b>	<b>FCITC Available for Scenario 1</b>	<b>FCITC Available for Scenario 2</b>	<b>FCITC Available for Scenario 3</b>	<b>FCITC Available for Scenario 4</b>
AECI	Associated Electric Cooperative, Inc.	2012	154	0	163	0
AEPW	American Electric Power - West	2012	0	0	0	0
AMRN	Ameren Transmission	2012	150	0	160	0
CLECO	CLECO	2012	0	0	0	0
EES	Entergy	2012	0	0	0	0
EDE	Empire District Electric Co	2012	0	0	0	0
LAFSA	Lafayette Utilities Systeem	2012	0	0	0	0
LAGN	Louisiana Generating, LLC	2012	0	0	0	0
LEPA	Louisiana Energy & Power Authority	2012	0	0	0	0
OKGE	Oklahoma Gas & Electric Company	2012	0	0	165	0
SMEPA	South Mississippi Electric Power Assoc.	2012	0	0	0	0
SOCO	Southern Company	2012	0	0	0	0
SPA	Southwest Power Administration	2012	0	0	0	0
TVA	Tennessee Valley Authority	2012	0	0	0	0

<b>Scenario No.</b>	<b>Approved Future Transmission Projects</b>	<b>Pending Transmission Service &amp; Study Requests</b>
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)**

Limiting Element	Est Cost (\$)	AECI	AEPW	AMRN	CLECO	EES	EMDE	Lafa	LAGN	LEPA	OKGE	SMEPA	SOCO	SPA	TVA
Acadia - Colonial Academy 138kV	6,277,500							X		X					
Acadia GSU - Scanlan 138kV	1,455,000							X		X					
Addis - Big Cajun 1 230kV	BP									X					
Ashland - Houma 115kV	1,809,000									X					
Baxter Wilson - Ray Braswell 500kV	4,100,000					X		X	X	X		X	X		X
Bishop - Cedar 138kV	11,000,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Bonin - Cecelia 138kV	4,792,500									X					
Bryan - Pee Dee 138kV	57,400,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Bull Shoals - Bull Shoals Dam SPA 161kV	427,500						X								
Calico Rock - Melbourne 161kV	24,975,000						X							X	
Calico Rock - Norfolk 161kV	12,180,000						X							X	
Cecelia - Semere 138kV	3,754,350							X							
Cedar - Cincinnati 138kV	10,737,500	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Champagne - East Opelousas 138kV	1,397,500							X							
Chauvin - Ashland 115kV	4,606,875									X					
Chauvin - Valentine 115kV	6,571,125									X					
Cincinnati - Walker 138kV	1,837,500	X	X	X	X	X	X	X	X	X	X	X	X	X	X
College Station - Bryan 138kV	13,650,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X
College Station - Grimes 138kV	30,575,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Colonial Academy - Richard 138kV	7,957,500							X		X					
Conway West 161/115kV transformer	TBD													X	
Coteau - Houma 115kV	4,975,000									X					
Danville - North Magazine REA 161kV	10,530,000		X				X				X				
Florence - South Jackson 115kV	5,715,000											X			
Gibson - Humphrey 115kV	24,009,000							X		X					
Gibson - Ramos 138kV	6,242,290									X					
Goree - Rivtrin 138kV	16,912,500	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Limiting Element	Est Cost (\$)	AECI	AEPW	AMRN	CLECO	EES	EMDE	LAFA	LAGN	LEPA	OKGE	SMEPA	SOCO	SPA	TVA
Greenwood - Humphrey 115kV	3,838,000				X			X		X					
Greenwood - Terrebone 115kV	22,094,000				X			X		X					
Grimes - Mt. Zion 138kV	6,476,625	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Grimes - Walden 138kV	10,027,125	X		X	X	X	X	X	X	X	X	X	X	X	X
Habetz - Richard 138kV	3,272,000				X			X		X					
Harrison East - Everton 161kV	345,000						X								
Harrison East - Summit 161kV	17,650,000						X								
Houma - City of Houma 115kV	1,125,000									X					
Huntsville - LINE 558 TAP 138 kV	2,812,500			X	X	X		X	X	X		X	X		X
Huntsville - LINE 558/91 TAP138 kV	7,537,500	X	X				X				X			X	
Independence SES - Moorefield 161kV	17,760,000													X	
Judice - Meaux 138kV	12,600,000				X					X					
Judice - Scott1 138kV	9,700,000				X					X					
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	17,265,000	X		X	X	X	X	X	X	X	X	X	X	X	X
Lake Conway - Mayflower 115kV	4,937,500													X	
LINE 558 TAP - MT. Zion 138 kV	6,687,500	X	X	X	X	X	X	X	X	X	X	X	X	X	X
LINE 558/91 TAP - Rivtrin 138 kV	7,537,500	X	X	X			X				X			X	
'MANSFLD4 138' TO BUS 'IPAPER 4 138'	TBD		X												
Melborne - Sage 161kV	8,573,000						X							X	
Moril - Cecelia 138kV	6,182,500				X					X					
North Crowley - Richard 138kV	3,776,625							X							
North Crowley - Scott1 138kV	39,707,607				X			X		X					
Pee Dee - Bishop 138kV	6,500,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Pleasant Hill 500/161kV transformer	TBD						X							X	
Raceland - Coteau 115kV	3,065,000									X					
Raceland 230/115kV transformer	TBD									X					
Richard - Scott1 138kV	68,006,984				X			X		X					
Richard 500/138kV transformer 1	7,560,000				X			X							
Richard 500/138kV transformer 2	7,560,000							X							

Limiting Element	Est Cost (\$)	AECI	AEPW	AMRN	CLECO	EES	EMDE	Lafa	LAGN	LEPA	OKGE	SMEPA	SOCO	SPA	TVA
Rivtrin - Walker 138kV	6,662,500	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Russellville East - Russellville North 161kV	5,954,000		X				X				X			X	
Russellville South - Dardanelle Dam 161kV	3,470,000						X				X			X	
Scanlan - Scott2 138kV	12,325,000							X							
Scott1 - Bonin 138kV	7,410,000							X		X					
Semere - Scott2 138kV	11,361,000				X			X		X					
St. Joe - Hilltop 161kV	BP						X				X				
Terrebone - Coteau 115kV	6,275,000									X					
Terrebone 230/115kV transformer	5,250,000									X					
Vacherie - Waterford 230kV	7,480,350									X					
Valentine 230/115kV transformer	4,050,000									X					

**TABLE II-C-2 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
Acadia - Colonial Academy 138kV	6,277,500							X							
Addis - Big Cajun 1 230kV	BP					X				X					
Alden - Lewis Creek SES 138kV	20,350,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Ashland - Houma 115kV	1,809,000									X					
Baxter Wilson - Ray Braswell 500kV	4,100,000					X		X	X	X		X	X		X
Bayou Cove - Richard 138kV ckt 1	41,357,926				X			X		X		X	X		X
Bayou Cove - Richard 138kV ckt 2	41,357,926							X							
Bishop - Cedar 138kV	11,000,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Bonin - Cecelia 138kV	4,792,500									X					
Bryan - Pee Dee 138kV	57,400,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Calico Rock - Melbourne 161kV	24,975,000													X	
Caney Creek - Lewis Creek SES 138kV	7,012,500	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Cedar - Cincinnati 138kV	10,737,500	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Chauvin - Ashland 115kV	4,606,875									X					
Chauvin - Valentine 115kV	6,571,125									X					
Cincinnati - Walker 138kV	1,837,500	X	X	X	X	X	X	X	X	X	X	X	X	X	X
College Station - Bryan 138kV	13,650,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X
College Station - Grimes 138kV	30,575,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Colonial Academy - Richard 138kV	7,957,500							X							
Conair - Caney Creek 138kV	7,725,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Conway - Wyandotte 138kV	5,987,500									X					
Coteau - Houma 115kV	4,975,000									X					
Coughlin - Plaisance 138kV (CLECO)	TBD								X						
Dobbin - Tubular 138kV	23,262,500	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Fort Worth Pipe - Sheavill 138kV	12,250,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Limiting Elements	Est Cost (\$)	AECI	AEPW	AMRN	CLECO	EES	EMDE	Lafa	LAGN	LEPA	OKGE	SMEPA	SOCO	SPA	TVA
Geismar - Wyandotte 138kV	4,487,500									X					
Gibson - Humphrey 115kV	24,009,000									X					
Gibson - Ramos 138kV	6,242,290									X					
Gibson 138/115kV transformer	6,010,000									X					
Greenwood - Humphrey 115kV	3,838,000									X					
Greenwood - Terrebone 115kV Supplemental Upgrade 228	TBD									X					
Habetz - Richard 138kV	3,272,000							X							
Harrison East - Omaha 161kV	21,425,000						X								
Houma - City of Houma 115kV	1,125,000									X					
Jaguar - Tap Point Esso 230kV	2,887,500					X				X					
Judice - Scott1 138kV	9,700,000									X					
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	17,265,000	X		X	X	X		X	X	X		X	X		X
Lake Conway - Mayflower 115kV	4,937,500													X	
Lewis Creek SES - Sheawill 138kV	6,321,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Louisiana Station - Thomas 138kV	2,544,750									X					
'MANSFLD4 138' TO BUS 'IPAPER 4 138'	TBD		X												
Melborne - Sage 161kV	8,573,000						X							X	
North Crowley - Richard 138kV	3,776,625							X							
North Crowley - Scott1 138kV	39,707,607							X							
OZD312 - Omaha 161kV	TBD						X								
Pee Dee - Bishop 138kV	6,500,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Pleasant Hill 500/161kV transformer	TBD													X	
Raceland - Coteau 115kV	3,065,000									X					
Raceland - Waterford 230kV	24,537,500									X					
Raceland 230/115kV transformer	TBD									X					
Richard - Scott1 138kV	68,006,984							X							
Rivtrin - Walker 138kV	6,662,500	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Scott1 - Bonin 138kV	7,410,000							X							

Limiting Elements	Est Cost (\$)	AECI	AEPW	AMRN	CLECO	EES	EMDE	Lafa	LAGN	LEPA	OKGE	SMEPA	SOCO	SPA	TVA
Semere - Scott2 138kV	11,361,000							X		X					
Terrebone - Coteau 115kV	6,275,000									X					
Terrebone 230/115kV transformer	5,250,000									X					
Vacherie - Waterford 230kV Supplemental Upgrade 228	TBD									X					
Valentine 230/115kV transformer	4,050,000									X					
Webre 500/230kV transformer Supplemental Upgrade 9Mile	TBD				X			X							
Willow Glen - Willow Glen 2 500/138kV transformer 1	TBD					X				X					
Willow Glen 500/230kV Transformer	TBD					X			X	X					

**TABLE II-C-3 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
Acadia - Colonial Academy 138kV	6,277,500							X		X					
Acadia GSU - Scanlan 138kV	1,455,000							X		X					
Addis - Big Cajun 1 230kV	BP									X					
Ashland - Houma 115kV	1,809,000									X					
Baxter Wilson - Ray Braswell 500kV	4,100,000					X		X	X	X		X	X		X
Bishop - Cedar 138kV	11,000,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Bonin - Cecelia 138kV	4,792,500									X					
Bryan - Pee Dee 138kV	57,400,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Bull Shoals - Bull Shoals Dam SPA 161kV	427,500						X								
Calico Rock - Melborne 161kV	24,975,000						X							X	
Calico Rock - Norfolk 161kV	12,180,000						X							X	
Cecelia - Semere 138kV	3,754,350							X							
Cedar - Cincinnati 138kV	10,737,500	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Champagne - East Opelousas 138kV	1,397,500							X							
Chauvin - Ashland 115kV	4,606,875									X					
Chauvin - Valentine 115kV	6,571,125									X					
Cincinnati - Walker 138kV	1,837,500	X	X	X	X	X	X	X	X	X	X	X	X	X	X
College Station - Bryan 138kV	13,650,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X
College Station - Grimes 138kV	30,575,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Colonial Academy - Richard 138kV	7,957,500							X		X					
Conway West 161/115kV transformer	TBD													X	
Coteau - Houma 115kV	4,975,000									X					
Dobbin - Spring Branch 138kV	7,837,500	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dobbin - Tubular 138kV	23,262,500	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Fish Creek - Longmire 138kV	7,875,000				X	X		X	X	X		X			
Fish Creek - Spring Branch 138kV	10,400,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X



Limiting Element	Est Cost (\$)	AECI	AEPW	AMRN	CLECO	EES	EMDE	Lafa	LAGN	LEPA	OKGE	SMEPA	SOCO	SPA	TVA
Gibson - Humphrey 115kV	24,009,000							X		X					
Gibson - Ramos 138kV	6,242,290									X					
Greenwood - Humphrey 115kV	3,838,000				X			X		X					
Greenwood - Terrebone 115kV	22,094,000				X			X		X					
Grimes - Mt. Zion 138kV	6,476,625	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Habetz - Richard 138kV	3,272,000				X			X		X					
Harrison East - Everton 161kV	345,000						X								
Harrison East - Summit 161kV	17,650,000						X								
Houma - City of Houma 115kV	1,125,000									X					
Huntsville - LINE 558/91 TAP138 kV	7,537,500	X	X	X			X				X			X	
Independence SES - Moorefield 161kV	17,760,000													X	
Judice - Meaux 138kV	12,600,000				X					X					
Judice - Scott1 138kV	9,700,000				X					X					
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	17,265,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Lake Conway - Mayflower 115kV	4,937,500													X	
LINE 558 TAP - MT. Zion 138 kV	6,687,500					X		X	X	X		X			
LINE 558/91 TAP - Rivtrin 138 kV	7,537,500	X	X	X			X				X			X	
'MANSFLD4 138' TO BUS 'IPAPER 4 138'	TBD		X												
Melborne - Sage 161kV	8,573,000						X							X	
Moril - Cecelia 138kV	6,182,000				X					X					
North Crowley - Richard 138kV	3,776,625							X							
North Crowley - Scott1 138kV	39,707,607				X			X		X					
Pee Dee - Bishop 138kV	6,500,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Pleasant Hill 500/161kV transformer	TBD						X								1
Raceland - Coteau 115kV	3,065,000									X					
Raceland 230/115kV transformer	TBD									X					
Richard - Scott1 138kV	68,006,984				X			X		X					
Richard 500/138kV transformer 1	7,560,000				X			X							
Richard 500/138kV transformer 2	7,560,000							X							

Limiting Element	Est Cost (\$)	AECI	AEPW	AMRN	CLECO	EES	EMDE	Lafa	LAGN	LEPA	OKGE	SMEPA	SOCO	SPA	TVA
Rivtrin - Walker 138kV	6,662,500	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Russellville East - Russellville North 161kV	5,954,000	X	X				X				X			X	
Russellville South - Dardanelle Dam 161kV	3,470,000						X				X			X	
Scanlan - Scott2 138kV	12,325,000							X							
Scott1 - Bonin 138kV	7,410,000							X		X					
Semere - Scott2 138kV	11,361,000				X			X		X					
St. Joe - Hilltop 161kV	BP						X				X				
Terrebone - Coteau 115kV	6,275,000									X					
Terrebone 230/115kV transformer	5,250,000									X					
Vacherie - Waterford 230kV	7,480,350									X					
Valentine 230/115kV transformer	4,050,000									X					

**TABLE II-C-4 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	LAFA	LAGN	LEPA	OKGE	SMEPA	SOCO	SPA	TVA
Acadia - Colonial Academy 138kV	6,277,500							X							
Addis - Big Cajun 1 230kV	BP					X				X					
Addis - Wilbert 138kV	2,443,500									X					
Addis - Willow Glen 138kV	10,672,500									X					
Alchem - Monochem1 138kV	7,601,200									X					
Alden - Lewis Creek SES 138kV	20,350,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Baxter Wilson - Ray Braswell 500kV	4,100,000					X		X	X	X		X	X		X
Bayou Cove - Richard 138kV ckt 1	41,357,926				X			X		X		X	X		X
Bayou Cove - Richard 138kV ckt 2	41,357,926							X							
Bishop - Cedar 138kV	11,000,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Bonin - Cecelia 138kV	4,792,500									X					
Bryan - Pee Dee 138kV	57,400,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Calico Rock - Melborne 161kV	24,975,000													X	
Caney Creek - Lewis Creek SES 138kV	7,725,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Cedar - Cincinnati 138kV	10,737,500	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Cincinnati - Walker 138kV	1,837,500	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Cleveland - Tarking 138kV	11,662,500					X									
College Station - Bryan 138kV	13,650,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X
College Station - Grimes 138kV	30,575,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Colonial Academy - Richard 138kV	7,957,500							X							
Conair - Caney Creek 138kV	7,725,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Conway - Wyandotte 138kV	5,987,000									X					
Dobbin - Tubular 138kV	23,262,500	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Limiting Element	Est Cost (\$)	AECI	AEPW	AMRN	CLECO	EES	EMDE	Lafa	LAGN	LEPA	OKGE	SMEPA	SOCO	SPA	TVA
Fort Worth Pipe - Sheawill 138kV	12,250,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Geismar - Wyandotte 138kV	4,487,500									X					
Gibson - Humphrey 115kV	24,009,000									X					
Gibson - Ramos 138kV	6,242,290									X					
Gibson 138/115kV transformer	6,010,000									X					
Gonzales - Sorrento 138kV	5,812,500									X					
Greenwood - Humphrey 115kV	3,838,000									X					
Greenwood - Terrebone 115kV Supplemental Upgrade 228	TBD									X					
Habetz - Richard 138kV	3,272,000							X							
Harrison East - Omaha 161kV	21,425,000						X								
Jaguar - Tap Point Esso 230kV	2,887,500					X									
Judice - Scott1 138kV	9,700,000									X					
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	17,650,000	X		X	X	X		X	X	X		X	X		X
Lake Conway - Mayflower 115kV	4,937,500													X	
Lewis Creek SES - Sheawill 138kV	6,312,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Louisiana Station - Thomas 138kV	2,544,750									X					
'MANSFLD4 138' TO BUS 'IPAPER 4 138'	TBD		X												
Melborne - Sage 161kV	8,573,000						X							X	
Moril - Duboin 138kV	5,600,000									X					
North Crowley - Richard 138kV	3,776,625							X							
North Crowley - Scott1 138kV	39,707,607							X							
OZD312 - Omaha 161kV	TBD						X								
Pee Dee - Bishop 138kV	6,500,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Pleasant Hill 500/161kV transformer	TBD													1	
Port Hudson - Thomas 138kV	2,554,875									X					

Limiting Element	Est Cost (\$)	AECI	AEPW	AMRN	CLECO	EES	EMDE	LAFA	LAGN	LEPA	OKGE	SMEPA	SOCO	SPA	TVA
Port Hudson 230/138 transformer 1	TBD									X					
Port Hudson 230/138 transformer 2	TBD									X					
Raceland - Coteau 115kV	3,065,000									X					
Richard - Scott1 138kV	68,006,000							X							
Rivtrin - Walker 138kV	6,662,000	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Scott1 - Bonin 138kV	7,410,000							X							
Semere - Scott2 138kV	11,361,000							X		X					
Sorrento 138/115kV transformer 1	TBD									X					
Terrebone 230/115kV transformer	5,250,000									X					
Vacherie - Waterford 230kV Supplemental Upgrade 228	TBD									X					
Webre 500/230kV transformer Supplemental Upgrade 9Mile	TBD				X			X							
Willow Glen - Willow Glen 2 500/138kV transformer 1	TBD					X				X					
Willow Glen 2 - Alchem 138kV	7,687,500									X					
Willow Glen 500/230kV Transformer	TBD					X			X	X					

## APPENDIX A-B: Approved Projects and Transactions in Study Mode

Year	Approved Future Projects
2009 – 2013	EAI 2009S Conway West – Donaghey
	EAI 2009S Danville – Magazine
	EAI 2009S Gillett Capacitor Bank Approved
	EAI 2009W Donaghey - Conway South
	EAI 2010S SMEPA Approved
	EAI 2011W Aquilla Facility Study
	EAI 2012S Warren East Cap
	EGSL 2009S Install 37.7MVAR Cap Bank at Acadia 138kV Sub
	ELL 2009S Amite_South_Area_Improvements_Phase_III
	ELL 2011S Sarepta+Additions
	ELL 2012S Ouichita-To Run First-upg-1478781-3SterlAutos+2BWAutos+splitbus
	ELL 2012S Ouichita-To Run Second Sterlington to NorthBastropVERSION1-Updated
	ELL 2013S Coly-Hammond_230kV
	ELL 2013S Loblolly-Hammond_230kV
	EMI 2008S Liberty-Gloster_Uprate_Line_To_190MVA_newnum
	EMI 2009S Indianola-Greenwood Upggrade Jumpers-Bus
	EMI 2010S Magee_XFMRs_2000A_switches
	ENOI 2009S Paterson Restore Breakers
	ETI 2009F Porter_Tamina_138kV_Replace_Breaker
	ETI 2009S Beaumont_69kV_Improvement_Plan
	ETI 2009S Close_College_Station_138kV_NO_Switch
	ETI 2009S Retap_Newton_Bulk_CT
	ETI 2009W Upgrade_Fawil_Auto
	ETI 2010S WRRIP_Ph_3_Interim_Lewis_Creek_Jacinto_Conversion
	ETI 2011S WRRIP_Ph_3_Interim_Add_Alden_SVC
	ETI 2011S WRRIP_Ph_3_Interim_Upgrade_South_Beaumont_Fontenots_Corner_138kV Solution Set-TVA Affected System

Year	Proposed Projects for prior generator interconnection requests
2012	Build Acadiana Load Pocket upgrades
	New Bayou Steel – Tezcuco 230kV line
	New Webre – Wells 230kV line
	New Lewis Creek – Conroe 230kV transmission line
	Upgrade Frisco – Tezcuco 230kV line
	Upgrade LaBarre – South Port 230kV line
	Upgrade Vacherie – Waterford 230kV line
	Upgrade Terrebone – Greenwood 230kV line
	Upgrade Belle Point – Gypsy 230kV line

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

PID	Substation	MW	In Service Date
PID 211	Lewis Creek	570	6/1/2011
PID 221	Wolfcreek	875	In Service
PID 222	Nine Mile	570	10/1/2012
PID 223	PID-223 Tap	125	10/1/2010
PID 224	PID-224 Tap	100	12/1/2009
PID 228	PID-228 Tap	115	4/30/2011

Prior transmission service requests that were included in this study:

OASIS #	PSE	MW	Begin	End
1460900	Louisiana Energy & Power Authority	116	1/1/2009	1/1/2030
1481235	Louisiana Energy & Power Authority	50	2/1/2011	2/1/2016
1520043	Municipal Energy Agency of Miss	20	1/1/2011	1/1/2026
1617595	Aquila	75	1/1/2009	1/1/2010
1617596	Aquila	75	1/1/2009	1/1/2010
1617597	Aquila	75	1/1/2009	1/1/2010
1617598	Aquila	75	1/1/2009	1/1/2010
1642338	CLECO Power LLC	41	5/1/2016	5/1/2018
1620327	NRG Power Marketing	15	1/1/2011	1/1/2021
1628473	NRG Power Marketing	100	1/1/2011	1/1/2020
1628474	NRG Power Marketing	100	1/1/2011	1/1/2020
1631134	NRG Power Marketing	103	1/1/2011	1/1/2016
1631135	NRG Power Marketing	206	1/1/2011	1/1/2016
1632265	Merrill Lynch	1	4/1/2009	4/1/2014
1632268	Merrill Lynch	25	4/1/2009	4/1/2014
1632269	Merrill Lynch	15	4/1/2009	4/1/2014
1633695	NRG Power Marketing	100	1/1/2011	1/1/2020
1633701	NRG Power Marketing	20	1/1/2010	1/1/2019
1633702	NRG Power Marketing	20	1/1/2010	1/1/2019
1633703	NRG Power Marketing	20	1/1/2010	1/1/2019
1635561	NRG Power Marketing	300	1/1/2011	1/1/2021
1635749	NRG Power Marketing	155	1/1/2010	1/1/2020
1636313	NRG Power Marketing	75	1/1/2010	1/1/2020
1641343	NRG Power Marketing	52	1/1/2011	1/1/2012
1641979	NRG Power Marketing	30	1/1/2011	1/1/2021

## APPENDIX A-C: DETAILS OF SCENARIO 1

### AECI

Limiting Element	Contingency Element	ATC
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Lake Charles Bulk - Roy S Nelson 138kV ckt 2	154
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	177
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	178
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	182
Pee Dee - Bishop 138kV	Huntsville - LINE 558 TAP 138 kV	185
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	187
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	189
Bishop - Cedar 138kV	Huntsville - LINE 558 TAP 138 kV	190
Pee Dee - Bishop 138kV	Cypress - Hartburg 500kV	190
Pee Dee - Bishop 138kV	Walden - April 138kV	191
Bishop - Cedar 138kV	Grimes - Walden 138kV	191
Pee Dee - Bishop 138kV	Webre - Wells 500kV	193
Pee Dee - Bishop 138kV	April - Lake Forest 138kV	193
Bishop - Cedar 138kV	Cypress - Hartburg 500kV	194
Bishop - Cedar 138kV	Walden - April 138kV	195
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	195
Bishop - Cedar 138kV	Webre - Wells 500kV	197
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Bishop - Cedar 138kV	April - Lake Forest 138kV	197
Cedar - Cincinnati 138kV	Huntsville - LINE 558 TAP 138 kV	202
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	203
Cedar - Cincinnati 138kV	Cypress - Hartburg 500kV	206
Cedar - Cincinnati 138kV	Walden - April 138kV	207
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Cedar - Cincinnati 138kV	Webre - Wells 500kV	209
Cedar - Cincinnati 138kV	April - Lake Forest 138kV	209
Pee Dee - Bishop 138kV	Base Case	213
Bishop - Cedar 138kV	Base Case	217
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	222
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	228
Cedar - Cincinnati 138kV	Base Case	229
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	230
Cincinnati - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	235
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	235



<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Cincinnati - Walker 138kV	Grimes - Walden 138kV	235
Cincinnati - Walker 138kV	College Station - Bryan 138kV	239
Cincinnati - Walker 138kV	Walden - April 138kV	239
Cincinnati - Walker 138kV	Cypress - Hartburg 500kV	239
Cincinnati - Walker 138kV	College Station - Grimes 138kV	240
Cincinnati - Walker 138kV	April - Lake Forest 138kV	241
Rivtrin - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	242
Rivtrin - Walker 138kV	Grimes - Walden 138kV	243
Rivtrin - Walker 138kV	College Station - Bryan 138kV	244
Rivtrin - Walker 138kV	College Station - Grimes 138kV	245
Rivtrin - Walker 138kV	Walden - April 138kV	246
Rivtrin - Walker 138kV	Cypress - Hartburg 500kV	246
Rivtrin - Walker 138kV	April - Lake Forest 138kV	249
Cincinnati - Walker 138kV	Base Case	262
Rivtrin - Walker 138kV	Base Case	269
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	285
College Station - Grimes 138kV	Bishop - Cedar 138kV	287
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	295
College Station - Grimes 138kV	Cincinnati - Walker 138kV	316
College Station - Grimes 138kV	Rivtrin - Walker 138kV	321
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	367
College Station - Bryan 138kV	Bishop - Cedar 138kV	369
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	377
Grimes - Mt. Zion 138kV	Pee Dee - Bishop 138kV	383
Grimes - Mt. Zion 138kV	Bishop - Cedar 138kV	389
College Station - Bryan 138kV	Cincinnati - Walker 138kV	398
College Station - Bryan 138kV	Rivtrin - Walker 138kV	403
Grimes - Mt. Zion 138kV	Cedar - Cincinnati 138kV	405
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	447
Grimes - Mt. Zion 138kV	Cincinnati - Walker 138kV	447
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	451
Bryan - Pee Dee 138kV	Huntsville - LINE 558/91 TAP138 kV	451
Grimes - Mt. Zion 138kV	Rivtrin - Walker 138kV	457
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	461
LINE 558 TAP - MT. Zion 138 kV	Pee Dee - Bishop 138kV	467
Bryan - Pee Dee 138kV	Dolet Hills - S.W. Shreevport 345kV (CLECO)	469
LINE 558 TAP - MT. Zion 138 kV	Bishop - Cedar 138kV	473
LINE 558 TAP - MT. Zion 138 kV	Cedar - Cincinnati 138kV	488
Bryan - Pee Dee 138kV	Base Case	513
LINE 558 TAP - MT. Zion 138 kV	Cincinnati - Walker 138kV	531
Grimes - Walden 138kV	Pee Dee - Bishop 138kV	540
LINE 558 TAP - MT. Zion 138 kV	Rivtrin - Walker 138kV	540
Grimes - Walden 138kV	Bishop - Cedar 138kV	542
Grimes - Walden 138kV	Cedar - Cincinnati 138kV	551
Goree - Rivtrin 138kV	LINE 558/91 TAP - Rivtrin 138 kV	553
Goree - Rivtrin 138kV	Huntsville - LINE 558/91 TAP138 kV	553
LINE 558/91 TAP - Rivtrin 138 kV	Bryan - Pee Dee 138kV	574

Limiting Element	Contingency Element	ATC
Huntsville - LINE 558/91 TAP138 kV	Bryan - Pee Dee 138kV	574
Grimes - Walden 138kV	Cincinnati - Walker 138kV	574

## AEPW

Limiting Element	Contingency Element	ATC
Danville - North Magazine REA 161kV	ANO - Fort Smith 500kV	0
'MANSFLD4 138' TO BUS 'IPAPER 4 138'	Contingency of FlowGate 5029 DOLHILL7 345 TO SW SHV 7 345	0
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	175
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	180
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	181
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	185
Pee Dee - Bishop 138kV	Huntsville - LINE 558 TAP 138 kV	188
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	189
Pee Dee - Bishop 138kV	Cypress - Hartburg 500kV	191
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	192
Bishop - Cedar 138kV	Huntsville - LINE 558 TAP 138 kV	192
Pee Dee - Bishop 138kV	Walden - April 138kV	193
Bishop - Cedar 138kV	Grimes - Walden 138kV	193
Pee Dee - Bishop 138kV	Webre - Wells 500kV	194
Pee Dee - Bishop 138kV	Cypress - Honey 138kV	195
Bishop - Cedar 138kV	Cypress - Hartburg 500kV	196
Bishop - Cedar 138kV	Walden - April 138kV	197
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	198
Bishop - Cedar 138kV	Webre - Wells 500kV	198
Bishop - Cedar 138kV	Cypress - Honey 138kV	199
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Cedar - Cincinnati 138kV	Huntsville - LINE 558 TAP 138 kV	205
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	205
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Cedar - Cincinnati 138kV	Cypress - Hartburg 500kV	208
Cedar - Cincinnati 138kV	Walden - April 138kV	209
Cedar - Cincinnati 138kV	Webre - Wells 500kV	210
Cedar - Cincinnati 138kV	Cypress - Honey 138kV	211
Pee Dee - Bishop 138kV	Base Case	215
Bishop - Cedar 138kV	Base Case	219
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	226
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	231

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Cedar - Cincinnati 138kV	Base Case	231
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	233
Cincinnati - Walker 138kV	Grimes - Walden 138kV	238
Cincinnati - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	238
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	239
Cincinnati - Walker 138kV	College Station - Bryan 138kV	239
Cincinnati - Walker 138kV	College Station - Grimes 138kV	240
Cincinnati - Walker 138kV	Cypress - Hartburg 500kV	241
Cincinnati - Walker 138kV	Walden - April 138kV	241
Cincinnati - Walker 138kV	Webre - Wells 500kV	243
Rivtrin - Walker 138kV	College Station - Bryan 138kV	244
Rivtrin - Walker 138kV	College Station - Grimes 138kV	245
Rivtrin - Walker 138kV	Grimes - Walden 138kV	245
Rivtrin - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	246
Rivtrin - Walker 138kV	Cypress - Hartburg 500kV	248
Rivtrin - Walker 138kV	Walden - April 138kV	249
Rivtrin - Walker 138kV	Webre - Wells 500kV	251
Cincinnati - Walker 138kV	Base Case	264
Rivtrin - Walker 138kV	Base Case	271
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	284
College Station - Grimes 138kV	Bishop - Cedar 138kV	287
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	295
College Station - Grimes 138kV	Cincinnati - Walker 138kV	316
College Station - Grimes 138kV	Rivtrin - Walker 138kV	321
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	366
College Station - Bryan 138kV	Bishop - Cedar 138kV	369
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	377
College Station - Bryan 138kV	Cincinnati - Walker 138kV	398
College Station - Bryan 138kV	Rivtrin - Walker 138kV	403
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	416
Grimes - Mt. Zion 138kV	Pee Dee - Bishop 138kV	425
Grimes - Mt. Zion 138kV	Bishop - Cedar 138kV	431
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	439
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	443
Bryan - Pee Dee 138kV	Huntsville - LINE 558/91 TAP138 kV	443
Grimes - Mt. Zion 138kV	Cedar - Cincinnati 138kV	448
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	453
Bryan - Pee Dee 138kV	Dolet Hills - S.W. Shreevport 345kV (CLECO)	461
Grimes - Mt. Zion 138kV	Cincinnati - Walker 138kV	496
Bryan - Pee Dee 138kV	Base Case	505
Grimes - Mt. Zion 138kV	Rivtrin - Walker 138kV	506
LINE 558 TAP - MT. Zion 138 kV	Pee Dee - Bishop 138kV	518
LINE 558 TAP - MT. Zion 138 kV	Bishop - Cedar 138kV	524
LINE 558 TAP - MT. Zion 138 kV	Cedar - Cincinnati 138kV	541
Goree - Rivtrin 138kV	LINE 558/91 TAP - Rivtrin 138 kV	551
Goree - Rivtrin 138kV	Huntsville - LINE 558/91 TAP138 kV	551
LINE 558/91 TAP - Rivtrin 138 kV	Bryan - Pee Dee 138kV	557

Limiting Element	Contingency Element	ATC
Huntsville - LINE 558/91 TAP138 kV	Bryan - Pee Dee 138kV	557

## AMRN

Limiting Element	Contingency Element	ATC
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Lake Charles Bulk - Roy S Nelson 138kV ckt 2	150
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	173
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	177
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	178
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	182
Pee Dee - Bishop 138kV	Huntsville - LINE 558 TAP 138 kV	185
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	187
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	189
Bishop - Cedar 138kV	Huntsville - LINE 558 TAP 138 kV	189
Pee Dee - Bishop 138kV	Cypress - Hartburg 500kV	190
Pee Dee - Bishop 138kV	Walden - April 138kV	190
Bishop - Cedar 138kV	Grimes - Walden 138kV	191
Pee Dee - Bishop 138kV	Webre - Wells 500kV	193
Pee Dee - Bishop 138kV	April - Lake Forest 138kV	193
Bishop - Cedar 138kV	Cypress - Hartburg 500kV	194
Bishop - Cedar 138kV	Walden - April 138kV	195
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	195
Bishop - Cedar 138kV	Webre - Wells 500kV	197
Bishop - Cedar 138kV	April - Lake Forest 138kV	197
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Cedar - Cincinnati 138kV	Huntsville - LINE 558 TAP 138 kV	202
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	203
Cedar - Cincinnati 138kV	Cypress - Hartburg 500kV	206
Cedar - Cincinnati 138kV	Walden - April 138kV	206
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Cedar - Cincinnati 138kV	Webre - Wells 500kV	209
Cedar - Cincinnati 138kV	April - Lake Forest 138kV	209
Pee Dee - Bishop 138kV	Base Case	213
Bishop - Cedar 138kV	Base Case	217
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	222
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	228
Cedar - Cincinnati 138kV	Base Case	229
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	230
Cincinnati - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	235

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	235
Cincinnati - Walker 138kV	Grimes - Walden 138kV	235
Cincinnati - Walker 138kV	College Station - Bryan 138kV	239
Cincinnati - Walker 138kV	Walden - April 138kV	239
Cincinnati - Walker 138kV	Cypress - Hartburg 500kV	239
Cincinnati - Walker 138kV	College Station - Grimes 138kV	240
Cincinnati - Walker 138kV	April - Lake Forest 138kV	241
Rivtrin - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	242
Rivtrin - Walker 138kV	Grimes - Walden 138kV	242
Rivtrin - Walker 138kV	College Station - Bryan 138kV	244
Rivtrin - Walker 138kV	College Station - Grimes 138kV	245
Rivtrin - Walker 138kV	Walden - April 138kV	246
Rivtrin - Walker 138kV	Cypress - Hartburg 500kV	246
Rivtrin - Walker 138kV	April - Lake Forest 138kV	248
Cincinnati - Walker 138kV	Base Case	262
Rivtrin - Walker 138kV	Base Case	269
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	285
College Station - Grimes 138kV	Bishop - Cedar 138kV	287
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	295
College Station - Grimes 138kV	Cincinnati - Walker 138kV	316
College Station - Grimes 138kV	Rivtrin - Walker 138kV	321
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	367
College Station - Bryan 138kV	Bishop - Cedar 138kV	369
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	377
Grimes - Mt. Zion 138kV	Pee Dee - Bishop 138kV	381
Grimes - Mt. Zion 138kV	Bishop - Cedar 138kV	386
College Station - Bryan 138kV	Cincinnati - Walker 138kV	398
Grimes - Mt. Zion 138kV	Cedar - Cincinnati 138kV	402
College Station - Bryan 138kV	Rivtrin - Walker 138kV	403
Grimes - Mt. Zion 138kV	Cincinnati - Walker 138kV	444
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	447
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	451
Bryan - Pee Dee 138kV	Huntsville - LINE 558/91 TAP138 kV	451
Grimes - Mt. Zion 138kV	Rivtrin - Walker 138kV	454
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	462
LINE 558 TAP - MT. Zion 138 kV	Pee Dee - Bishop 138kV	464
LINE 558 TAP - MT. Zion 138 kV	Bishop - Cedar 138kV	470
Bryan - Pee Dee 138kV	Dolet Hills - S.W. Shreevport 345kV (CLECO)	470
LINE 558 TAP - MT. Zion 138 kV	Cedar - Cincinnati 138kV	485
Bryan - Pee Dee 138kV	Base Case	514
LINE 558 TAP - MT. Zion 138 kV	Cincinnati - Walker 138kV	527
Grimes - Walden 138kV	Pee Dee - Bishop 138kV	536
LINE 558 TAP - MT. Zion 138 kV	Rivtrin - Walker 138kV	537
Grimes - Walden 138kV	Bishop - Cedar 138kV	539
Grimes - Walden 138kV	Cedar - Cincinnati 138kV	548
Goree - Rivtrin 138kV	LINE 558/91 TAP - Rivtrin 138 kV	553
Goree - Rivtrin 138kV	Huntsville - LINE 558/91 TAP138 kV	553

Limiting Element	Contingency Element	ATC
Grimes - Walden 138kV	Cincinnati - Walker 138kV	571
Huntsville - LINE 558 TAP 138 kV	Pee Dee - Bishop 138kV	574
LINE 558/91 TAP - Rivtrin 138 kV	Bryan - Pee Dee 138kV	575

## CLECO

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Richard 500/138kV transformer 1	Richard 500/138kV transformer 2	0
Judice - Scott1 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	0
Semere - Scott2 138kV	Habetz - Richard 138kV	61
Semere - Scott2 138kV	Greenwood - Terrebone 115kV	69
Semere - Scott2 138kV	Greenwood - Terrebone 115kV	69
Semere - Scott2 138kV	North Crowley - Richard 138kV	108
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Lake Charles Bulk - Roy S Nelson 138kV ckt 2	138
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	172
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	176
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	177
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	181
Pee Dee - Bishop 138kV	Huntsville - LINE 558 TAP 138 kV	184
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	186
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	188
Bishop - Cedar 138kV	Huntsville - LINE 558 TAP 138 kV	188
Pee Dee - Bishop 138kV	Cypress - Hartburg 500kV	189
Pee Dee - Bishop 138kV	Walden - April 138kV	189
Bishop - Cedar 138kV	Grimes - Walden 138kV	190
Pee Dee - Bishop 138kV	Webre - Wells 500kV	191
Pee Dee - Bishop 138kV	Webre - Wells 500kV	191
Pee Dee - Bishop 138kV	April - Lake Forest 138kV	192
Bishop - Cedar 138kV	Cypress - Hartburg 500kV	193
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	193
Bishop - Cedar 138kV	Walden - April 138kV	194
Bishop - Cedar 138kV	Webre - Wells 500kV	195
Bishop - Cedar 138kV	Webre - Wells 500kV	195
Bishop - Cedar 138kV	April - Lake Forest 138kV	196
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Cedar - Cincinnati 138kV	Huntsville - LINE 558 TAP 138 kV	200
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Cedar - Cincinnati 138kV	Cypress - Hartburg 500kV	205
Cedar - Cincinnati 138kV	Walden - April 138kV	205
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Cedar - Cincinnati 138kV	Webre - Wells 500kV	207
Cedar - Cincinnati 138kV	Webre - Wells 500kV	207
Cedar - Cincinnati 138kV	April - Lake Forest 138kV	208
Pee Dee - Bishop 138kV	Base Case	212
Bishop - Cedar 138kV	Base Case	216
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	221
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	226
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	228
Cedar - Cincinnati 138kV	Base Case	228
Cincinnati - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	233
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	234
Cincinnati - Walker 138kV	Grimes - Walden 138kV	234
Cincinnati - Walker 138kV	Walden - April 138kV	237
Cincinnati - Walker 138kV	Cypress - Hartburg 500kV	238
Cincinnati - Walker 138kV	College Station - Bryan 138kV	239
Cincinnati - Walker 138kV	Webre - Wells 500kV	239
Cincinnati - Walker 138kV	Webre - Wells 500kV	239
Rivtrin - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	241
Rivtrin - Walker 138kV	Grimes - Walden 138kV	241
Rivtrin - Walker 138kV	College Station - Bryan 138kV	244
Rivtrin - Walker 138kV	College Station - Grimes 138kV	245
Rivtrin - Walker 138kV	Walden - April 138kV	245
Rivtrin - Walker 138kV	Cypress - Hartburg 500kV	245
Rivtrin - Walker 138kV	Webre - Wells 500kV	247
Cincinnati - Walker 138kV	Base Case	261
Rivtrin - Walker 138kV	Base Case	268
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	285
College Station - Grimes 138kV	Bishop - Cedar 138kV	287
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	295
College Station - Grimes 138kV	Cincinnati - Walker 138kV	316
College Station - Grimes 138kV	Rivtrin - Walker 138kV	321
Semere - Scott2 138kV	Wells 500/230kV transformer	351
Habetz - Richard 138kV	Bonin - Labbe 230kV (LAFA)	358
Grimes - Mt. Zion 138kV	Pee Dee - Bishop 138kV	366
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	367
College Station - Bryan 138kV	Bishop - Cedar 138kV	369
Grimes - Mt. Zion 138kV	Bishop - Cedar 138kV	371
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	377
Grimes - Mt. Zion 138kV	Cedar - Cincinnati 138kV	386
College Station - Bryan 138kV	Cincinnati - Walker 138kV	398
College Station - Bryan 138kV	Rivtrin - Walker 138kV	403
Greenwood - Humphrey 115kV	Webre - Wells 500kV	425

Limiting Element	Contingency Element	ATC
Grimes - Mt. Zion 138kV	Cincinnati - Walker 138kV	426
Grimes - Mt. Zion 138kV	Rivtrin - Walker 138kV	435
Richard - Scott1 138kV	Bonin - Labbe 230kV (LAFA)	439
LINE 558 TAP - MT. Zion 138 kV	Pee Dee - Bishop 138kV	446
Greenwood - Humphrey 115kV	Webre - Wells 500kV	449
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	450
LINE 558 TAP - MT. Zion 138 kV	Bishop - Cedar 138kV	451
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	455
Bryan - Pee Dee 138kV	Huntsville - LINE 558/91 TAP138 kV	455
LINE 558 TAP - MT. Zion 138 kV	Cedar - Cincinnati 138kV	466
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	466
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	477
Richard 500/138kV transformer 1	Richard 500/138kV transformer 2	484
North Crowley - Scott1 138kV	Habetz - Richard 138kV	487
Moril - Cecelia 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	499
Judice - Meaux 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	501
LINE 558 TAP - MT. Zion 138 kV	Cincinnati - Walker 138kV	506
Grimes - Walden 138kV	Pee Dee - Bishop 138kV	515
LINE 558 TAP - MT. Zion 138 kV	Rivtrin - Walker 138kV	515
Bryan - Pee Dee 138kV	Base Case	518
Grimes - Walden 138kV	Bishop - Cedar 138kV	518
Grimes - Walden 138kV	Cedar - Cincinnati 138kV	526
North Crowley - Scott1 138kV	Richard - Scott1 138kV	543
Grimes - Walden 138kV	Cincinnati - Walker 138kV	548
Huntsville - LINE 558 TAP 138 kV	Pee Dee - Bishop 138kV	551
Grimes - Walden 138kV	Rivtrin - Walker 138kV	553
Huntsville - LINE 558 TAP 138 kV	Bishop - Cedar 138kV	556
Goree - Rivtrin 138kV	LINE 558/91 TAP - Rivtrin 138 kV	556
Goree - Rivtrin 138kV	Huntsville - LINE 558/91 TAP138 kV	556
Semere - Scott2 138kV	Livonia - Wilbert 138kV	561
Huntsville - LINE 558 TAP 138 kV	Cedar - Cincinnati 138kV	571

## EES

Limiting Element	Contingency Element	ATC
Baxter Wilson - Ray Braswell 500kV	Franklin - Grand Gulf 500kV	0
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	166
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Lake Charles Bulk - Roy S Nelson 138kV ckt 2	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	171
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	175
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	176



<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	180
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Pee Dee - Bishop 138kV	Huntsville - LINE 558 TAP 138 kV	183
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	185
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	187
Bishop - Cedar 138kV	Huntsville - LINE 558 TAP 138 kV	187
Pee Dee - Bishop 138kV	Cypress - Hartburg 500kV	188
Pee Dee - Bishop 138kV	Walden - April 138kV	189
Bishop - Cedar 138kV	Grimes - Walden 138kV	189
Pee Dee - Bishop 138kV	Webre - Wells 500kV	191
Pee Dee - Bishop 138kV	April - Lake Forest 138kV	191
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	192
Bishop - Cedar 138kV	Cypress - Hartburg 500kV	192
Bishop - Cedar 138kV	Walden - April 138kV	193
Bishop - Cedar 138kV	April - Lake Forest 138kV	195
Bishop - Cedar 138kV	Webre - Wells 500kV	195
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	198
Cedar - Cincinnati 138kV	Huntsville - LINE 558 TAP 138 kV	199
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	201
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Cedar - Cincinnati 138kV	Cypress - Hartburg 500kV	205
Cedar - Cincinnati 138kV	Walden - April 138kV	205
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Cedar - Cincinnati 138kV	April - Lake Forest 138kV	207
Cedar - Cincinnati 138kV	Webre - Wells 500kV	207
Pee Dee - Bishop 138kV	Base Case	212
Bishop - Cedar 138kV	Base Case	216
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	220
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	225
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	227
Cedar - Cincinnati 138kV	Base Case	228
Cincinnati - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	232
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	233
Cincinnati - Walker 138kV	Grimes - Walden 138kV	234
Cincinnati - Walker 138kV	Walden - April 138kV	237
Cincinnati - Walker 138kV	Cypress - Hartburg 500kV	237
Cincinnati - Walker 138kV	College Station - Bryan 138kV	239
Cincinnati - Walker 138kV	April - Lake Forest 138kV	240
Rivtrin - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	240
Cincinnati - Walker 138kV	Webre - Wells 500kV	240
Rivtrin - Walker 138kV	Grimes - Walden 138kV	241
Rivtrin - Walker 138kV	Walden - April 138kV	244
Rivtrin - Walker 138kV	College Station - Bryan 138kV	244
Rivtrin - Walker 138kV	Cypress - Hartburg 500kV	245
Rivtrin - Walker 138kV	College Station - Grimes 138kV	245

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Rivtrin - Walker 138kV	April - Lake Forest 138kV	247
Cincinnati - Walker 138kV	Base Case	260
Rivtrin - Walker 138kV	Base Case	268
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	285
College Station - Grimes 138kV	Bishop - Cedar 138kV	288
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	296
College Station - Grimes 138kV	Cincinnati - Walker 138kV	318
College Station - Grimes 138kV	Rivtrin - Walker 138kV	322
Grimes - Mt. Zion 138kV	Pee Dee - Bishop 138kV	348
Grimes - Mt. Zion 138kV	Bishop - Cedar 138kV	353
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	368
Grimes - Mt. Zion 138kV	Cedar - Cincinnati 138kV	368
College Station - Bryan 138kV	Bishop - Cedar 138kV	370
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	378
College Station - Bryan 138kV	Cincinnati - Walker 138kV	400
College Station - Bryan 138kV	Rivtrin - Walker 138kV	405
Grimes - Mt. Zion 138kV	Cincinnati - Walker 138kV	407
Grimes - Mt. Zion 138kV	Rivtrin - Walker 138kV	416
LINE 558 TAP - MT. Zion 138 kV	Pee Dee - Bishop 138kV	425
LINE 558 TAP - MT. Zion 138 kV	Bishop - Cedar 138kV	430
LINE 558 TAP - MT. Zion 138 kV	Cedar - Cincinnati 138kV	445
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	454
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	459
Bryan - Pee Dee 138kV	Huntsville - LINE 558/91 TAP138 kV	459
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	470
Bryan - Pee Dee 138kV	Dolet Hills - S.W. Shreevport 345kV (CLECO)	478
LINE 558 TAP - MT. Zion 138 kV	Cincinnati - Walker 138kV	484
Grimes - Walden 138kV	Pee Dee - Bishop 138kV	488
Grimes - Walden 138kV	Bishop - Cedar 138kV	491
LINE 558 TAP - MT. Zion 138 kV	Rivtrin - Walker 138kV	493
Grimes - Walden 138kV	Cedar - Cincinnati 138kV	499
Grimes - Walden 138kV	Cincinnati - Walker 138kV	520
Bryan - Pee Dee 138kV	Base Case	522
Grimes - Walden 138kV	Rivtrin - Walker 138kV	525
Huntsville - LINE 558 TAP 138 kV	Pee Dee - Bishop 138kV	528
Huntsville - LINE 558 TAP 138 kV	Bishop - Cedar 138kV	533
Huntsville - LINE 558 TAP 138 kV	Cedar - Cincinnati 138kV	548
Goree - Rivtrin 138kV	LINE 558/91 TAP - Rivtrin 138 kV	549
Goree - Rivtrin 138kV	Huntsville - LINE 558/91 TAP138 kV	549

## EMDE

Limiting Element	Contingency Element	ATC
Bull Shoals - Bull Shoals Dam SPA 161kV	St. Joe - Hilltop 161kV	0
Bull Shoals - Bull Shoals Dam SPA 161kV	Everton - St. Joe 161kV	0
Bull Shoals - Bull Shoals Dam SPA 161kV	Harrison East - Everton 161kV	0
Melborne - Sage 161kV	Dell - Independence SES 500kV	0
Melborne - Sage 161kV	ANO - Fort Smith 500kV	0
Danville - North Magazine REA 161kV	ANO - Fort Smith 500kV	0
St. Joe - Hilltop 161kV	Bull Shoals - Bull Shoals Dam SPA 161kV	0
Melborne - Sage 161kV	Newport - Newport Industrial 161kV	0
St. Joe - Hilltop 161kV	Bull Shoals - Flippin 161kV	0
Melborne - Sage 161kV	Newport AB - Newport Industrial 161kV	0
Melborne - Sage 161kV	Cash - Newport AB 161kV	0
Melborne - Sage 161kV	Cash - Jonesboro 161kV	0
Melborne - Sage 161kV	Sansouci - Shelby (TVA) 500kV	0
Melborne - Sage 161kV	Sage - Guion 161kV	0
Melborne - Sage 161kV	Newport - Swifton 161kV	0
St. Joe - Hilltop 161kV	Flippin - Summit 161kV	0
Harrison East - Everton 161kV	Bull Shoals - Bull Shoals Dam SPA 161kV	0
Melborne - Sage 161kV	Mountain View - Guion 161kV	0
Harrison East - Everton 161kV	Bull Shoals - Flippin 161kV	16
Calico Rock - Melborne 161kV	Dell - Independence SES 500kV	87
Calico Rock - Melborne 161kV	ANO - Fort Smith 500kV	90
St. Joe - Hilltop 161kV	Harrison East - Summit 161kV	94
Harrison East - Everton 161kV	Flippin - Summit 161kV	124
Harrison East - Summit 161kV	St. Joe - Hilltop 161kV	139
Calico Rock - Norfolk 161kV	ANO - Fort Smith 500kV	155
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Lake Charles Bulk - Roy S Nelson 138kV ckt 2	158
Calico Rock - Norfolk 161kV	Dell - Independence SES 500kV	158
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Calico Rock - Melborne 161kV	Newport - Newport Industrial 161kV	172
Harrison East - Summit 161kV	Everton - St. Joe 161kV	173
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	178
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	179
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	183
Pee Dee - Bishop 138kV	Huntsville - LINE 558 TAP 138 kV	186
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	187
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	190
Bishop - Cedar 138kV	Huntsville - LINE 558 TAP 138 kV	190
Pee Dee - Bishop 138kV	Cypress - Hartburg 500kV	190
Pee Dee - Bishop 138kV	Walden - April 138kV	191

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Bishop - Cedar 138kV	Grimes - Walden 138kV	192
Calico Rock - Melborne 161kV	Newport AB - Newport Industrial 161kV	192
Pee Dee - Bishop 138kV	Webre - Wells 500kV	193
Pee Dee - Bishop 138kV	Cypress - Honey 138kV	193
Bishop - Cedar 138kV	Cypress - Hartburg 500kV	194
Bishop - Cedar 138kV	Walden - April 138kV	195
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	195
Bishop - Cedar 138kV	Webre - Wells 500kV	197
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Bishop - Cedar 138kV	April - Lake Forest 138kV	198
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Cedar - Cincinnati 138kV	Huntsville - LINE 558 TAP 138 kV	202
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	203
Cedar - Cincinnati 138kV	Cypress - Hartburg 500kV	206
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Cedar - Cincinnati 138kV	Walden - April 138kV	207
Cedar - Cincinnati 138kV	Webre - Wells 500kV	209
Cedar - Cincinnati 138kV	April - Lake Forest 138kV	210
Pee Dee - Bishop 138kV	Base Case	214
Bishop - Cedar 138kV	Base Case	218
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	223
Calico Rock - Melborne 161kV	Cash - Newport AB 161kV	225
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	228
Cedar - Cincinnati 138kV	Base Case	230
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	230
Cincinnati - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	235
Cincinnati - Walker 138kV	Grimes - Walden 138kV	236
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	236
Harrison East - Summit 161kV	Harrison East - Everton 161kV	236
Cincinnati - Walker 138kV	College Station - Bryan 138kV	239
Cincinnati - Walker 138kV	Walden - April 138kV	239
Cincinnati - Walker 138kV	Cypress - Hartburg 500kV	239
Cincinnati - Walker 138kV	College Station - Grimes 138kV	240
Cincinnati - Walker 138kV	Webre - Wells 500kV	242
Rivtrin - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	243
Rivtrin - Walker 138kV	Grimes - Walden 138kV	243
Rivtrin - Walker 138kV	College Station - Bryan 138kV	244
Rivtrin - Walker 138kV	College Station - Grimes 138kV	245
Calico Rock - Norfolk 161kV	Newport - Newport Industrial 161kV	246
Rivtrin - Walker 138kV	Walden - April 138kV	246
Rivtrin - Walker 138kV	Cypress - Hartburg 500kV	247
Rivtrin - Walker 138kV	Webre - Wells 500kV	249
St. Joe - Hilltop 161kV	Eureka Springs - Osage Springs 161kV	251
Calico Rock - Melborne 161kV	Cash - Jonesboro 161kV	252
Harrison East - Everton 161kV	Harrison East - Summit 161kV	253
St. Joe - Hilltop 161kV	ANO - Fort Smith 500kV	255

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Cincinnati - Walker 138kV	Base Case	262
Calico Rock - Norfolk 161kV	Newport AB - Newport Industrial 161kV	265
Pleasant Hill 500/161kV transformer	ANO 500/115kV transformer	265
Rivtrin - Walker 138kV	Base Case	269
Calico Rock - Melborne 161kV	Newport - Swifton 161kV	279
Calico Rock - Melborne 161kV	Sansouci - Shelby (TVA) 500kV	284
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	284
College Station - Grimes 138kV	Bishop - Cedar 138kV	287
Calico Rock - Melborne 161kV	Sage - Guion 161kV	292
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	295
Calico Rock - Norfolk 161kV	Cash - Newport AB 161kV	299
Bull Shoals - Bull Shoals Dam SPA 161kV	Bull Shoals - Lead Hills 161kV	305
Calico Rock - Melborne 161kV	Hoxies AECC - Swifton 161 kV	310
College Station - Grimes 138kV	Cincinnati - Walker 138kV	316
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	320
College Station - Grimes 138kV	Rivtrin - Walker 138kV	321
Calico Rock - Norfolk 161kV	Cash - Jonesboro 161kV	326
Calico Rock - Norfolk 161kV	Newport - Swifton 161kV	350
Calico Rock - Norfolk 161kV	Sansouci - Shelby (TVA) 500kV	361
Bull Shoals - Bull Shoals Dam SPA 161kV	Clevcov - Lead HL 161kV	364
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	366
Calico Rock - Norfolk 161kV	Sage - Guion 161kV	367
College Station - Bryan 138kV	Bishop - Cedar 138kV	369
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	377
Calico Rock - Norfolk 161kV	Hoxies AECC - Swifton 161 kV	382
Grimes - Mt. Zion 138kV	Pee Dee - Bishop 138kV	390
Grimes - Mt. Zion 138kV	Bishop - Cedar 138kV	396
College Station - Bryan 138kV	Cincinnati - Walker 138kV	398
College Station - Bryan 138kV	Rivtrin - Walker 138kV	403
Grimes - Mt. Zion 138kV	Cedar - Cincinnati 138kV	412
Harrison East - Everton 161kV	ANO - Fort Smith 500kV	424
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	445
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	449
Bryan - Pee Dee 138kV	Huntsville - LINE 558/91 TAP138 kV	449
Grimes - Mt. Zion 138kV	Cincinnati - Walker 138kV	455
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	460
Grimes - Mt. Zion 138kV	Rivtrin - Walker 138kV	464
Bryan - Pee Dee 138kV	Dolet Hills - S.W. Shreevport 345kV (CLECO)	468
LINE 558 TAP - MT. Zion 138 kV	Pee Dee - Bishop 138kV	475
LINE 558 TAP - MT. Zion 138 kV	Bishop - Cedar 138kV	481
Harrison East - Everton 161kV	Eureka Springs - Osage Springs 161kV	482
LINE 558 TAP - MT. Zion 138 kV	Cedar - Cincinnati 138kV	497
Bryan - Pee Dee 138kV	Base Case	512
Russellville South - Dardanelle Dam 161kV	ANO - Fort Smith 500kV	528
LINE 558 TAP - MT. Zion 138 kV	Cincinnati - Walker 138kV	540
Melborne - Sage 161kV	Base Case	542
Grimes - Walden 138kV	Pee Dee - Bishop 138kV	549

Limiting Element	Contingency Element	ATC
LINE 558 TAP - MT. Zion 138 kV	Rivtrin - Walker 138kV	550
Grimes - Walden 138kV	Bishop - Cedar 138kV	552
Goree - Rivtrin 138kV	LINE 558/91 TAP - Rivtrin 138 kV	553
Goree - Rivtrin 138kV	Huntsville - LINE 558/91 TAP138 kV	553
Grimes - Walden 138kV	Cedar - Cincinnati 138kV	561
LINE 558/91 TAP - Rivtrin 138 kV	Bryan - Pee Dee 138kV	571
Huntsville - LINE 558/91 TAP138 kV	Bryan - Pee Dee 138kV	571

## Lafa

Limiting Element	Contingency Element	ATC
Baxter Wilson - Ray Braswell 500kV	Franklin - Grand Gulf 500kV	0
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Semere - Scott2 138kV	Bonin - Labbe 230kV (Lafa)	0
North Crowley - Scott1 138kV	Bonin - Labbe 230kV (Lafa)	0
Semere - Scott2 138kV	Wells (CLECO) - Point Mouton (Lafa) 230kV	0
Semere - Scott2 138kV	Point Des Mouton (Lafa) - Labbe (Lafa) 230kV	0
Richard 500/138kV transformer 1	Richard 500/138kV transformer 2	0
Scott1 - Bonin 138kV	Bonin - Labbe 230kV (Lafa)	0
Colonial Academy - Richard 138kV	Bonin - Labbe 230kV (Lafa)	0
North Crowley - Scott1 138kV	Wells (CLECO) - Point Mouton (Lafa) 230kV	0
North Crowley - Scott1 138kV	Point Des Mouton (Lafa) - Labbe (Lafa) 230kV	0
Scott1 - Bonin 138kV	Wells (CLECO) - Point Mouton (Lafa) 230kV	12
Semere - Scott2 138kV	Habetz - Richard 138kV	24
Colonial Academy - Richard 138kV	Wells (CLECO) - Point Mouton (Lafa) 230kV	28
Semere - Scott2 138kV	Greenwood - Terrebone 115kV	30
Scott1 - Bonin 138kV	Point Des Mouton (Lafa) - Labbe (Lafa) 230kV	44
Colonial Academy - Richard 138kV	Point Des Mouton (Lafa) - Labbe (Lafa) 230kV	61
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Lake Charles Bulk - Roy S Nelson 138kV ckt 2	80
Habetz - Richard 138kV	Bonin - Labbe 230kV (Lafa)	90
Acadia - Colonial Academy 138kV	Bonin - Labbe 230kV (Lafa)	106
Habetz - Richard 138kV	Wells (CLECO) - Point Mouton (Lafa) 230kV	114
Richard - Scott1 138kV	Bonin - Labbe 230kV (Lafa)	117
Acadia - Colonial Academy 138kV	Wells (CLECO) - Point Mouton (Lafa) 230kV	121
Richard - Scott1 138kV	Wells (CLECO) - Point Mouton (Lafa) 230kV	128
Semere - Scott2 138kV	Wells 500/230kV transformer	147
Habetz - Richard 138kV	Point Des Mouton (Lafa) - Labbe (Lafa) 230kV	150
Acadia - Colonial Academy 138kV	Point Des Mouton (Lafa) - Labbe (Lafa) 230kV	154
Richard - Scott1 138kV	Point Des Mouton (Lafa) - Labbe (Lafa) 230kV	159
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
North Crowley - Scott1 138kV	Habetz - Richard 138kV	168
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	170

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	174
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	175
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	179
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Pee Dee - Bishop 138kV	Huntsville - LINE 558 TAP 138 kV	182
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	185
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	186
Bishop - Cedar 138kV	Huntsville - LINE 558 TAP 138 kV	186
Pee Dee - Bishop 138kV	Walden - April 138kV	188
Pee Dee - Bishop 138kV	Cypress - Hartburg 500kV	188
Bishop - Cedar 138kV	Grimes - Walden 138kV	189
Pee Dee - Bishop 138kV	Webre - Wells 500kV	189
Acadia GSU - Scanlan 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	190
Pee Dee - Bishop 138kV	April - Lake Forest 138kV	191
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	191
Bishop - Cedar 138kV	Walden - April 138kV	192
Bishop - Cedar 138kV	Cypress - Hartburg 500kV	192
Bishop - Cedar 138kV	Webre - Wells 500kV	193
Bishop - Cedar 138kV	April - Lake Forest 138kV	195
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Cedar - Cincinnati 138kV	Huntsville - LINE 558 TAP 138 kV	198
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	200
Champagne - East Opelousas 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	201
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Cedar - Cincinnati 138kV	Walden - April 138kV	204
Cedar - Cincinnati 138kV	Cypress - Hartburg 500kV	204
Cedar - Cincinnati 138kV	Webre - Wells 500kV	205
Cedar - Cincinnati 138kV	April - Lake Forest 138kV	206
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Semere - Scott2 138kV	Bonin - Cecelia 138kV	211
Pee Dee - Bishop 138kV	Base Case	211
Bishop - Cedar 138kV	Base Case	215
Acadia GSU - Scanlan 138kV	Bonin - Labbe 230kV (LAFA)	218
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	219
Acadia GSU - Scanlan 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	223
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	224
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	226
Cedar - Cincinnati 138kV	Base Case	227
North Crowley - Richard 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	229
Cincinnati - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	231
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	231
Cincinnati - Walker 138kV	Grimes - Walden 138kV	232
Cincinnati - Walker 138kV	Walden - April 138kV	236

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Champagne - East Opelousas 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	236
Cincinnati - Walker 138kV	Cypress - Hartburg 500kV	236
Cincinnati - Walker 138kV	Webre - Wells 500kV	237
Rivtrin - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	238
Cincinnati - Walker 138kV	April - Lake Forest 138kV	238
Rivtrin - Walker 138kV	Grimes - Walden 138kV	239
Champagne - East Opelousas 138kV	Bonin - Labbe 230kV (LAFA)	240
Rivtrin - Walker 138kV	Walden - April 138kV	243
Rivtrin - Walker 138kV	College Station - Bryan 138kV	243
Rivtrin - Walker 138kV	Cypress - Hartburg 500kV	244
Rivtrin - Walker 138kV	College Station - Grimes 138kV	244
Rivtrin - Walker 138kV	Webre - Wells 500kV	245
Colonial Academy - Richard 138kV	Habetz - Richard 138kV	252
North Crowley - Scott1 138kV	Wells 500/230kV transformer	256
Cincinnati - Walker 138kV	Base Case	259
North Crowley - Richard 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	260
North Crowley - Scott1 138kV	Greenwood - Terrebone 115kV	265
Rivtrin - Walker 138kV	Base Case	266
Greenwood - Humphrey 115kV	Webre - Wells 500kV	266
North Crowley - Richard 138kV	Bonin - Labbe 230kV (LAFA)	277
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	285
Colonial Academy - Richard 138kV	Greenwood - Terrebone 115kV	286
College Station - Grimes 138kV	Bishop - Cedar 138kV	287
Champagne - East Opelousas 138kV	Webre - Wells 500kV	289
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	295
College Station - Grimes 138kV	Cincinnati - Walker 138kV	316
Cecelia - Semere 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	320
College Station - Grimes 138kV	Rivtrin - Walker 138kV	321
Grimes - Mt. Zion 138kV	Pee Dee - Bishop 138kV	342
Grimes - Mt. Zion 138kV	Bishop - Cedar 138kV	347
Cecelia - Semere 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	353
Grimes - Mt. Zion 138kV	Cedar - Cincinnati 138kV	361
Gibson - Humphrey 115kV	Webre - Wells 500kV	363
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	367
Habetz - Richard 138kV	Acadian - Bonin 230kV (LAFA)	367
College Station - Bryan 138kV	Bishop - Cedar 138kV	369
Acadia - Colonial Academy 138kV	Habetz - Richard 138kV	369
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	377
Richard - Scott1 138kV	Habetz - Richard 138kV	383
North Crowley - Scott1 138kV	Bonin 230/138kV transformer (LAFA)	385
Scott1 - Bonin 138kV	Habetz - Richard 138kV	389
Colonial Academy - Richard 138kV	Wells 500/230kV transformer	391
College Station - Bryan 138kV	Cincinnati - Walker 138kV	398
Grimes - Mt. Zion 138kV	Cincinnati - Walker 138kV	399
College Station - Bryan 138kV	Rivtrin - Walker 138kV	403
Grimes - Mt. Zion 138kV	Rivtrin - Walker 138kV	407
LINE 558 TAP - MT. Zion 138 kV	Pee Dee - Bishop 138kV	417



<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Acadia - Colonial Academy 138kV	Greenwood - Terrebone 115kV	418
LINE 558 TAP - MT. Zion 138 kV	Bishop - Cedar 138kV	422
Scott1 - Bonin 138kV	Wells 500/230kV transformer	424
Cecelia - Semere 138kV	Bonin - Labbe 230kV (LAFA)	427
Scott1 - Bonin 138kV	Bonin 230/138kV transformer (LAFA)	435
LINE 558 TAP - MT. Zion 138 kV	Cedar - Cincinnati 138kV	436
Greenwood - Terrebone 115kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	449
Richard - Scott1 138kV	North Crowley - Richard 138kV	451
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	456
Acadia GSU - Scanlan 138kV	Habetz - Richard 138kV	457
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	461
Bryan - Pee Dee 138kV	Huntsville - LINE 558/91 TAP138 kV	461
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	473
LINE 558 TAP - MT. Zion 138 kV	Cincinnati - Walker 138kV	474
Richard 500/138kV transformer 2	Wells (CLECO) - Point Mouton (LAFA) 230kV	477
Richard - Scott1 138kV	Wells 500/230kV transformer	478
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Roy S. Nelson - Richard 500kV	480
Habetz - Richard 138kV	Flander - Acadian 230kV (LAFA)	480
Grimes - Walden 138kV	Pee Dee - Bishop 138kV	481
Bryan - Pee Dee 138kV	Dolet Hills - S.W. Shreevport 345kV (CLECO)	481
LINE 558 TAP - MT. Zion 138 kV	Rivtrin - Walker 138kV	482
Greenwood - Terrebone 115kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	482
Grimes - Walden 138kV	Bishop - Cedar 138kV	483
Richard - Scott1 138kV	North Crowley - Scott1 138kV	484
Grimes - Walden 138kV	Cedar - Cincinnati 138kV	491
Scanlan - Scott2 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	491
Greenwood - Terrebone 115kV	Richard - Wells 500kV	493
Richard - Scott1 138kV	Greenwood - Terrebone 115kV	509
North Crowley - Richard 138kV	Habetz - Richard 138kV	511
Grimes - Walden 138kV	Cincinnati - Walker 138kV	511
Richard 500/138kV transformer 2	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	513
Huntsville - LINE 558 TAP 138 kV	Pee Dee - Bishop 138kV	515
Grimes - Walden 138kV	Rivtrin - Walker 138kV	516
Acadia - Colonial Academy 138kV	Wells 500/230kV transformer	517
Acadia GSU - Scanlan 138kV	Greenwood - Terrebone 115kV	517
Huntsville - LINE 558 TAP 138 kV	Bishop - Cedar 138kV	520
Scanlan - Scott2 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	523
Bryan - Pee Dee 138kV	Base Case	524
Scott1 - Bonin 138kV	Greenwood - Terrebone 115kV	528
Scott1 - Bonin 138kV	Judice - Scott1 138kV	534
Huntsville - LINE 558 TAP 138 kV	Cedar - Cincinnati 138kV	534
Goree - Rivtrin 138kV	LINE 558/91 TAP - Rivtrin 138 kV	555
Goree - Rivtrin 138kV	Huntsville - LINE 558/91 TAP138 kV	555
Scott1 - Bonin 138kV	Flander - Beadle 230kV (LAFA)	570
Huntsville - LINE 558 TAP 138 kV	Cincinnati - Walker 138kV	572

# LAGN

Limiting Element	Contingency Element	ATC
Baxter Wilson - Ray Braswell 500kV	Franklin - Grand Gulf 500kV	0
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Lake Charles Bulk - Roy S Nelson 138kV ckt 2	137
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	170
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	174
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	175
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	179
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Pee Dee - Bishop 138kV	Huntsville - LINE 558 TAP 138 kV	182
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	185
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	186
Bishop - Cedar 138kV	Huntsville - LINE 558 TAP 138 kV	186
Pee Dee - Bishop 138kV	Walden - April 138kV	188
Pee Dee - Bishop 138kV	Cypress - Hartburg 500kV	188
Bishop - Cedar 138kV	Grimes - Walden 138kV	189
Pee Dee - Bishop 138kV	April - Lake Forest 138kV	190
Pee Dee - Bishop 138kV	Webre - Wells 500kV	191
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	191
Bishop - Cedar 138kV	Walden - April 138kV	192
Bishop - Cedar 138kV	Cypress - Hartburg 500kV	192
Bishop - Cedar 138kV	April - Lake Forest 138kV	194
Bishop - Cedar 138kV	Webre - Wells 500kV	195
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Cedar - Cincinnati 138kV	Huntsville - LINE 558 TAP 138 kV	198
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	200
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Cedar - Cincinnati 138kV	Walden - April 138kV	204
Cedar - Cincinnati 138kV	Cypress - Hartburg 500kV	204
Cedar - Cincinnati 138kV	April - Lake Forest 138kV	206
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Cedar - Cincinnati 138kV	Webre - Wells 500kV	207
Pee Dee - Bishop 138kV	Base Case	211
Bishop - Cedar 138kV	Base Case	215
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	219
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	224
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	226
Cedar - Cincinnati 138kV	Base Case	227
Cincinnati - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	231
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	231
Cincinnati - Walker 138kV	Grimes - Walden 138kV	232

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Cincinnati - Walker 138kV	Walden - April 138kV	235
Cincinnati - Walker 138kV	Cypress - Hartburg 500kV	237
Rivtrin - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	238
Cincinnati - Walker 138kV	April - Lake Forest 138kV	238
Cincinnati - Walker 138kV	College Station - Bryan 138kV	238
Cincinnati - Walker 138kV	Webre - Wells 500kV	239
Rivtrin - Walker 138kV	Grimes - Walden 138kV	239
Rivtrin - Walker 138kV	Walden - April 138kV	243
Rivtrin - Walker 138kV	College Station - Bryan 138kV	243
Rivtrin - Walker 138kV	Cypress - Hartburg 500kV	244
Rivtrin - Walker 138kV	College Station - Grimes 138kV	244
Rivtrin - Walker 138kV	April - Lake Forest 138kV	245
Cincinnati - Walker 138kV	Base Case	259
Rivtrin - Walker 138kV	Base Case	266
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	285
College Station - Grimes 138kV	Bishop - Cedar 138kV	287
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	295
College Station - Grimes 138kV	Cincinnati - Walker 138kV	316
College Station - Grimes 138kV	Rivtrin - Walker 138kV	321
Grimes - Mt. Zion 138kV	Pee Dee - Bishop 138kV	341
Grimes - Mt. Zion 138kV	Bishop - Cedar 138kV	346
Grimes - Mt. Zion 138kV	Cedar - Cincinnati 138kV	360
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	367
College Station - Bryan 138kV	Bishop - Cedar 138kV	369
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	377
Grimes - Mt. Zion 138kV	Cincinnati - Walker 138kV	398
College Station - Bryan 138kV	Cincinnati - Walker 138kV	398
College Station - Bryan 138kV	Rivtrin - Walker 138kV	403
Grimes - Mt. Zion 138kV	Rivtrin - Walker 138kV	406
LINE 558 TAP - MT. Zion 138 kV	Pee Dee - Bishop 138kV	416
LINE 558 TAP - MT. Zion 138 kV	Bishop - Cedar 138kV	421
LINE 558 TAP - MT. Zion 138 kV	Cedar - Cincinnati 138kV	435
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	456
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	462
Bryan - Pee Dee 138kV	Huntsville - LINE 558/91 TAP138 kV	462
LINE 558 TAP - MT. Zion 138 kV	Cincinnati - Walker 138kV	472
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	473
Grimes - Walden 138kV	Pee Dee - Bishop 138kV	480
Bryan - Pee Dee 138kV	Dolet Hills - S.W. Shreevport 345kV (CLECO)	481
LINE 558 TAP - MT. Zion 138 kV	Rivtrin - Walker 138kV	481
Grimes - Walden 138kV	Bishop - Cedar 138kV	482
Grimes - Walden 138kV	Cedar - Cincinnati 138kV	490
Grimes - Walden 138kV	Cincinnati - Walker 138kV	510
Huntsville - LINE 558 TAP 138 kV	Pee Dee - Bishop 138kV	514
Grimes - Walden 138kV	Rivtrin - Walker 138kV	515
Huntsville - LINE 558 TAP 138 kV	Bishop - Cedar 138kV	519
Bryan - Pee Dee 138kV	Base Case	524

Limiting Element	Contingency Element	ATC
Huntsville - LINE 558 TAP 138 kV	Cedar - Cincinnati 138kV	533
Goree - Rivtrin 138kV	LINE 558/91 TAP - Rivtrin 138 kV	555
Goree - Rivtrin 138kV	Huntsville - LINE 558/91 TAP138 kV	555
Huntsville - LINE 558 TAP 138 kV	Cincinnati - Walker 138kV	571

## LEPA

Limiting Element	Contingency Element	ATC
Baxter Wilson - Ray Braswell 500kV	Franklin - Grand Gulf 500kV	0
Semere - Scott2 138kV	Bonin - Labbe 230kV (LAFA)	0
Scott1 - Bonin 138kV	Bonin - Labbe 230kV (LAFA)	0
Semere - Scott2 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	0
Bonin - Cecelia 138kV	Colonial Academy - Richard 138kV	0
North Crowley - Scott1 138kV	Bonin - Labbe 230kV (LAFA)	0
Semere - Scott2 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
Bonin - Cecelia 138kV	Acadia - Colonial Academy 138kV	0
Bonin - Cecelia 138kV	Acadia GSU - Scanlan 138kV	0
North Crowley - Scott1 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	0
Judice - Scott1 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	0
Colonial Academy - Richard 138kV	Bonin - Labbe 230kV (LAFA)	0
North Crowley - Scott1 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
Colonial Academy - Richard 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	86
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Lake Charles Bulk - Roy S Nelson 138kV ckt 2	97
Raceland - Coteau 115kV	Terrebone 230/115kV transformer	138
Scott1 - Bonin 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	148
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	175
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	176
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	180
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Pee Dee - Bishop 138kV	Huntsville - LINE 558 TAP 138 kV	183
Colonial Academy - Richard 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	185
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	185
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	187
Bishop - Cedar 138kV	Huntsville - LINE 558 TAP 138 kV	187
Greenwood - Terrebone 115kV	Bayou Sales - WaxLake 138kV (CLECO)	187
Pee Dee - Bishop 138kV	Cypress - Hartburg 500kV	188
Pee Dee - Bishop 138kV	Walden - April 138kV	188
Bishop - Cedar 138kV	Grimes - Walden 138kV	189
Pee Dee - Bishop 138kV	April - Lake Forest 138kV	191
Pee Dee - Bishop 138kV	Webre - Wells 500kV	191
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	192

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Bishop - Cedar 138kV	Cypress - Hartburg 500kV	192
Bishop - Cedar 138kV	Walden - April 138kV	193
Bishop - Cedar 138kV	April - Lake Forest 138kV	195
Bishop - Cedar 138kV	Webre - Wells 500kV	195
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Acadia - Colonial Academy 138kV	Bonin - Labbe 230kV (LAFA)	198
Cedar - Cincinnati 138kV	Huntsville - LINE 558 TAP 138 kV	199
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	201
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Bonin - Cecelia 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	203
Cedar - Cincinnati 138kV	Walden - April 138kV	204
Cedar - Cincinnati 138kV	Cypress - Hartburg 500kV	204
Semere - Scott2 138kV	Bonin - Cecelia 138kV	206
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Cedar - Cincinnati 138kV	April - Lake Forest 138kV	207
Cedar - Cincinnati 138kV	Webre - Wells 500kV	207
Bonin - Cecelia 138kV	Scanlan - Scott2 138kV	210
Pee Dee - Bishop 138kV	Base Case	211
Habetz - Richard 138kV	Bonin - Labbe 230kV (LAFA)	213
Bishop - Cedar 138kV	Base Case	215
Bonin - Cecelia 138kV	Semere - Scott2 138kV	219
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	219
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	225
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	227
Cedar - Cincinnati 138kV	Base Case	227
Cincinnati - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	232
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	232
Cincinnati - Walker 138kV	Grimes - Walden 138kV	233
Cincinnati - Walker 138kV	Walden - April 138kV	236
Greenwood - Terrebone 115kV	Bayou Sales - Teche 138kV (CLECO)	236
Cincinnati - Walker 138kV	Cypress - Hartburg 500kV	237
Chauvin - Valentine 115kV	Coteau - Houma 115kV	238
Cincinnati - Walker 138kV	College Station - Bryan 138kV	238
Cincinnati - Walker 138kV	April - Lake Forest 138kV	239
Rivtrin - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	239
Cincinnati - Walker 138kV	College Station - Grimes 138kV	239
Rivtrin - Walker 138kV	Grimes - Walden 138kV	240
Rivtrin - Walker 138kV	Walden - April 138kV	243
Rivtrin - Walker 138kV	College Station - Bryan 138kV	244
Rivtrin - Walker 138kV	Cypress - Hartburg 500kV	244
Rivtrin - Walker 138kV	College Station - Grimes 138kV	245
Rivtrin - Walker 138kV	April - Lake Forest 138kV	246
Judice - Scott1 138kV	Greenwood - Terrebone 115kV	249
Chauvin - Ashland 115kV	Coteau - Houma 115kV	250
Terrebone 230/115kV transformer	Raceland - Coteau 115kV	251
Judice - Meaux 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	251

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Vacherie - Waterford 230kV	Raceland - Waterford 230kV	251
Cincinnati - Walker 138kV	Base Case	260
Moril - Cecelia 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	261
Rivtrin - Walker 138kV	Base Case	267
Greenwood - Terrebone 115kV	ELPTAP - Wax Lake 138kV (CLECO)	270
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	285
College Station - Grimes 138kV	Bishop - Cedar 138kV	287
Richard - Scott1 138kV	Bonin - Labbe 230kV (LAFA)	295
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	295
College Station - Grimes 138kV	Cincinnati - Walker 138kV	316
College Station - Grimes 138kV	Rivtrin - Walker 138kV	321
Semere - Scott2 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	324
Ashland - Houma 115kV	Coteau - Houma 115kV	327
Greenwood - Terrebone 115kV	Bayou Vista - ELPTAP 138kV (CLECO)	330
Coteau - Houma 115kV	Chauvin - Valentine 115kV	338
Terrebone 230/115kV transformer	Bayou Sales - WaxLake 138kV (CLECO)	340
Greenwood - Humphrey 115kV	Bayou Sales - WaxLake 138kV (CLECO)	341
Judice - Scott1 138kV	Acadian - Bonin 230kV (LAFA)	346
Grimes - Mt. Zion 138kV	Pee Dee - Bishop 138kV	349
Grimes - Mt. Zion 138kV	Bishop - Cedar 138kV	354
Terrebone 230/115kV transformer	Bayou Sales - Teche 138kV (CLECO)	360
Addis - Big Cajun 1 230kV	Enjay - Fancy 230kV	364
Gibson - Humphrey 115kV	Bayou Sales - WaxLake 138kV (CLECO)	365
Acadia - Colonial Academy 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	366
Coteau - Houma 115kV	Chauvin - Ashland 115kV	366
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	367
Grimes - Mt. Zion 138kV	Cedar - Cincinnati 138kV	369
College Station - Bryan 138kV	Bishop - Cedar 138kV	369
Terrebone 230/115kV transformer	ELPTAP - Wax Lake 138kV (CLECO)	374
Raceland - Coteau 115kV	Terrebone - Coteau 115kV	376
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	377
Raceland 230/115kV transformer	Terrebone 230/115kV transformer	382
Houma - City of Houma 115kV	Amite 230/115kV transformer 1	382
Houma - City of Houma 115kV	Hopkins - Morbhan 138kV (CLECO)	382
Houma - City of Houma 115kV	Jim Hill 161/115kV transformer	382
Houma - City of Houma 115kV	Porter - China/Porter Series Compensation	382
Terrebone 230/115kV transformer	Webre - Wells 500kV	382
Terrebone 230/115kV transformer	Raceland 230/115kV transformer	386
Bonin - Cecelia 138kV	Judice - Scott1 138kV	390
Greenwood - Humphrey 115kV	Bayou Sales - Teche 138kV (CLECO)	390
Terrebone 230/115kV transformer	Bayou Vista - ELPTAP 138kV (CLECO)	398
College Station - Bryan 138kV	Cincinnati - Walker 138kV	398
Judice - Scott1 138kV	Greenwood - Humphrey 115kV	401
Houma - City of Houma 115kV	Base Case	403
College Station - Bryan 138kV	Rivtrin - Walker 138kV	403
Acadia GSU - Scanlan 138kV	Bonin - Labbe 230kV (LAFA)	407
Grimes - Mt. Zion 138kV	Cincinnati - Walker 138kV	407

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Semere - Scott2 138kV	Wells 500/230kV transformer	408
Terrebone - Coteau 115kV	Raceland - Coteau 115kV	411
Raceland - Coteau 115kV	Landry - Raceland 230kV	413
Coteau - Houma 115kV	Waterford - Valentine 230kV	414
Gibson - Humphrey 115kV	Bayou Sales - Teche 138kV (CLECO)	414
Coteau - Houma 115kV	Valentine 230/115kV transformer	414
Grimes - Mt. Zion 138kV	Rivtrin - Walker 138kV	416
Greenwood - Humphrey 115kV	ELPTAP - Wax Lake 138kV (CLECO)	424
LINE 558 TAP - MT. Zion 138 kV	Pee Dee - Bishop 138kV	426
Coteau - Houma 115kV	Ashland - Houma 115kV	427
Judice - Scott1 138kV	Gibson - Humphrey 115kV	429
LINE 558 TAP - MT. Zion 138 kV	Bishop - Cedar 138kV	430
Terrebone 230/115kV transformer	Chauvin - Valentine 115kV	441
LINE 558 TAP - MT. Zion 138 kV	Cedar - Cincinnati 138kV	445
Gibson - Humphrey 115kV	ELPTAP - Wax Lake 138kV (CLECO)	448
Terrebone 230/115kV transformer	Waterford - Valentine 230kV	450
Judice - Scott1 138kV	Flander - Acadian 230kV (LAFA)	450
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	454
Raceland - Coteau 115kV	Landry - Terrebonne 230kV	455
Bryan - Pee Dee 138kV	Huntsville - LINE 558/91 TAP138 kV	459
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	459
Acadia - Colonial Academy 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	465
Habetz - Richard 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	465
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	471
Valentine 230/115kV transformer	Coteau - Houma 115kV	473
Coteau - Houma 115kV	Greenwood - Terrebone 115kV	476
Bryan - Pee Dee 138kV	Dolet Hills - S.W. Shreevport 345kV (CLECO)	479
Coteau - Houma 115kV	Greenwood - Humphrey 115kV	483
Judice - Scott1 138kV	Moril - Cecelia 138kV	483
LINE 558 TAP - MT. Zion 138 kV	Cincinnati - Walker 138kV	483
Greenwood - Humphrey 115kV	Bayou Vista - ELPTAP 138kV (CLECO)	484
Raceland - Coteau 115kV	Chauvin - Valentine 115kV	487
North Crowley - Scott1 138kV	Richard - Scott1 138kV	488
Grimes - Walden 138kV	Pee Dee - Bishop 138kV	491
LINE 558 TAP - MT. Zion 138 kV	Rivtrin - Walker 138kV	492
Grimes - Walden 138kV	Bishop - Cedar 138kV	493
Grimes - Walden 138kV	Cedar - Cincinnati 138kV	501
Gibson - Humphrey 115kV	Bayou Vista - ELPTAP 138kV (CLECO)	508
Richard - Scott1 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	510
Raceland - Coteau 115kV	Chauvin - Ashland 115kV	516
Greenwood - Terrebone 115kV	Bayou Vista - BERWKTP4 138kV (CLECO)	520
Bryan - Pee Dee 138kV	Base Case	522
Grimes - Walden 138kV	Cincinnati - Walker 138kV	522
Huntsville - LINE 558 TAP 138 kV	Pee Dee - Bishop 138kV	526
Grimes - Walden 138kV	Rivtrin - Walker 138kV	527
Greenwood - Terrebone 115kV	Ramos - BERWKTP4 138kV (CLECO)	528
Gibson - Ramos 138kV	Bayou Sales - WaxLake 138kV (CLECO)	530

Limiting Element	Contingency Element	ATC
Huntsville - LINE 558 TAP 138 kV	Bishop - Cedar 138kV	531
Vacherie - Waterford 230kV	Landry - Raceland 230kV	536
Vacherie - Waterford 230kV	Donaldsonville - Evergreen 230kV	537
Coteau - Houma 115kV	Base Case	539
Raceland - Coteau 115kV	Bayou Sales - WaxLake 138kV (CLECO)	540
Scott1 - Bonin 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	545
Huntsville - LINE 558 TAP 138 kV	Cedar - Cincinnati 138kV	545
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Roy S. Nelson - Richard 500kV	548
Raceland - Coteau 115kV	Bayou Sales - Teche 138kV (CLECO)	551
Goree - Rivtrin 138kV	LINE 558/91 TAP - Rivtrin 138 kV	555
Goree - Rivtrin 138kV	Huntsville - LINE 558/91 TAP138 kV	555
Raceland - Coteau 115kV	ELPTAP - Wax Lake 138kV (CLECO)	559
Moril - Cecelia 138kV	Judice - Scott1 138kV	565
Acadia GSU - Scanlan 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	575

## OKGE

Limiting Element	Contingency Element	ATC
Danville - North Magazine REA 161kV	ANO - Fort Smith 500kV	0
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Lake Charles Bulk - Roy S Nelson 138kV ckt 2	165
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	174
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	178
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	179
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	184
Pee Dee - Bishop 138kV	Huntsville - LINE 558 TAP 138 kV	186
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	188
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	190
Pee Dee - Bishop 138kV	Cypress - Hartburg 500kV	191
Bishop - Cedar 138kV	Huntsville - LINE 558 TAP 138 kV	191
Pee Dee - Bishop 138kV	Walden - April 138kV	191
Bishop - Cedar 138kV	Grimes - Walden 138kV	192
Pee Dee - Bishop 138kV	Webre - Wells 500kV	193
Pee Dee - Bishop 138kV	Cypress - Honey 138kV	194
Bishop - Cedar 138kV	Cypress - Hartburg 500kV	195
Bishop - Cedar 138kV	Walden - April 138kV	196
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	196
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Bishop - Cedar 138kV	Webre - Wells 500kV	197
Bishop - Cedar 138kV	Cypress - Honey 138kV	198
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202



<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Cedar - Cincinnati 138kV	Huntsville - LINE 558 TAP 138 kV	203
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	204
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Cedar - Cincinnati 138kV	Cypress - Hartburg 500kV	207
Cedar - Cincinnati 138kV	Walden - April 138kV	207
Cedar - Cincinnati 138kV	Webre - Wells 500kV	209
Cedar - Cincinnati 138kV	April - Lake Forest 138kV	210
Pee Dee - Bishop 138kV	Base Case	214
Bishop - Cedar 138kV	Base Case	218
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	224
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	229
Cedar - Cincinnati 138kV	Base Case	230
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	231
Cincinnati - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	236
Cincinnati - Walker 138kV	Grimes - Walden 138kV	236
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	237
Cincinnati - Walker 138kV	College Station - Bryan 138kV	239
Cincinnati - Walker 138kV	Cypress - Hartburg 500kV	240
Cincinnati - Walker 138kV	College Station - Grimes 138kV	240
Cincinnati - Walker 138kV	Walden - April 138kV	240
Cincinnati - Walker 138kV	Webre - Wells 500kV	242
Rivtrin - Walker 138kV	Grimes - Walden 138kV	244
Rivtrin - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	244
Rivtrin - Walker 138kV	College Station - Bryan 138kV	244
Rivtrin - Walker 138kV	College Station - Grimes 138kV	245
Rivtrin - Walker 138kV	Walden - April 138kV	247
Rivtrin - Walker 138kV	Cypress - Hartburg 500kV	247
Rivtrin - Walker 138kV	Webre - Wells 500kV	249
Cincinnati - Walker 138kV	Base Case	263
Rivtrin - Walker 138kV	Base Case	270
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	284
College Station - Grimes 138kV	Bishop - Cedar 138kV	287
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	292
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	295
College Station - Grimes 138kV	Cincinnati - Walker 138kV	316
College Station - Grimes 138kV	Rivtrin - Walker 138kV	321
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	366
College Station - Bryan 138kV	Bishop - Cedar 138kV	369
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	377
College Station - Bryan 138kV	Cincinnati - Walker 138kV	398
Grimes - Mt. Zion 138kV	Pee Dee - Bishop 138kV	399
College Station - Bryan 138kV	Rivtrin - Walker 138kV	403
Grimes - Mt. Zion 138kV	Bishop - Cedar 138kV	405
Grimes - Mt. Zion 138kV	Cedar - Cincinnati 138kV	421
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	444
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	447
Bryan - Pee Dee 138kV	Huntsville - LINE 558/91 TAP138 kV	447

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	458
Grimes - Mt. Zion 138kV	Cincinnati - Walker 138kV	466
Bryan - Pee Dee 138kV	Dolet Hills - S.W. Shreevport 345kV (CLECO)	466
Russellville South - Dardanelle Dam 161kV	ANO - Fort Smith 500kV	471
Grimes - Mt. Zion 138kV	Rivtrin - Walker 138kV	475
LINE 558 TAP - MT. Zion 138 kV	Pee Dee - Bishop 138kV	486
LINE 558 TAP - MT. Zion 138 kV	Bishop - Cedar 138kV	492
St. Joe - Hilltop 161kV	ANO - Fort Smith 500kV	492
LINE 558 TAP - MT. Zion 138 kV	Cedar - Cincinnati 138kV	508
Bryan - Pee Dee 138kV	Base Case	510
Goree - Rivtrin 138kV	LINE 558/91 TAP - Rivtrin 138 kV	552
Goree - Rivtrin 138kV	Huntsville - LINE 558/91 TAP138 kV	553
LINE 558 TAP - MT. Zion 138 kV	Cincinnati - Walker 138kV	553
Grimes - Walden 138kV	Pee Dee - Bishop 138kV	562
LINE 558 TAP - MT. Zion 138 kV	Rivtrin - Walker 138kV	563
Grimes - Walden 138kV	Bishop - Cedar 138kV	565
LINE 558/91 TAP - Rivtrin 138 kV	Bryan - Pee Dee 138kV	567
Huntsville - LINE 558/91 TAP138 kV	Bryan - Pee Dee 138kV	567
Grimes - Walden 138kV	Cedar - Cincinnati 138kV	574

## **SMEPA**

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Baxter Wilson - Ray Braswell 500kV	Franklin - Grand Gulf 500kV	0
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Lake Charles Bulk - Roy S Nelson 138kV ckt 2	123
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	171
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	176
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	177
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	181
Pee Dee - Bishop 138kV	Huntsville - LINE 558 TAP 138 kV	184
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	186
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	188
Bishop - Cedar 138kV	Huntsville - LINE 558 TAP 138 kV	188
Pee Dee - Bishop 138kV	Cypress - Hartburg 500kV	189
Pee Dee - Bishop 138kV	Walden - April 138kV	189
Bishop - Cedar 138kV	Grimes - Walden 138kV	190
Pee Dee - Bishop 138kV	April - Lake Forest 138kV	192
Pee Dee - Bishop 138kV	Webre - Wells 500kV	192
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	193

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Bishop - Cedar 138kV	Cypress - Hartburg 500kV	193
Bishop - Cedar 138kV	Walden - April 138kV	193
Bishop - Cedar 138kV	April - Lake Forest 138kV	196
Bishop - Cedar 138kV	Webre - Wells 500kV	196
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Cedar - Cincinnati 138kV	Huntsville - LINE 558 TAP 138 kV	200
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	202
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Cedar - Cincinnati 138kV	Walden - April 138kV	205
Cedar - Cincinnati 138kV	Cypress - Hartburg 500kV	205
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Cedar - Cincinnati 138kV	April - Lake Forest 138kV	208
Cedar - Cincinnati 138kV	Webre - Wells 500kV	208
Pee Dee - Bishop 138kV	Base Case	212
Bishop - Cedar 138kV	Base Case	216
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	221
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	226
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	228
Cedar - Cincinnati 138kV	Base Case	228
Cincinnati - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	233
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	233
Cincinnati - Walker 138kV	Grimes - Walden 138kV	234
Cincinnati - Walker 138kV	Walden - April 138kV	237
Cincinnati - Walker 138kV	Cypress - Hartburg 500kV	238
Cincinnati - Walker 138kV	College Station - Bryan 138kV	238
Cincinnati - Walker 138kV	College Station - Grimes 138kV	239
Cincinnati - Walker 138kV	April - Lake Forest 138kV	240
Rivtrin - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	240
Rivtrin - Walker 138kV	Grimes - Walden 138kV	241
Rivtrin - Walker 138kV	College Station - Bryan 138kV	244
Rivtrin - Walker 138kV	Walden - April 138kV	244
Rivtrin - Walker 138kV	College Station - Grimes 138kV	245
Rivtrin - Walker 138kV	Cypress - Hartburg 500kV	245
Rivtrin - Walker 138kV	April - Lake Forest 138kV	247
Cincinnati - Walker 138kV	Base Case	260
Rivtrin - Walker 138kV	Base Case	268
Florence - South Jackson 115kV	Bogalusa - Adams Creek 500/230kV transformer	282
Florence - South Jackson 115kV	Bogalusa - Franklin 500kV	282
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	285
College Station - Grimes 138kV	Bishop - Cedar 138kV	287
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	295
Florence - South Jackson 115kV	Choctaw - West Point 500kV (TVA)	302
College Station - Grimes 138kV	Cincinnati - Walker 138kV	316
College Station - Grimes 138kV	Rivtrin - Walker 138kV	321
Grimes - Mt. Zion 138kV	Pee Dee - Bishop 138kV	362
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	367

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Grimes - Mt. Zion 138kV	Bishop - Cedar 138kV	367
College Station - Bryan 138kV	Bishop - Cedar 138kV	369
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	377
Grimes - Mt. Zion 138kV	Cedar - Cincinnati 138kV	382
College Station - Bryan 138kV	Cincinnati - Walker 138kV	398
Florence - South Jackson 115kV	Angie - Adams Creek 230kV	401
College Station - Bryan 138kV	Rivtrin - Walker 138kV	403
Grimes - Mt. Zion 138kV	Cincinnati - Walker 138kV	422
Florence - South Jackson 115kV	New Hebron - Sliver Creek 115kV	431
Grimes - Mt. Zion 138kV	Rivtrin - Walker 138kV	431
Florence - South Jackson 115kV	Magee - New Hebron 115kV	435
LINE 558 TAP - MT. Zion 138 kV	Pee Dee - Bishop 138kV	441
LINE 558 TAP - MT. Zion 138 kV	Bishop - Cedar 138kV	446
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	451
Florence - South Jackson 115kV	Franklin - Grand Gulf 500kV	452
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	456
Bryan - Pee Dee 138kV	Huntsville - LINE 558/91 TAP138 kV	456
LINE 558 TAP - MT. Zion 138 kV	Cedar - Cincinnati 138kV	461
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	467
Bryan - Pee Dee 138kV	Dolet Hills - S.W. Shreevport 345kV (CLECO)	475
Florence - South Jackson 115kV	South Jackson - Pop Spring 115kV	475
LINE 558 TAP - MT. Zion 138 kV	Cincinnati - Walker 138kV	501
Grimes - Walden 138kV	Pee Dee - Bishop 138kV	509
LINE 558 TAP - MT. Zion 138 kV	Rivtrin - Walker 138kV	510
Grimes - Walden 138kV	Bishop - Cedar 138kV	512
Bryan - Pee Dee 138kV	Base Case	518
Grimes - Walden 138kV	Cedar - Cincinnati 138kV	520
Grimes - Walden 138kV	Cincinnati - Walker 138kV	542
Huntsville - LINE 558 TAP 138 kV	Pee Dee - Bishop 138kV	546
Grimes - Walden 138kV	Rivtrin - Walker 138kV	547
Huntsville - LINE 558 TAP 138 kV	Bishop - Cedar 138kV	551
Goree - Rivtrin 138kV	LINE 558/91 TAP - Rivtrin 138 kV	554
Goree - Rivtrin 138kV	Huntsville - LINE 558/91 TAP138 kV	554
Huntsville - LINE 558 TAP 138 kV	Cedar - Cincinnati 138kV	565

## SOCO

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Baxter Wilson - Ray Braswell 500kV	Franklin - Grand Gulf 500kV	0
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Lake Charles Bulk - Roy S Nelson 138kV ckt 2	136
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	172
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	176
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	177
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	182
Pee Dee - Bishop 138kV	Huntsville - LINE 558 TAP 138 kV	184
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	186
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	188
Bishop - Cedar 138kV	Huntsville - LINE 558 TAP 138 kV	189
Pee Dee - Bishop 138kV	Cypress - Hartburg 500kV	189
Pee Dee - Bishop 138kV	Walden - April 138kV	190
Bishop - Cedar 138kV	Grimes - Walden 138kV	190
Pee Dee - Bishop 138kV	Webre - Wells 500kV	192
Pee Dee - Bishop 138kV	April - Lake Forest 138kV	192
Bishop - Cedar 138kV	Cypress - Hartburg 500kV	193
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	194
Bishop - Cedar 138kV	Walden - April 138kV	194
Bishop - Cedar 138kV	Webre - Wells 500kV	196
Bishop - Cedar 138kV	April - Lake Forest 138kV	196
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Cedar - Cincinnati 138kV	Huntsville - LINE 558 TAP 138 kV	201
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	202
Cedar - Cincinnati 138kV	Cypress - Hartburg 500kV	206
Cedar - Cincinnati 138kV	Walden - April 138kV	206
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Cedar - Cincinnati 138kV	April - Lake Forest 138kV	208
Cedar - Cincinnati 138kV	Webre - Wells 500kV	208
Pee Dee - Bishop 138kV	Base Case	213
Bishop - Cedar 138kV	Base Case	217
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	221
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	227
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	229
Cedar - Cincinnati 138kV	Base Case	229
Cincinnati - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	234
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	234
Cincinnati - Walker 138kV	Grimes - Walden 138kV	234
Cincinnati - Walker 138kV	Walden - April 138kV	238
Cincinnati - Walker 138kV	Cypress - Hartburg 500kV	238
Cincinnati - Walker 138kV	College Station - Bryan 138kV	239
Cincinnati - Walker 138kV	College Station - Grimes 138kV	240
Cincinnati - Walker 138kV	April - Lake Forest 138kV	240
Rivtrin - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	241
Rivtrin - Walker 138kV	Grimes - Walden 138kV	242

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Rivtrin - Walker 138kV	College Station - Bryan 138kV	244
Rivtrin - Walker 138kV	College Station - Grimes 138kV	245
Rivtrin - Walker 138kV	Walden - April 138kV	245
Rivtrin - Walker 138kV	Cypress - Hartburg 500kV	245
Rivtrin - Walker 138kV	April - Lake Forest 138kV	248
Cincinnati - Walker 138kV	Base Case	261
Rivtrin - Walker 138kV	Base Case	268
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	285
College Station - Grimes 138kV	Bishop - Cedar 138kV	287
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	295
College Station - Grimes 138kV	Cincinnati - Walker 138kV	316
College Station - Grimes 138kV	Rivtrin - Walker 138kV	321
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	367
College Station - Bryan 138kV	Bishop - Cedar 138kV	369
Grimes - Mt. Zion 138kV	Pee Dee - Bishop 138kV	371
Grimes - Mt. Zion 138kV	Bishop - Cedar 138kV	376
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	377
Grimes - Mt. Zion 138kV	Cedar - Cincinnati 138kV	391
College Station - Bryan 138kV	Cincinnati - Walker 138kV	398
College Station - Bryan 138kV	Rivtrin - Walker 138kV	403
Grimes - Mt. Zion 138kV	Cincinnati - Walker 138kV	432
Grimes - Mt. Zion 138kV	Rivtrin - Walker 138kV	441
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	449
LINE 558 TAP - MT. Zion 138 kV	Pee Dee - Bishop 138kV	451
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	454
Bryan - Pee Dee 138kV	Huntsville - LINE 558/91 TAP138 kV	454
LINE 558 TAP - MT. Zion 138 kV	Bishop - Cedar 138kV	457
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	465
LINE 558 TAP - MT. Zion 138 kV	Cedar - Cincinnati 138kV	472
Bryan - Pee Dee 138kV	Dolet Hills - S.W. Shreevport 345kV (CLECO)	473
LINE 558 TAP - MT. Zion 138 kV	Cincinnati - Walker 138kV	513
Bryan - Pee Dee 138kV	Base Case	516
Grimes - Walden 138kV	Pee Dee - Bishop 138kV	521
LINE 558 TAP - MT. Zion 138 kV	Rivtrin - Walker 138kV	522
Grimes - Walden 138kV	Bishop - Cedar 138kV	524
Grimes - Walden 138kV	Cedar - Cincinnati 138kV	532
Goree - Rivtrin 138kV	LINE 558/91 TAP - Rivtrin 138 kV	554
Goree - Rivtrin 138kV	Huntsville - LINE 558/91 TAP138 kV	554
Grimes - Walden 138kV	Cincinnati - Walker 138kV	554
Huntsville - LINE 558 TAP 138 kV	Pee Dee - Bishop 138kV	558
Grimes - Walden 138kV	Rivtrin - Walker 138kV	559
Huntsville - LINE 558 TAP 138 kV	Bishop - Cedar 138kV	563

## SPA

Limiting Element	Contingency Element	ATC
Melborne - Sage 161kV	Dell - Independence SES 500kV	0
Melborne - Sage 161kV	ANO - Fort Smith 500kV	0
Melborne - Sage 161kV	Newport - Newport Industrial 161kV	0
Melborne - Sage 161kV	Newport AB - Newport Industrial 161kV	0
Melborne - Sage 161kV	Cash - Newport AB 161kV	0
Melborne - Sage 161kV	Cash - Jonesboro 161kV	0
Melborne - Sage 161kV	Sansouci - Shelby (TVA) 500kV	0
Melborne - Sage 161kV	Sage - Guion 161kV	0
Melborne - Sage 161kV	Newport - Swifton 161kV	0
Melborne - Sage 161kV	Mountain View - Guion 161kV	0
Calico Rock - Melborne 161kV	Dell - Independence SES 500kV	72
Calico Rock - Melborne 161kV	ANO - Fort Smith 500kV	77
Lake Conway - Mayflower 115kV	Pleasant Hill 500/161kV transformer	122
Calico Rock - Norfolk 161kV	Dell - Independence SES 500kV	130
Calico Rock - Norfolk 161kV	ANO - Fort Smith 500kV	132
Pleasant Hill 500/161kV transformer	ANO 500/115kV transformer	135
Calico Rock - Melborne 161kV	Newport - Newport Industrial 161kV	136
Calico Rock - Melborne 161kV	Newport AB - Newport Industrial 161kV	151
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Lake Charles Bulk - Roy S Nelson 138kV ckt 2	158
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Calico Rock - Melborne 161kV	Cash - Newport AB 161kV	177
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	177
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	179
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	183
Pee Dee - Bishop 138kV	Huntsville - LINE 558 TAP 138 kV	186
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	187
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	190
Bishop - Cedar 138kV	Huntsville - LINE 558 TAP 138 kV	190
Pee Dee - Bishop 138kV	Cypress - Hartburg 500kV	190
Pee Dee - Bishop 138kV	Walden - April 138kV	191
Bishop - Cedar 138kV	Grimes - Walden 138kV	191
Pee Dee - Bishop 138kV	Webre - Wells 500kV	193
Pee Dee - Bishop 138kV	April - Lake Forest 138kV	193
Calico Rock - Norfolk 161kV	Newport - Newport Industrial 161kV	194
Bishop - Cedar 138kV	Cypress - Hartburg 500kV	194
Bishop - Cedar 138kV	Walden - April 138kV	195
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	195
Bishop - Cedar 138kV	Webre - Wells 500kV	197
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Bishop - Cedar 138kV	April - Lake Forest 138kV	197
Calico Rock - Melborne 161kV	Cash - Jonesboro 161kV	199
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Cedar - Cincinnati 138kV	Huntsville - LINE 558 TAP 138 kV	202
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	203
Cedar - Cincinnati 138kV	Cypress - Hartburg 500kV	206
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Cedar - Cincinnati 138kV	Walden - April 138kV	207
Cedar - Cincinnati 138kV	Webre - Wells 500kV	209
Calico Rock - Norfolk 161kV	Newport AB - Newport Industrial 161kV	209
Cedar - Cincinnati 138kV	April - Lake Forest 138kV	209
Pee Dee - Bishop 138kV	Base Case	213
Bishop - Cedar 138kV	Base Case	218
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	223
Calico Rock - Melborne 161kV	Newport - Swifton 161kV	227
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	228
Calico Rock - Melborne 161kV	Sansouci - Shelby (TVA) 500kV	229
Cedar - Cincinnati 138kV	Base Case	230
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	230
Calico Rock - Melborne 161kV	Sage - Guion 161kV	235
Calico Rock - Norfolk 161kV	Cash - Newport AB 161kV	235
Cincinnati - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	235
Cincinnati - Walker 138kV	Grimes - Walden 138kV	236
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	236
Cincinnati - Walker 138kV	College Station - Bryan 138kV	239
Cincinnati - Walker 138kV	Walden - April 138kV	239
Cincinnati - Walker 138kV	Cypress - Hartburg 500kV	239
Cincinnati - Walker 138kV	College Station - Grimes 138kV	240
Cincinnati - Walker 138kV	Webre - Wells 500kV	242
Rivtrin - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	243
Rivtrin - Walker 138kV	Grimes - Walden 138kV	243
Rivtrin - Walker 138kV	College Station - Bryan 138kV	244
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	244
Rivtrin - Walker 138kV	College Station - Grimes 138kV	245
Rivtrin - Walker 138kV	Walden - April 138kV	246
Rivtrin - Walker 138kV	Cypress - Hartburg 500kV	246
Rivtrin - Walker 138kV	Webre - Wells 500kV	249
Calico Rock - Melborne 161kV	Mountain View - Guion 161kV	250
Calico Rock - Norfolk 161kV	Cash - Jonesboro 161kV	257
Cincinnati - Walker 138kV	Base Case	262
Rivtrin - Walker 138kV	Base Case	269
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	284
Calico Rock - Norfolk 161kV	Newport - Swifton 161kV	286
College Station - Grimes 138kV	Bishop - Cedar 138kV	287
Calico Rock - Norfolk 161kV	Sansouci - Shelby (TVA) 500kV	291
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	295



<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Calico Rock - Norfolk 161kV	Sage - Guion 161kV	295
Calico Rock - Norfolk 161kV	Mountain View - Guion 161kV	310
College Station - Grimes 138kV	Cincinnati - Walker 138kV	316
College Station - Grimes 138kV	Rivtrin - Walker 138kV	321
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	366
College Station - Bryan 138kV	Bishop - Cedar 138kV	369
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	377
Grimes - Mt. Zion 138kV	Pee Dee - Bishop 138kV	388
Grimes - Mt. Zion 138kV	Bishop - Cedar 138kV	393
College Station - Bryan 138kV	Cincinnati - Walker 138kV	398
College Station - Bryan 138kV	Rivtrin - Walker 138kV	403
Russellville South - Dardanelle Dam 161kV	ANO - Fort Smith 500kV	407
Grimes - Mt. Zion 138kV	Cedar - Cincinnati 138kV	409
Melborne - Sage 161kV	Base Case	436
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	446
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	450
Bryan - Pee Dee 138kV	Huntsville - LINE 558/91 TAP138 kV	450
Grimes - Mt. Zion 138kV	Cincinnati - Walker 138kV	452
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	460
Grimes - Mt. Zion 138kV	Rivtrin - Walker 138kV	462
Bryan - Pee Dee 138kV	Dolet Hills - S.W. Shreevport 345kV (CLECO)	468
LINE 558 TAP - MT. Zion 138 kV	Pee Dee - Bishop 138kV	473
LINE 558 TAP - MT. Zion 138 kV	Bishop - Cedar 138kV	478
Independence SES - Moorefield 161kV	ANO - Fort Smith 500kV	490
LINE 558 TAP - MT. Zion 138 kV	Cedar - Cincinnati 138kV	494
Independence SES - Moorefield 161kV	Dell - Independence SES 500kV	509
Bryan - Pee Dee 138kV	Base Case	512
Conway West 161/115kV transformer	Pleasant Hill 500/161kV transformer	528
LINE 558 TAP - MT. Zion 138 kV	Cincinnati - Walker 138kV	537
Grimes - Walden 138kV	Pee Dee - Bishop 138kV	546
LINE 558 TAP - MT. Zion 138 kV	Rivtrin - Walker 138kV	547
Grimes - Walden 138kV	Bishop - Cedar 138kV	549
Goree - Rivtrin 138kV	LINE 558/91 TAP - Rivtrin 138 kV	553
Goree - Rivtrin 138kV	Huntsville - LINE 558/91 TAP138 kV	553
Grimes - Walden 138kV	Cedar - Cincinnati 138kV	557
Independence SES - Moorefield 161kV	Newport - Newport Industrial 161kV	571
LINE 558/91 TAP - Rivtrin 138 kV	Bryan - Pee Dee 138kV	572
Huntsville - LINE 558/91 TAP138 kV	Bryan - Pee Dee 138kV	572

# TVA

Limiting Element	Contingency Element	ATC
Baxter Wilson - Ray Braswell 500kV	Franklin - Grand Gulf 500kV	0
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Lake Charles Bulk - Roy S Nelson 138kV ckt 2	143
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	172
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	176
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	178
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	182
Pee Dee - Bishop 138kV	Huntsville - LINE 558 TAP 138 kV	185
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	187
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	189
Bishop - Cedar 138kV	Huntsville - LINE 558 TAP 138 kV	189
Pee Dee - Bishop 138kV	Cypress - Hartburg 500kV	189
Pee Dee - Bishop 138kV	Walden - April 138kV	190
Bishop - Cedar 138kV	Grimes - Walden 138kV	191
Pee Dee - Bishop 138kV	Webre - Wells 500kV	192
Pee Dee - Bishop 138kV	April - Lake Forest 138kV	193
Bishop - Cedar 138kV	Cypress - Hartburg 500kV	194
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	194
Bishop - Cedar 138kV	Walden - April 138kV	194
Bishop - Cedar 138kV	Webre - Wells 500kV	196
Bishop - Cedar 138kV	April - Lake Forest 138kV	197
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Cedar - Cincinnati 138kV	Huntsville - LINE 558 TAP 138 kV	201
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	203
Cedar - Cincinnati 138kV	Cypress - Hartburg 500kV	206
Cedar - Cincinnati 138kV	Walden - April 138kV	206
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Cedar - Cincinnati 138kV	Webre - Wells 500kV	208
Cedar - Cincinnati 138kV	April - Lake Forest 138kV	209
Pee Dee - Bishop 138kV	Base Case	213
Bishop - Cedar 138kV	Base Case	217
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	222
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	227
Cedar - Cincinnati 138kV	Base Case	229
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	229
Cincinnati - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	234
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	234
Cincinnati - Walker 138kV	Grimes - Walden 138kV	235

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Cincinnati - Walker 138kV	Walden - April 138kV	238
Cincinnati - Walker 138kV	Cypress - Hartburg 500kV	238
Cincinnati - Walker 138kV	College Station - Bryan 138kV	239
Cincinnati - Walker 138kV	College Station - Grimes 138kV	240
Cincinnati - Walker 138kV	April - Lake Forest 138kV	241
Rivtrin - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	241
Rivtrin - Walker 138kV	Grimes - Walden 138kV	242
Rivtrin - Walker 138kV	College Station - Bryan 138kV	244
Rivtrin - Walker 138kV	College Station - Grimes 138kV	245
Rivtrin - Walker 138kV	Walden - April 138kV	245
Rivtrin - Walker 138kV	Cypress - Hartburg 500kV	246
Rivtrin - Walker 138kV	April - Lake Forest 138kV	248
Cincinnati - Walker 138kV	Base Case	261
Rivtrin - Walker 138kV	Base Case	268
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	285
College Station - Grimes 138kV	Bishop - Cedar 138kV	287
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	295
College Station - Grimes 138kV	Cincinnati - Walker 138kV	316
College Station - Grimes 138kV	Rivtrin - Walker 138kV	321
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	367
College Station - Bryan 138kV	Bishop - Cedar 138kV	369
Grimes - Mt. Zion 138kV	Pee Dee - Bishop 138kV	374
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	377
Grimes - Mt. Zion 138kV	Bishop - Cedar 138kV	379
Grimes - Mt. Zion 138kV	Cedar - Cincinnati 138kV	395
College Station - Bryan 138kV	Cincinnati - Walker 138kV	398
College Station - Bryan 138kV	Rivtrin - Walker 138kV	403
Grimes - Mt. Zion 138kV	Cincinnati - Walker 138kV	436
Grimes - Mt. Zion 138kV	Rivtrin - Walker 138kV	445
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	449
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	453
Bryan - Pee Dee 138kV	Huntsville - LINE 558/91 TAP138 kV	453
LINE 558 TAP - MT. Zion 138 kV	Pee Dee - Bishop 138kV	456
LINE 558 TAP - MT. Zion 138 kV	Bishop - Cedar 138kV	461
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	464
Bryan - Pee Dee 138kV	Dolet Hills - S.W. Shreevport 345kV (CLECO)	472
LINE 558 TAP - MT. Zion 138 kV	Cedar - Cincinnati 138kV	476
Bryan - Pee Dee 138kV	Base Case	515
LINE 558 TAP - MT. Zion 138 kV	Cincinnati - Walker 138kV	518
Grimes - Walden 138kV	Pee Dee - Bishop 138kV	526
LINE 558 TAP - MT. Zion 138 kV	Rivtrin - Walker 138kV	527
Grimes - Walden 138kV	Bishop - Cedar 138kV	529
Grimes - Walden 138kV	Cedar - Cincinnati 138kV	537
Goree - Rivtrin 138kV	LINE 558/91 TAP - Rivtrin 138 kV	554
Goree - Rivtrin 138kV	Huntsville - LINE 558/91 TAP138 kV	554
Grimes - Walden 138kV	Cincinnati - Walker 138kV	560
Huntsville - LINE 558 TAP 138 kV	Pee Dee - Bishop 138kV	563

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Grimes - Walden 138kV	Rivtrin - Walker 138kV	565
Huntsville - LINE 558 TAP 138 kV	Bishop - Cedar 138kV	568

## APPENDIX A-D: DETAILS OF SCENARIO 2

2012

AECI

Limiting Element	Contingency Element	ATC
Caney Creek - Lewis Creek SES 138kV	Alden - Lewis Creek SES 138kV	0
Conair - Caney Creek 138kV	Alden - Lewis Creek SES 138kV	47
Lewis Creek SES - Sheawill 138kV	Cleveland - Jacinto 138kV	120
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	215
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	216
Bishop - Cedar 138kV	College Station - Bryan 138kV	219
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	219
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	220
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	220
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	221
Pee Dee - Bishop 138kV	Crockett - Grimes 345kV	223
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	224
Bishop - Cedar 138kV	College Station - Speedway 138kV	224
Bishop - Cedar 138kV	Navasota - Speedway 138kV	224
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	225
Pee Dee - Bishop 138kV	Goree - Lewis Creek SES 138kV	225
Pee Dee - Bishop 138kV	Hartburg - Cottonwood2 500kV	226
Bishop - Cedar 138kV	Crockett - Grimes 345kV	227
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	227
Bishop - Cedar 138kV	Grimes - Walden 138kV	228
Bishop - Cedar 138kV	Goree - Lewis Creek SES 138kV	230
Bishop - Cedar 138kV	Hartburg - Cottonwood2 500kV	230
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	232
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	236
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	236
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	238
Cedar - Cincinnati 138kV	Crockett - Grimes 345kV	239
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	241
Cedar - Cincinnati 138kV	Hartburg - Cottonwood2 500kV	242
Cedar - Cincinnati 138kV	Goree - Lewis Creek SES 138kV	243

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Pee Dee - Bishop 138kV	Base Case	245
Bishop - Cedar 138kV	Base Case	250
Cincinnati - Walker 138kV	College Station - Bryan 138kV	250
Rivtrin - Walker 138kV	College Station - Bryan 138kV	255
Cedar - Cincinnati 138kV	Base Case	262
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	267
Cincinnati - Walker 138kV	College Station - Speedway 138kV	269
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	269
Cincinnati - Walker 138kV	Crockett - Grimes 345kV	271
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	273
Cincinnati - Walker 138kV	Grimes - Walden 138kV	275
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	275
Rivtrin - Walker 138kV	College Station - Speedway 138kV	276
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	276
Cincinnati - Walker 138kV	Hartburg - Cottonwood2 500kV	277
Cincinnati - Walker 138kV	Goree - Lewis Creek SES 138kV	278
Rivtrin - Walker 138kV	Crockett - Grimes 345kV	278
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	281
Rivtrin - Walker 138kV	Grimes - Walden 138kV	282
Rivtrin - Walker 138kV	Hartburg - Cottonwood2 500kV	284
Rivtrin - Walker 138kV	Walden - April 138kV	286
Cincinnati - Walker 138kV	Base Case	297
Rivtrin - Walker 138kV	Base Case	304
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	358
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	362
College Station - Bryan 138kV	Bishop - Cedar 138kV	365
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	373
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	376
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	377
Bryan - Pee Dee 138kV	Longmire - Panorama 138kV	379
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	391
College Station - Bryan 138kV	Cincinnati - Walker 138kV	394
College Station - Bryan 138kV	Rivtrin - Walker 138kV	399
Alden - Lewis Creek SES 138kV	Caney Creek - Lewis Creek SES 138kV	425
Bryan - Pee Dee 138kV	Base Case	435
Fort Worth Pipe - Sheawill 138kV	Cleveland - Jacinto 138kV	491
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	494
Caney Creek - Lewis Creek SES 138kV	Alden - Goslin 138kV	496
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	497
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	506
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	519
Alden - Lewis Creek SES 138kV	Conair - Caney Creek 138kV	521
College Station - Grimes 138kV	Bishop - Cedar 138kV	522
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	529
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	529
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	534
College Station - Grimes 138kV	Cincinnati - Walker 138kV	550

Limiting Element	Contingency Element	ATC
College Station - Grimes 138kV	Rivtrin - Walker 138kV	555
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Roy S. Nelson - Richard 500kV	565
Lewis Creek SES - Sheawill 138kV	Lewis Creek 230/138kV transformer	568

## AEPW

Limiting Element	Contingency Element	ATC
Caney Creek - Lewis Creek SES 138kV	Alden - Lewis Creek SES 138kV	0
Conair - Caney Creek 138kV	Alden - Lewis Creek SES 138kV	48
Lewis Creek SES - Sheawill 138kV	Cleveland - Jacinto 138kV	129
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	216
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	218
Bishop - Cedar 138kV	College Station - Bryan 138kV	219
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	222
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	222
Pee Dee - Bishop 138kV	Crockett - Grimes 345kV	222
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	223
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	224
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	226
Bishop - Cedar 138kV	College Station - Speedway 138kV	226
Bishop - Cedar 138kV	Navasota - Speedway 138kV	226
Bishop - Cedar 138kV	Crockett - Grimes 345kV	227
Pee Dee - Bishop 138kV	Goree - Lewis Creek SES 138kV	227
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	227
Pee Dee - Bishop 138kV	Hartburg - Cottonwood2 500kV	227
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	228
Bishop - Cedar 138kV	Grimes - Walden 138kV	231
Bishop - Cedar 138kV	Goree - Lewis Creek SES 138kV	232
Bishop - Cedar 138kV	Hartburg - Cottonwood2 500kV	232
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	236
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	238
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	238
Cedar - Cincinnati 138kV	Crockett - Grimes 345kV	239
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	241
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	243
Cedar - Cincinnati 138kV	Hartburg - Cottonwood2 500kV	245
Cedar - Cincinnati 138kV	Goree - Lewis Creek SES 138kV	245

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Pee Dee - Bishop 138kV	Base Case	247
Cincinnati - Walker 138kV	College Station - Bryan 138kV	250
Bishop - Cedar 138kV	Base Case	252
Rivtrin - Walker 138kV	College Station - Bryan 138kV	255
Cedar - Cincinnati 138kV	Base Case	265
Cincinnati - Walker 138kV	Crockett - Grimes 345kV	271
Cincinnati - Walker 138kV	College Station - Speedway 138kV	271
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	271
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	271
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	277
Cincinnati - Walker 138kV	Grimes - Walden 138kV	278
Rivtrin - Walker 138kV	Crockett - Grimes 345kV	278
Rivtrin - Walker 138kV	College Station - Speedway 138kV	278
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	278
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	279
Cincinnati - Walker 138kV	Hartburg - Cottonwood2 500kV	279
Cincinnati - Walker 138kV	Goree - Lewis Creek SES 138kV	280
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	285
Rivtrin - Walker 138kV	Grimes - Walden 138kV	285
Rivtrin - Walker 138kV	Hartburg - Cottonwood2 500kV	287
Rivtrin - Walker 138kV	Goree - Lewis Creek SES 138kV	288
Cincinnati - Walker 138kV	Base Case	299
Rivtrin - Walker 138kV	Base Case	307
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	352
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	362
College Station - Bryan 138kV	Bishop - Cedar 138kV	365
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	368
Bryan - Pee Dee 138kV	Longmire - Panorama 138kV	372
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	372
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	373
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	385
College Station - Bryan 138kV	Cincinnati - Walker 138kV	394
College Station - Bryan 138kV	Rivtrin - Walker 138kV	399
'MANSFLD4 138' TO BUS 'IPAPER 4 138'	Contingency of FlowGate 5029 DOLHILL7 345 TO SW SHV 7 345	406
Bryan - Pee Dee 138kV	Base Case	429
Alden - Lewis Creek SES 138kV	Caney Creek - Lewis Creek SES 138kV	436
Caney Creek - Lewis Creek SES 138kV	Alden - Goslin 138kV	503
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	515
College Station - Grimes 138kV	Bishop - Cedar 138kV	517
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	518
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	521
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	525
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	530
Fort Worth Pipe - Sheawill 138kV	Cleveland - Jacinto 138kV	530
Alden - Lewis Creek SES 138kV	Conair - Caney Creek 138kV	535
College Station - Grimes 138kV	Cincinnati - Walker 138kV	545
College Station - Grimes 138kV	Rivtrin - Walker 138kV	550



Limiting Element	Contingency Element	ATC
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	555
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	560

## AMRN

Limiting Element	Contingency Element	ATC
Caney Creek - Lewis Creek SES 138kV	Alden - Lewis Creek SES 138kV	0
Conair - Caney Creek 138kV	Alden - Lewis Creek SES 138kV	47
Lewis Creek SES - Sheawill 138kV	Cleveland - Jacinto 138kV	119
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	215
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	216
Bishop - Cedar 138kV	College Station - Bryan 138kV	219
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	219
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	220
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	220
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	220
Pee Dee - Bishop 138kV	Crockett - Grimes 345kV	223
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	224
Bishop - Cedar 138kV	College Station - Speedway 138kV	224
Bishop - Cedar 138kV	Navasota - Speedway 138kV	224
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	225
Pee Dee - Bishop 138kV	Goree - Lewis Creek SES 138kV	225
Pee Dee - Bishop 138kV	Hartburg - Cottonwood2 500kV	225
Bishop - Cedar 138kV	Crockett - Grimes 345kV	227
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	227
Bishop - Cedar 138kV	Grimes - Walden 138kV	228
Bishop - Cedar 138kV	Goree - Lewis Creek SES 138kV	230
Bishop - Cedar 138kV	Hartburg - Cottonwood2 500kV	230
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	232
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	236
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	236
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	238
Cedar - Cincinnati 138kV	Crockett - Grimes 345kV	239
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	241
Cedar - Cincinnati 138kV	Hartburg - Cottonwood2 500kV	242
Cedar - Cincinnati 138kV	Goree - Lewis Creek SES 138kV	243
Pee Dee - Bishop 138kV	Base Case	245

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Bishop - Cedar 138kV	Base Case	250
Cincinnati - Walker 138kV	College Station - Bryan 138kV	250
Rivtrin - Walker 138kV	College Station - Bryan 138kV	255
Cedar - Cincinnati 138kV	Base Case	262
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	267
Cincinnati - Walker 138kV	College Station - Speedway 138kV	269
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	269
Cincinnati - Walker 138kV	Crockett - Grimes 345kV	271
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	273
Cincinnati - Walker 138kV	Grimes - Walden 138kV	275
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	275
Rivtrin - Walker 138kV	College Station - Speedway 138kV	276
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	276
Cincinnati - Walker 138kV	Hartburg - Cottonwood2 500kV	277
Cincinnati - Walker 138kV	Goree - Lewis Creek SES 138kV	278
Rivtrin - Walker 138kV	Crockett - Grimes 345kV	278
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	280
Rivtrin - Walker 138kV	Grimes - Walden 138kV	282
Rivtrin - Walker 138kV	Hartburg - Cottonwood2 500kV	284
Rivtrin - Walker 138kV	Walden - April 138kV	285
Cincinnati - Walker 138kV	Base Case	296
Rivtrin - Walker 138kV	Base Case	304
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	359
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	362
College Station - Bryan 138kV	Bishop - Cedar 138kV	365
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	373
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	376
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	377
Bryan - Pee Dee 138kV	Longmire - Panorama 138kV	379
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	392
College Station - Bryan 138kV	Cincinnati - Walker 138kV	394
College Station - Bryan 138kV	Rivtrin - Walker 138kV	399
Alden - Lewis Creek SES 138kV	Caney Creek - Lewis Creek SES 138kV	424
Bryan - Pee Dee 138kV	Base Case	435
Fort Worth Pipe - Sheawill 138kV	Cleveland - Jacinto 138kV	488
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	493
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	496
Caney Creek - Lewis Creek SES 138kV	Alden - Goslin 138kV	496
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	504
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	519
Alden - Lewis Creek SES 138kV	Conair - Caney Creek 138kV	520
College Station - Grimes 138kV	Bishop - Cedar 138kV	522
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	528
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	530
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	533
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Roy S. Nelson - Richard 500kV	549
College Station - Grimes 138kV	Cincinnati - Walker 138kV	550

Limiting Element	Contingency Element	ATC
College Station - Grimes 138kV	Rivtrin - Walker 138kV	555
Lewis Creek SES - Sheawill 138kV	Lewis Creek 230/138kV transformer	565

## CLECO

Limiting Element	Contingency Element	ATC
Caney Creek - Lewis Creek SES 138kV	Alden - Lewis Creek SES 138kV	0
Conair - Caney Creek 138kV	Alden - Lewis Creek SES 138kV	47
Lewis Creek SES - Sheawill 138kV	Cleveland - Jacinto 138kV	114
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	213
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	216
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	218
Bishop - Cedar 138kV	College Station - Bryan 138kV	218
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	219
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	219
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	219
Pee Dee - Bishop 138kV	Crockett - Grimes 345kV	222
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	223
Bishop - Cedar 138kV	College Station - Speedway 138kV	223
Bishop - Cedar 138kV	Navasota - Speedway 138kV	223
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	223
Pee Dee - Bishop 138kV	Goree - Lewis Creek SES 138kV	224
Pee Dee - Bishop 138kV	Hartburg - Cottonwood2 500kV	225
Bishop - Cedar 138kV	Crockett - Grimes 345kV	227
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	227
Bishop - Cedar 138kV	Grimes - Walden 138kV	227
Bishop - Cedar 138kV	Goree - Lewis Creek SES 138kV	229
Bishop - Cedar 138kV	Hartburg - Cottonwood2 500kV	229
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	231
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	235
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	235
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	236
Cedar - Cincinnati 138kV	Crockett - Grimes 345kV	239
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	239
Cedar - Cincinnati 138kV	Hartburg - Cottonwood2 500kV	241
Cedar - Cincinnati 138kV	Goree - Lewis Creek SES 138kV	242
Pee Dee - Bishop 138kV	Base Case	244

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Bishop - Cedar 138kV	Base Case	249
Cincinnati - Walker 138kV	College Station - Bryan 138kV	250
Rivtrin - Walker 138kV	College Station - Bryan 138kV	255
Cedar - Cincinnati 138kV	Base Case	261
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	265
Cincinnati - Walker 138kV	College Station - Speedway 138kV	268
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	268
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	271
Cincinnati - Walker 138kV	Crockett - Grimes 345kV	271
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	273
Cincinnati - Walker 138kV	Grimes - Walden 138kV	273
Rivtrin - Walker 138kV	College Station - Speedway 138kV	275
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	275
Cincinnati - Walker 138kV	Hartburg - Cottonwood2 500kV	275
Cincinnati - Walker 138kV	Walden - April 138kV	276
Rivtrin - Walker 138kV	Crockett - Grimes 345kV	278
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	279
Rivtrin - Walker 138kV	Grimes - Walden 138kV	281
Rivtrin - Walker 138kV	Hartburg - Cottonwood2 500kV	283
Rivtrin - Walker 138kV	Walden - April 138kV	284
Cincinnati - Walker 138kV	Base Case	295
Rivtrin - Walker 138kV	Base Case	303
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	362
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	362
College Station - Bryan 138kV	Bishop - Cedar 138kV	365
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	373
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	379
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	380
Bryan - Pee Dee 138kV	Longmire - Panorama 138kV	383
College Station - Bryan 138kV	Cincinnati - Walker 138kV	394
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	395
College Station - Bryan 138kV	Rivtrin - Walker 138kV	399
Alden - Lewis Creek SES 138kV	Caney Creek - Lewis Creek SES 138kV	419
Bryan - Pee Dee 138kV	Base Case	438
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Roy S. Nelson - Richard 500kV	466
Fort Worth Pipe - Sheawill 138kV	Cleveland - Jacinto 138kV	468
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	483
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	486
Caney Creek - Lewis Creek SES 138kV	Alden - Goslin 138kV	493
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	494
Bayou Cove - Richard 138kV ckt 1	Roy S. Nelson - Richard 500kV	500
Alden - Lewis Creek SES 138kV	Conair - Caney Creek 138kV	514
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	517
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	521
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	522
College Station - Grimes 138kV	Bishop - Cedar 138kV	524
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	531

Limiting Element	Contingency Element	ATC
Webre 500/230kV transformer Supplemental Upgrade 9Mile	Wells 500/230kV transformer	548
Lewis Creek SES - Sheawill 138kV	Lewis Creek 230/138kV transformer	548
College Station - Grimes 138kV	Cincinnati - Walker 138kV	552
College Station - Grimes 138kV	Rivtrin - Walker 138kV	557

## EES

Limiting Element	Contingency Element	ATC
Baxter Wilson - Ray Braswell 500kV	Franklin - Grand Gulf 500kV	0
Willow Glen 500/230kV Transformer	Coly 500/230kV transformer	0
Willow Glen 500/230kV Transformer	Willow Glen - Willow Glen 2 500/138kV transformer 1	0
Addis - Big Cajun 1 230kV	Willow Glen - Webre 500kV	0
Caney Creek - Lewis Creek SES 138kV	Alden - Lewis Creek SES 138kV	0
Conair - Caney Creek 138kV	Alden - Lewis Creek SES 138kV	44
Lewis Creek SES - Sheawill 138kV	Cleveland - Jacinto 138kV	103
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	166
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Willow Glen - Willow Glen 2 500/138kV transformer 1	Willow Glen 500/230kV Transformer	183
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	198
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	212
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	216
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	217
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	218
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	219
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	219
Bishop - Cedar 138kV	College Station - Bryan 138kV	219
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	222
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	222
Bishop - Cedar 138kV	College Station - Speedway 138kV	223
Bishop - Cedar 138kV	Navasota - Speedway 138kV	223
Pee Dee - Bishop 138kV	Crockett - Grimes 345kV	223
Pee Dee - Bishop 138kV	Goree - Lewis Creek SES 138kV	224
Pee Dee - Bishop 138kV	Hartburg - Cottonwood2 500kV	224
Bishop - Cedar 138kV	Grimes - Walden 138kV	226
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	227
Bishop - Cedar 138kV	Crockett - Grimes 345kV	227
Bishop - Cedar 138kV	Goree - Lewis Creek SES 138kV	228

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Bishop - Cedar 138kV	Hartburg - Cottonwood2 500kV	228
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	230
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	235
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	235
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	235
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	239
Cedar - Cincinnati 138kV	Crockett - Grimes 345kV	240
Cedar - Cincinnati 138kV	Hartburg - Cottonwood2 500kV	241
Cedar - Cincinnati 138kV	Goree - Lewis Creek SES 138kV	241
Pee Dee - Bishop 138kV	Base Case	244
Bishop - Cedar 138kV	Base Case	248
Cincinnati - Walker 138kV	College Station - Bryan 138kV	251
Rivtrin - Walker 138kV	College Station - Bryan 138kV	256
Cedar - Cincinnati 138kV	Base Case	261
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	264
Cincinnati - Walker 138kV	College Station - Speedway 138kV	267
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	267
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	270
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	272
Cincinnati - Walker 138kV	Crockett - Grimes 345kV	272
Cincinnati - Walker 138kV	Grimes - Walden 138kV	273
Rivtrin - Walker 138kV	College Station - Speedway 138kV	275
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	275
Cincinnati - Walker 138kV	Hartburg - Cottonwood2 500kV	275
Cincinnati - Walker 138kV	Walden - April 138kV	276
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	278
Rivtrin - Walker 138kV	Crockett - Grimes 345kV	280
Rivtrin - Walker 138kV	Grimes - Walden 138kV	281
Rivtrin - Walker 138kV	Hartburg - Cottonwood2 500kV	283
Rivtrin - Walker 138kV	Walden - April 138kV	284
Cincinnati - Walker 138kV	Base Case	295
Rivtrin - Walker 138kV	Base Case	303
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	363
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	364
Willow Glen 500/230kV Transformer	Jaguar - Tap Point Esso 230kV	365
College Station - Bryan 138kV	Bishop - Cedar 138kV	366
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	374
Willow Glen 500/230kV Transformer	Addis - Big Cajun 1 230kV	376
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	382
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	382
Bryan - Pee Dee 138kV	Longmire - Panorama 138kV	386
Alden - Lewis Creek SES 138kV	Caney Creek - Lewis Creek SES 138kV	389
College Station - Bryan 138kV	Cincinnati - Walker 138kV	395
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	397
College Station - Bryan 138kV	Rivtrin - Walker 138kV	400
Fort Worth Pipe - Sheawill 138kV	Cleveland - Jacinto 138kV	428
Jaguar - Tap Point Esso 230kV	Addis - Big Cajun 1 230kV	440

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Bryan - Pee Dee 138kV	Base Case	441
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	472
Caney Creek - Lewis Creek SES 138kV	Alden - Goslin 138kV	472
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	475
Alden - Lewis Creek SES 138kV	Conair - Caney Creek 138kV	478
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	483
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	506
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	511
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	526
College Station - Grimes 138kV	Bishop - Cedar 138kV	529
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	537
Lewis Creek SES - Sheawill 138kV	Lewis Creek 230/138kV transformer	546
College Station - Grimes 138kV	Cincinnati - Walker 138kV	558
College Station - Grimes 138kV	Rivtrin - Walker 138kV	563
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Roy S. Nelson - Richard 500kV	570

## EMDE

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Caney Creek - Lewis Creek SES 138kV	Alden - Lewis Creek SES 138kV	0
Conair - Caney Creek 138kV	Alden - Lewis Creek SES 138kV	47
Lewis Creek SES - Sheawill 138kV	Cleveland - Jacinto 138kV	121
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	216
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	216
Bishop - Cedar 138kV	College Station - Bryan 138kV	219
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	220
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	221
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	221
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	221
Pee Dee - Bishop 138kV	Crockett - Grimes 345kV	223
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	224
Bishop - Cedar 138kV	College Station - Speedway 138kV	225
Bishop - Cedar 138kV	Navasota - Speedway 138kV	225
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	226
Pee Dee - Bishop 138kV	Goree - Lewis Creek SES 138kV	226
Pee Dee - Bishop 138kV	Hartburg - Cottonwood2 500kV	226
Bishop - Cedar 138kV	Crockett - Grimes 345kV	227

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	227
Bishop - Cedar 138kV	Grimes - Walden 138kV	229
Bishop - Cedar 138kV	Goree - Lewis Creek SES 138kV	230
Bishop - Cedar 138kV	Hartburg - Cottonwood2 500kV	230
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	233
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	237
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	237
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	238
Cedar - Cincinnati 138kV	Crockett - Grimes 345kV	239
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	241
Cedar - Cincinnati 138kV	Hartburg - Cottonwood2 500kV	243
Cedar - Cincinnati 138kV	Goree - Lewis Creek SES 138kV	243
Pee Dee - Bishop 138kV	Base Case	246
Bishop - Cedar 138kV	Base Case	250
Cincinnati - Walker 138kV	College Station - Bryan 138kV	250
Rivtrin - Walker 138kV	College Station - Bryan 138kV	255
Cedar - Cincinnati 138kV	Base Case	263
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	268
Cincinnati - Walker 138kV	College Station - Speedway 138kV	269
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	269
Cincinnati - Walker 138kV	Crockett - Grimes 345kV	271
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	273
Cincinnati - Walker 138kV	Grimes - Walden 138kV	275
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	276
Rivtrin - Walker 138kV	College Station - Speedway 138kV	276
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	276
Cincinnati - Walker 138kV	Hartburg - Cottonwood2 500kV	277
Rivtrin - Walker 138kV	Crockett - Grimes 345kV	278
Cincinnati - Walker 138kV	Goree - Lewis Creek SES 138kV	278
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	281
Rivtrin - Walker 138kV	Grimes - Walden 138kV	283
Rivtrin - Walker 138kV	Hartburg - Cottonwood2 500kV	285
Rivtrin - Walker 138kV	Goree - Lewis Creek SES 138kV	286
Cincinnati - Walker 138kV	Base Case	297
Rivtrin - Walker 138kV	Base Case	305
Melborne - Sage 161kV	ANO - Fort Smith 500kV	344
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	357
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	362
College Station - Bryan 138kV	Bishop - Cedar 138kV	365
Melborne - Sage 161kV	Dell - Independence SES 500kV	369
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	373
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	374
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	376
Bryan - Pee Dee 138kV	Longmire - Panorama 138kV	378
Harrison East - Omaha 161kV	Green Forest South - Clipper 161kV	387
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	390
College Station - Bryan 138kV	Cincinnati - Walker 138kV	394



<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
College Station - Bryan 138kV	Rivtrin - Walker 138kV	399
Melborne - Sage 161kV	Newport - Newport Industrial 161kV	405
Melborne - Sage 161kV	Newport AB - Newport Industrial 161kV	424
Alden - Lewis Creek SES 138kV	Caney Creek - Lewis Creek SES 138kV	427
Bryan - Pee Dee 138kV	Base Case	434
Melborne - Sage 161kV	Cash - Newport AB 161kV	457
Harrison East - Omaha 161kV	Green Forrest - Green Forrest South 161kV	474
Melborne - Sage 161kV	Cash - Jonesboro 161kV	483
Fort Worth Pipe - Sheawill 138kV	Cleveland - Jacinto 138kV	497
Caney Creek - Lewis Creek SES 138kV	Alden - Goslin 138kV	497
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	498
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	501
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	510
Melborne - Sage 161kV	Sage - Guion 161kV	514
Melborne - Sage 161kV	Newport - Swifton 161kV	514
Melborne - Sage 161kV	Sansouci - Shelby (TVA) 500kV	515
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	518
Harrison East - Omaha 161kV	Berryville - Green Forrest 161kV	519
College Station - Grimes 138kV	Bishop - Cedar 138kV	521
Alden - Lewis Creek SES 138kV	Conair - Caney Creek 138kV	523
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	528
Melborne - Sage 161kV	Mountain View - Guion 161kV	532
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	533
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	539
College Station - Grimes 138kV	Cincinnati - Walker 138kV	549
College Station - Grimes 138kV	Rivtrin - Walker 138kV	554
OZD312 - Omaha 161kV	Green Forest South - Clipper 161kV	564

## Lafa

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Baxter Wilson - Ray Braswell 500kV	Franklin - Grand Gulf 500kV	0
Caney Creek - Lewis Creek SES 138kV	Alden - Lewis Creek SES 138kV	0
Conair - Caney Creek 138kV	Alden - Lewis Creek SES 138kV	46
Scott1 - Bonin 138kV	Wells (CLECO) - Point Mouton (Lafa) 230kV	62
Scott1 - Bonin 138kV	Point Des Mouton (Lafa) - Labbe (Lafa) 230kV	93
Lewis Creek SES - Sheawill 138kV	Cleveland - Jacinto 138kV	108
Webre 500/230kV transformer Supplemental Upgrade 9Mile	Webre - Wells 500kV	123
Semere - Scott2 138kV	Wells (CLECO) - Point Mouton (Lafa) 230kV	153
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Semere - Scott2 138kV	Point Des Mouton (Lafa) - Labbe (Lafa) 230kV	184

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	211
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	215
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	216
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	217
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	218
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	218
Bishop - Cedar 138kV	College Station - Bryan 138kV	218
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	221
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	221
North Crowley - Scott1 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	221
Bishop - Cedar 138kV	College Station - Speedway 138kV	222
Bishop - Cedar 138kV	Navasota - Speedway 138kV	222
Pee Dee - Bishop 138kV	Crockett - Grimes 345kV	223
Pee Dee - Bishop 138kV	Goree - Lewis Creek SES 138kV	223
Pee Dee - Bishop 138kV	Hartburg - Cottonwood2 500kV	223
Bishop - Cedar 138kV	Grimes - Walden 138kV	225
Bishop - Cedar 138kV	Crockett - Grimes 345kV	227
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	227
Bishop - Cedar 138kV	Hartburg - Cottonwood2 500kV	227
Bishop - Cedar 138kV	Goree - Lewis Creek SES 138kV	227
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	228
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	234
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	234
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	234
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	238
Cedar - Cincinnati 138kV	Crockett - Grimes 345kV	239
Cedar - Cincinnati 138kV	Hartburg - Cottonwood2 500kV	240
Cedar - Cincinnati 138kV	Goree - Lewis Creek SES 138kV	240
Pee Dee - Bishop 138kV	Base Case	243
Bishop - Cedar 138kV	Base Case	247
Cincinnati - Walker 138kV	College Station - Bryan 138kV	250
North Crowley - Scott1 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	251
Semere - Scott2 138kV	Richard 500/230kV transformer	252
Semere - Scott2 138kV	Richard - Sellers Road 230kV	253
Rivtrin - Walker 138kV	College Station - Bryan 138kV	255
Cedar - Cincinnati 138kV	Base Case	260
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	263
Cincinnati - Walker 138kV	College Station - Speedway 138kV	266
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	266
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	268
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	270
Cincinnati - Walker 138kV	Crockett - Grimes 345kV	271
Cincinnati - Walker 138kV	Grimes - Walden 138kV	271

Limiting Element	Contingency Element	ATC
Rivtrin - Walker 138kV	College Station - Speedway 138kV	273
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	273
Cincinnati - Walker 138kV	Hartburg - Cottonwood2 500kV	274
Cincinnati - Walker 138kV	Walden - April 138kV	274
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	276
Rivtrin - Walker 138kV	Crockett - Grimes 345kV	278
Rivtrin - Walker 138kV	Grimes - Walden 138kV	279
Rivtrin - Walker 138kV	Hartburg - Cottonwood2 500kV	281
Rivtrin - Walker 138kV	Walden - April 138kV	282
Webre 500/230kV transformer Supplemental Upgrade 9Mile	Wells 500/230kV transformer	292
Cincinnati - Walker 138kV	Base Case	294
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Roy S. Nelson - Richard 500kV	299
Rivtrin - Walker 138kV	Base Case	301
Bayou Cove - Richard 138kV ckt 1	Roy S. Nelson - Richard 500kV	323
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	362
Habetz - Richard 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	363
College Station - Bryan 138kV	Bishop - Cedar 138kV	365
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	367
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	373
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	384
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	385
Bryan - Pee Dee 138kV	Longmire - Panorama 138kV	388
College Station - Bryan 138kV	Cincinnati - Walker 138kV	394
College Station - Bryan 138kV	Rivtrin - Walker 138kV	399
Habetz - Richard 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	399
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	399
Colonial Academy - Richard 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	408
Alden - Lewis Creek SES 138kV	Caney Creek - Lewis Creek SES 138kV	410
North Crowley - Scott1 138kV	Richard - Scott1 138kV	427
Richard - Scott1 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	432
Scott1 - Bonin 138kV	Bonin 230/138kV transformer (LAFA)	433
Colonial Academy - Richard 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	439
Bryan - Pee Dee 138kV	Base Case	442
Fort Worth Pipe - Sheawill 138kV	Cleveland - Jacinto 138kV	444
Richard - Scott1 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	462
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	467
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	470
North Crowley - Scott1 138kV	Richard 500/230kV transformer	476
North Crowley - Scott1 138kV	Richard - Sellers Road 230kV	477
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	478
Caney Creek - Lewis Creek SES 138kV	Alden - Goslin 138kV	486
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	500
Alden - Lewis Creek SES 138kV	Conair - Caney Creek 138kV	502
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	505
Lewis Creek SES - Sheawill 138kV	Lewis Creek 230/138kV transformer	514
Scott1 - Bonin 138kV	Flander - Beadle 230kV (LAFA)	520
Acadia - Colonial Academy 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	522

Limiting Element	Contingency Element	ATC
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	525
College Station - Grimes 138kV	Bishop - Cedar 138kV	527
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	535
Lewis Creek SES - Sheavill 138kV	Jacinto - Peach Creek 230kV	543
Bayou Cove - Richard 138kV ckt 2	Roy S. Nelson - Richard 500kV	546
Scott1 - Bonin 138kV	Cocodrie - Vil Plat 230kV	547
Scott1 - Bonin 138kV	Elks - Beadle 230kV (LAFA)	548
Acadia - Colonial Academy 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	553
College Station - Grimes 138kV	Cincinnati - Walker 138kV	556
College Station - Grimes 138kV	Rivtrin - Walker 138kV	561
Bayou Cove - Richard 138kV ckt 1	Bayou Cove - Richard 138kV ckt 2	561
North Crowley - Richard 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	568
Scott1 - Bonin 138kV	Vil Plat - West Fork 230kV	573

## LAGN

Limiting Element	Contingency Element	ATC
Willow Glen 500/230kV Transformer	Coly 500/230kV transformer	0
Baxter Wilson - Ray Braswell 500kV	Franklin - Grand Gulf 500kV	0
Willow Glen 500/230kV Transformer	Willow Glen - Willow Glen 2 500/138kV transformer 1	0
Caney Creek - Lewis Creek SES 138kV	Alden - Lewis Creek SES 138kV	0
Conair - Caney Creek 138kV	Alden - Lewis Creek SES 138kV	47
Coughlin - Plaisance 138kV (CLECO)	Cocodrie - Vil Plat 230kV	80
Lewis Creek SES - Sheavill 138kV	Cleveland - Jacinto 138kV	109
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	211
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	215
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	216
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	217
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	218
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	218
Bishop - Cedar 138kV	College Station - Bryan 138kV	218
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	221
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	221
Bishop - Cedar 138kV	College Station - Speedway 138kV	222
Bishop - Cedar 138kV	Navasota - Speedway 138kV	222
Pee Dee - Bishop 138kV	Crockett - Grimes 345kV	223

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Pee Dee - Bishop 138kV	Goree - Lewis Creek SES 138kV	223
Pee Dee - Bishop 138kV	Huntsville - LINE 558 TAP 138 kV	224
Bishop - Cedar 138kV	Grimes - Walden 138kV	225
Bishop - Cedar 138kV	Crockett - Grimes 345kV	227
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	227
Bishop - Cedar 138kV	Goree - Lewis Creek SES 138kV	227
Bishop - Cedar 138kV	Huntsville - LINE 558 TAP 138 kV	228
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	228
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	234
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	234
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	234
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	238
Cedar - Cincinnati 138kV	Crockett - Grimes 345kV	239
Cedar - Cincinnati 138kV	Goree - Lewis Creek SES 138kV	240
Cedar - Cincinnati 138kV	Walden - April 138kV	241
Pee Dee - Bishop 138kV	Base Case	243
Bishop - Cedar 138kV	Base Case	247
Cincinnati - Walker 138kV	College Station - Bryan 138kV	250
Rivtrin - Walker 138kV	College Station - Bryan 138kV	255
Cedar - Cincinnati 138kV	Base Case	260
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	262
Cincinnati - Walker 138kV	College Station - Speedway 138kV	266
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	266
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	268
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	270
Cincinnati - Walker 138kV	Crockett - Grimes 345kV	271
Cincinnati - Walker 138kV	Grimes - Walden 138kV	271
Rivtrin - Walker 138kV	College Station - Speedway 138kV	273
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	273
Cincinnati - Walker 138kV	Walden - April 138kV	274
Cincinnati - Walker 138kV	Goree - Lewis Creek SES 138kV	275
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	276
Rivtrin - Walker 138kV	Crockett - Grimes 345kV	278
Rivtrin - Walker 138kV	Grimes - Walden 138kV	279
Rivtrin - Walker 138kV	Walden - April 138kV	282
Rivtrin - Walker 138kV	Hartburg - Cottonwood2 500kV	283
Cincinnati - Walker 138kV	Base Case	293
Rivtrin - Walker 138kV	Base Case	301
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	362
College Station - Bryan 138kV	Bishop - Cedar 138kV	365
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	368
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	373
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	384
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	385
Bryan - Pee Dee 138kV	Longmire - Panorama 138kV	389
Coughlin - Plaisance 138kV (CLECO)	Vil Plat - West Fork 230kV	394
College Station - Bryan 138kV	Cincinnati - Walker 138kV	394

Limiting Element	Contingency Element	ATC
College Station - Bryan 138kV	Rivtrin - Walker 138kV	399
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	400
Alden - Lewis Creek SES 138kV	Caney Creek - Lewis Creek SES 138kV	411
Bryan - Pee Dee 138kV	Base Case	443
Fort Worth Pipe - Sheawill 138kV	Cleveland - Jacinto 138kV	449
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	466
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	469
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	477
Caney Creek - Lewis Creek SES 138kV	Alden - Goslin 138kV	488
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	499
Alden - Lewis Creek SES 138kV	Conair - Caney Creek 138kV	503
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	504
Lewis Creek SES - Sheawill 138kV	Lewis Creek 230/138kV transformer	513
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	525
College Station - Grimes 138kV	Bishop - Cedar 138kV	527
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	535
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Roy S. Nelson - Richard 500kV	539
Lewis Creek SES - Sheawill 138kV	Jacinto - Peach Creek 230kV	542
College Station - Grimes 138kV	Cincinnati - Walker 138kV	556
College Station - Grimes 138kV	Rivtrin - Walker 138kV	561

## LEPA

Limiting Element	Contingency Element	ATC
Addis - Big Cajun 1 230kV	Enjay - Fancy 230kV	0
Addis - Big Cajun 1 230kV	Enjay - Jaguar 230kV	0
Addis - Big Cajun 1 230kV	Jaguar - Tap Point Esso 230kV	0
Addis - Big Cajun 1 230kV	Coly - McKnight 500kV	0
Baxter Wilson - Ray Braswell 500kV	Franklin - Grand Gulf 500kV	0
Willow Glen 500/230kV Transformer	Coly 500/230kV transformer	0
Addis - Big Cajun 1 230kV	Willow Glen 500/230kV Transformer	0
Willow Glen 500/230kV Transformer	Willow Glen - Willow Glen 2 500/138kV transformer 1	0
Addis - Big Cajun 1 230kV	Willow Glen - Webre 500kV	0
Caney Creek - Lewis Creek SES 138kV	Alden - Lewis Creek SES 138kV	0
Greenwood - Terrebone 115kV Supplemental Upgrade SunEnergy	Bayou Sales - WaxLake 138kV (CLECO)	35
Conair - Caney Creek 138kV	Alden - Lewis Creek SES 138kV	47
Chauvin - Valentine 115kV	Coteau - Houma 115kV	72
Greenwood - Terrebone 115kV Supplemental Upgrade SunEnergy	Bayou Sales - Teche 138kV (CLECO)	82
Chauvin - Ashland 115kV	Coteau - Houma 115kV	84
Raceland - Coteau 115kV	Terrebone 230/115kV transformer	88
Lewis Creek SES - Sheawill 138kV	Cleveland - Jacinto 138kV	110
Greenwood - Terrebone 115kV Supplemental Upgrade SunEnergy	ELPTAP - Wax Lake 138kV (CLECO)	119
Willow Glen - Willow Glen 2 500/138kV transformer 1	Willow Glen 500/230kV Transformer	130

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Ashland - Houma 115kV	Coteau - Houma 115kV	160
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Conway - Wyandotte 138kV	Addis - Wilbert 138kV	166
Geismar - Wyandotte 138kV	Addis - Wilbert 138kV	167
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Coteau - Houma 115kV	Chauvin - Valentine 115kV	172
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Greenwood - Terrebone 115kV Supplemental Upgrade SunEnergy	Bayou Vista - ELPTAP 138kV (CLECO)	179
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Greenwood - Humphrey 115kV	Bayou Sales - WaxLake 138kV (CLECO)	181
Terrebone 230/115kV transformer	Bayou Sales - WaxLake 138kV (CLECO)	184
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Coteau - Houma 115kV	Chauvin - Ashland 115kV	200
Gibson - Humphrey 115kV	Bayou Sales - WaxLake 138kV (CLECO)	201
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Terrebone 230/115kV transformer	Bayou Sales - Teche 138kV (CLECO)	203
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	212
Raceland - Coteau 115kV	Terrebone - Coteau 115kV	212
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	215
Houma - City of Houma 115kV	Claytonia - Gypsy 115kV	216
Houma - City of Houma 115kV	Gifford - Malvern North 115kV	216
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	216
Houma - City of Houma 115kV	Lacon - 8LNG 138kV	216
Houma - City of Houma 115kV	Lucky - Texas Eastern 115kV	216
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	217
Terrebone 230/115kV transformer	ELPTAP - Wax Lake 138kV (CLECO)	218
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	218
Bishop - Cedar 138kV	College Station - Bryan 138kV	218
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	218
Terrebone 230/115kV transformer	Raceland - Coteau 115kV	220
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	222
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	222
Bishop - Cedar 138kV	College Station - Speedway 138kV	222
Bishop - Cedar 138kV	Navasota - Speedway 138kV	222
Pee Dee - Bishop 138kV	Crockett - Grimes 345kV	223
Pee Dee - Bishop 138kV	Goree - Lewis Creek SES 138kV	223
Pee Dee - Bishop 138kV	Hartburg - Cottonwood2 500kV	224
Bishop - Cedar 138kV	Grimes - Walden 138kV	226
Bishop - Cedar 138kV	Crockett - Grimes 345kV	227
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	227
Terrebone - Coteau 115kV	Raceland - Coteau 115kV	228
Bishop - Cedar 138kV	Goree - Lewis Creek SES 138kV	228
Bishop - Cedar 138kV	Hartburg - Cottonwood2 500kV	228

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Greenwood - Humphrey 115kV	Bayou Sales - Teche 138kV (CLECO)	228
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	229
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	234
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	234
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	234
Houma - City of Houma 115kV	Base Case	237
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	238
Cedar - Cincinnati 138kV	Crockett - Grimes 345kV	239
Cedar - Cincinnati 138kV	Hartburg - Cottonwood2 500kV	240
Cedar - Cincinnati 138kV	Goree - Lewis Creek SES 138kV	241
Terrebone 230/115kV transformer	Bayou Vista - ELPTAP 138kV (CLECO)	242
Pee Dee - Bishop 138kV	Base Case	243
Coteau - Houma 115kV	Waterford - Valentine 230kV	245
Coteau - Houma 115kV	Valentine 230/115kV transformer	245
Gibson - Humphrey 115kV	Bayou Sales - Teche 138kV (CLECO)	248
Bishop - Cedar 138kV	Base Case	248
Cincinnati - Walker 138kV	College Station - Bryan 138kV	250
Rivtrin - Walker 138kV	College Station - Bryan 138kV	255
Willow Glen 500/230kV Transformer	Jaguar - Tap Point Esso 230kV	258
Cedar - Cincinnati 138kV	Base Case	260
Coteau - Houma 115kV	Ashland - Houma 115kV	261
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	263
Greenwood - Humphrey 115kV	ELPTAP - Wax Lake 138kV (CLECO)	265
Cincinnati - Walker 138kV	College Station - Speedway 138kV	266
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	266
Vacherie - Waterford 230kV Supplemental Upgrade SunEnergy	Raceland - Waterford 230kV	268
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	269
Cincinnati - Walker 138kV	Crockett - Grimes 345kV	271
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	271
Cincinnati - Walker 138kV	Grimes - Walden 138kV	272
Willow Glen 500/230kV Transformer	Addis - Big Cajun 1 230kV	273
Rivtrin - Walker 138kV	College Station - Speedway 138kV	274
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	274
Cincinnati - Walker 138kV	Hartburg - Cottonwood2 500kV	274
Cincinnati - Walker 138kV	Walden - April 138kV	275
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	277
Rivtrin - Walker 138kV	Crockett - Grimes 345kV	278
Rivtrin - Walker 138kV	Grimes - Walden 138kV	279
Rivtrin - Walker 138kV	Hartburg - Cottonwood2 500kV	282
Rivtrin - Walker 138kV	Walden - April 138kV	283
Gibson - Humphrey 115kV	ELPTAP - Wax Lake 138kV (CLECO)	284
Jaguar - Tap Point Esso 230kV	Addis - Big Cajun 1 230kV	289
Cincinnati - Walker 138kV	Base Case	294
Rivtrin - Walker 138kV	Base Case	302
Coteau - Houma 115kV	Barataria - Nine Mile 115kV	313
Raceland 230/115kV transformer	Terrebone 230/115kV transformer	314
Coteau - Houma 115kV	Greenwood - Terrebone 115kV Supplemental	314



Limiting Element	Contingency Element	ATC
	Upgrade SunEnergy	
Terrebone 230/115kV transformer	Bayou Vista - BERWKTP4 138kV (CLECO)	319
Coteau - Houma 115kV	Greenwood - Humphrey 115kV	321
Terrebone 230/115kV transformer	Ramos - BERWKTP4 138kV (CLECO)	322
Coteau - Houma 115kV	Gibson - Humphrey 115kV	322
Coteau - Houma 115kV	Golden Meadow - Barataria 115kV	324
Greenwood - Humphrey 115kV	Bayou Vista - ELPTAP 138kV (CLECO)	326
Raceland - Coteau 115kV	Landry - Raceland 230kV	332
Valentine 230/115kV transformer	Coteau - Houma 115kV	334
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Roy S. Nelson - Richard 500kV	339
Gibson - Humphrey 115kV	Bayou Vista - ELPTAP 138kV (CLECO)	345
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	362
Coteau - Houma 115kV	Base Case	364
College Station - Bryan 138kV	Bishop - Cedar 138kV	365
Gibson - Ramos 138kV	Bayou Sales - WaxLake 138kV (CLECO)	366
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	366
Bayou Cove - Richard 138kV ckt 1	Roy S. Nelson - Richard 500kV	367
Terrebone 230/115kV transformer	Raceland 230/115kV transformer	369
Greenwood - Terrebone 115kV Supplemental Upgrade SunEnergy	Bayou Vista - BERWKTP4 138kV (CLECO)	369
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	373
Raceland - Coteau 115kV	Landry - Terrebonne 230kV	375
Greenwood - Terrebone 115kV Supplemental Upgrade SunEnergy	Ramos - BERWKTP4 138kV (CLECO)	377
Raceland - Coteau 115kV	Bayou Sales - WaxLake 138kV (CLECO)	378
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	382
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	383
Bryan - Pee Dee 138kV	Longmire - Panorama 138kV	387
Raceland - Coteau 115kV	Bayou Sales - Teche 138kV (CLECO)	389
Raceland - Coteau 115kV	Chauvin - Valentine 115kV	392
College Station - Bryan 138kV	Cincinnati - Walker 138kV	394
Raceland - Coteau 115kV	ELPTAP - Wax Lake 138kV (CLECO)	398
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	398
College Station - Bryan 138kV	Rivtrin - Walker 138kV	399
Bonin - Cecelia 138kV	Colonial Academy - Richard 138kV	409
Raceland - Coteau 115kV	Bayou Vista - ELPTAP 138kV (CLECO)	412
Alden - Lewis Creek SES 138kV	Caney Creek - Lewis Creek SES 138kV	412
Gibson - Ramos 138kV	Bayou Sales - Teche 138kV (CLECO)	413
Raceland - Coteau 115kV	Chauvin - Ashland 115kV	421
Terrebone 230/115kV transformer	Chauvin - Valentine 115kV	424
Bryan - Pee Dee 138kV	Base Case	441
Terrebone 230/115kV transformer	Chauvin - Ashland 115kV	445
Terrebone - Coteau 115kV	Raceland 230/115kV transformer	446
Gibson - Ramos 138kV	ELPTAP - Wax Lake 138kV (CLECO)	449
Fort Worth Pipe - Sheawill 138kV	Cleveland - Jacinto 138kV	452
Louisiana Station - Thomas 138kV	Big Cajun 2 - Webre 500kV	454
Gibson 138/115kV transformer	Bayou Sales - WaxLake 138kV (CLECO)	469
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	471

Limiting Element	Contingency Element	ATC
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	474
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	483
Terrebone - Coteau 115kV	Chauvin - Valentine 115kV	485
Caney Creek - Lewis Creek SES 138kV	Alden - Goslin 138kV	488
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	505
Semere - Scott2 138kV	Richard 500/230kV transformer	505
Alden - Lewis Creek SES 138kV	Conair - Caney Creek 138kV	505
Semere - Scott2 138kV	Richard - Sellers Road 230kV	506
Gibson - Ramos 138kV	Bayou Vista - ELPTAP 138kV (CLECO)	510
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	510
Terrebone - Coteau 115kV	Chauvin - Ashland 115kV	512
Terrebone - Coteau 115kV	Waterford - Valentine 230kV	513
Raceland 230/115kV transformer	Terrebone - Coteau 115kV	514
Terrebone - Coteau 115kV	Valentine 230/115kV transformer	514
Greenwood - Humphrey 115kV	Bayou Vista - BERWKTP4 138kV (CLECO)	515
Gibson 138/115kV transformer	Bayou Sales - Teche 138kV (CLECO)	516
Lewis Creek SES - Sheawill 138kV	Lewis Creek 230/138kV transformer	523
Greenwood - Humphrey 115kV	Ramos - BERWKTP4 138kV (CLECO)	523
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	524
College Station - Grimes 138kV	Bishop - Cedar 138kV	526
Louisiana Station - Thomas 138kV	Enjay - Fancy 230kV	531
Louisiana Station - Thomas 138kV	Coughlin - Plaisance 138kV (CLECO)	533
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	534
Gibson - Humphrey 115kV	Bayou Vista - BERWKTP4 138kV (CLECO)	535
Gibson - Humphrey 115kV	Ramos - BERWKTP4 138kV (CLECO)	543
Judice - Scott1 138kV	Richard 500/230kV transformer	547
Judice - Scott1 138kV	Richard - Sellers Road 230kV	549
Gibson 138/115kV transformer	ELPTAP - Wax Lake 138kV (CLECO)	552
Lewis Creek SES - Sheawill 138kV	Jacinto - Peach Creek 230kV	552
College Station - Grimes 138kV	Cincinnati - Walker 138kV	555
College Station - Grimes 138kV	Rivtrin - Walker 138kV	560
Terrebone - Coteau 115kV	Greenwood - Terrebone 115kV Supplemental Upgrade SunEnergy	566
Terrebone - Coteau 115kV	Ashland - Houma 115kV	572
Raceland - Waterford 230kV	Vacherie - Thibodaux 230kV	573

## OKGE

Limiting Element	Contingency Element	ATC
Caney Creek - Lewis Creek SES 138kV	Alden - Lewis Creek SES 138kV	0
Conair - Caney Creek 138kV	Alden - Lewis Creek SES 138kV	48
Lewis Creek SES - Sheawill 138kV	Cleveland - Jacinto 138kV	123
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	216
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	216
Bishop - Cedar 138kV	College Station - Bryan 138kV	219
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	221
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	221
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	221
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	222
Pee Dee - Bishop 138kV	Crockett - Grimes 345kV	223
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	225
Bishop - Cedar 138kV	College Station - Speedway 138kV	225
Bishop - Cedar 138kV	Navasota - Speedway 138kV	225
Pee Dee - Bishop 138kV	Goree - Lewis Creek SES 138kV	226
Pee Dee - Bishop 138kV	Hartburg - Cottonwood2 500kV	226
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	226
Bishop - Cedar 138kV	Crockett - Grimes 345kV	227
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	227
Bishop - Cedar 138kV	Grimes - Walden 138kV	229
Bishop - Cedar 138kV	Goree - Lewis Creek SES 138kV	230
Bishop - Cedar 138kV	Hartburg - Cottonwood2 500kV	231
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	234
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	237
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	237
Cedar - Cincinnati 138kV	Crockett - Grimes 345kV	239
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	239
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	242
Cedar - Cincinnati 138kV	Hartburg - Cottonwood2 500kV	243
Cedar - Cincinnati 138kV	Goree - Lewis Creek SES 138kV	243
Pee Dee - Bishop 138kV	Base Case	246
Cincinnati - Walker 138kV	College Station - Bryan 138kV	250
Bishop - Cedar 138kV	Base Case	251
Rivtrin - Walker 138kV	College Station - Bryan 138kV	255
Cedar - Cincinnati 138kV	Base Case	263
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	269
Cincinnati - Walker 138kV	College Station - Speedway 138kV	270
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	270
Cincinnati - Walker 138kV	Crockett - Grimes 345kV	271
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	274
Cincinnati - Walker 138kV	Grimes - Walden 138kV	276
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	277
Rivtrin - Walker 138kV	College Station - Speedway 138kV	277
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	277
Cincinnati - Walker 138kV	Hartburg - Cottonwood2 500kV	278

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Rivtrin - Walker 138kV	Crockett - Grimes 345kV	278
Cincinnati - Walker 138kV	Goree - Lewis Creek SES 138kV	279
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	282
Rivtrin - Walker 138kV	Grimes - Walden 138kV	284
Rivtrin - Walker 138kV	Hartburg - Cottonwood2 500kV	285
Rivtrin - Walker 138kV	Goree - Lewis Creek SES 138kV	287
Cincinnati - Walker 138kV	Base Case	298
Rivtrin - Walker 138kV	Base Case	305
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	356
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	362
College Station - Bryan 138kV	Bishop - Cedar 138kV	365
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	373
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	373
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	375
Bryan - Pee Dee 138kV	Longmire - Panorama 138kV	376
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	389
College Station - Bryan 138kV	Cincinnati - Walker 138kV	394
College Station - Bryan 138kV	Rivtrin - Walker 138kV	399
Alden - Lewis Creek SES 138kV	Caney Creek - Lewis Creek SES 138kV	429
Bryan - Pee Dee 138kV	Base Case	433
Caney Creek - Lewis Creek SES 138kV	Alden - Goslin 138kV	499
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	504
Fort Worth Pipe - Sheawill 138kV	Cleveland - Jacinto 138kV	506
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	507
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	515
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	517
College Station - Grimes 138kV	Bishop - Cedar 138kV	520
Alden - Lewis Creek SES 138kV	Conair - Caney Creek 138kV	526
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	527
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	539
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	545
College Station - Grimes 138kV	Cincinnati - Walker 138kV	548
College Station - Grimes 138kV	Rivtrin - Walker 138kV	553

## **SMEPA**

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Baxter Wilson - Ray Braswell 500kV	Franklin - Grand Gulf 500kV	0
Caney Creek - Lewis Creek SES 138kV	Alden - Lewis Creek SES 138kV	0
Conair - Caney Creek 138kV	Alden - Lewis Creek SES 138kV	47
Lewis Creek SES - Sheawill 138kV	Cleveland - Jacinto 138kV	114
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	213
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	215
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	218
Bishop - Cedar 138kV	College Station - Bryan 138kV	218
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	219
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	219
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	219
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	222
Pee Dee - Bishop 138kV	Crockett - Grimes 345kV	223
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	223
Bishop - Cedar 138kV	College Station - Speedway 138kV	223
Bishop - Cedar 138kV	Navasota - Speedway 138kV	223
Pee Dee - Bishop 138kV	Goree - Lewis Creek SES 138kV	224
Pee Dee - Bishop 138kV	Hartburg - Cottonwood2 500kV	224
Bishop - Cedar 138kV	Crockett - Grimes 345kV	227
Bishop - Cedar 138kV	Grimes - Walden 138kV	227
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	227
Bishop - Cedar 138kV	Goree - Lewis Creek SES 138kV	229
Bishop - Cedar 138kV	Hartburg - Cottonwood2 500kV	229
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	230
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	235
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	235
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	236
Cedar - Cincinnati 138kV	Crockett - Grimes 345kV	239
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	239
Cedar - Cincinnati 138kV	Hartburg - Cottonwood2 500kV	241
Cedar - Cincinnati 138kV	Goree - Lewis Creek SES 138kV	241
Pee Dee - Bishop 138kV	Base Case	244
Bishop - Cedar 138kV	Base Case	248
Cincinnati - Walker 138kV	College Station - Bryan 138kV	250
Rivtrin - Walker 138kV	College Station - Bryan 138kV	255
Cedar - Cincinnati 138kV	Base Case	261
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	265
Cincinnati - Walker 138kV	College Station - Speedway 138kV	267
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	267
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	270
Cincinnati - Walker 138kV	Crockett - Grimes 345kV	271
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	273
Cincinnati - Walker 138kV	Grimes - Walden 138kV	273
Rivtrin - Walker 138kV	College Station - Speedway 138kV	275
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	275
Cincinnati - Walker 138kV	Hartburg - Cottonwood2 500kV	275
Cincinnati - Walker 138kV	Walden - April 138kV	276

Limiting Element	Contingency Element	ATC
Rivtrin - Walker 138kV	Crockett - Grimes 345kV	278
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	278
Rivtrin - Walker 138kV	Grimes - Walden 138kV	281
Rivtrin - Walker 138kV	Hartburg - Cottonwood2 500kV	283
Rivtrin - Walker 138kV	Walden - April 138kV	284
Cincinnati - Walker 138kV	Base Case	295
Rivtrin - Walker 138kV	Base Case	303
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	362
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	363
College Station - Bryan 138kV	Bishop - Cedar 138kV	365
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	373
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	380
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	380
Bryan - Pee Dee 138kV	Longmire - Panorama 138kV	384
College Station - Bryan 138kV	Cincinnati - Walker 138kV	394
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	395
College Station - Bryan 138kV	Rivtrin - Walker 138kV	399
Alden - Lewis Creek SES 138kV	Caney Creek - Lewis Creek SES 138kV	418
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Roy S. Nelson - Richard 500kV	427
Bryan - Pee Dee 138kV	Base Case	439
Bayou Cove - Richard 138kV ckt 1	Roy S. Nelson - Richard 500kV	462
Fort Worth Pipe - Sheawill 138kV	Cleveland - Jacinto 138kV	468
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	480
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	483
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	492
Caney Creek - Lewis Creek SES 138kV	Alden - Goslin 138kV	492
Alden - Lewis Creek SES 138kV	Conair - Caney Creek 138kV	512
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	514
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	520
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	522
College Station - Grimes 138kV	Bishop - Cedar 138kV	524
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	532
Lewis Creek SES - Sheawill 138kV	Lewis Creek 230/138kV transformer	540
College Station - Grimes 138kV	Cincinnati - Walker 138kV	553
College Station - Grimes 138kV	Rivtrin - Walker 138kV	558
Lewis Creek SES - Sheawill 138kV	Jacinto - Peach Creek 230kV	571

## SOCO

Limiting Element	Contingency Element	ATC
Baxter Wilson - Ray Braswell 500kV	Franklin - Grand Gulf 500kV	0
Caney Creek - Lewis Creek SES 138kV	Alden - Lewis Creek SES 138kV	0
Conair - Caney Creek 138kV	Alden - Lewis Creek SES 138kV	47
Lewis Creek SES - Sheawill 138kV	Cleveland - Jacinto 138kV	116
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	214
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	216
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	218
Bishop - Cedar 138kV	College Station - Bryan 138kV	218
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	219
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	220
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	220
Pee Dee - Bishop 138kV	Crockett - Grimes 345kV	223
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	223
Bishop - Cedar 138kV	College Station - Speedway 138kV	224
Bishop - Cedar 138kV	Navasota - Speedway 138kV	224
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	224
Pee Dee - Bishop 138kV	Goree - Lewis Creek SES 138kV	225
Pee Dee - Bishop 138kV	Hartburg - Cottonwood2 500kV	225
Bishop - Cedar 138kV	Crockett - Grimes 345kV	227
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	227
Bishop - Cedar 138kV	Grimes - Walden 138kV	227
Bishop - Cedar 138kV	Goree - Lewis Creek SES 138kV	229
Bishop - Cedar 138kV	Hartburg - Cottonwood2 500kV	229
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	231
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	236
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	236
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	237
Cedar - Cincinnati 138kV	Crockett - Grimes 345kV	239
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	240
Cedar - Cincinnati 138kV	Hartburg - Cottonwood2 500kV	242
Cedar - Cincinnati 138kV	Goree - Lewis Creek SES 138kV	242
Pee Dee - Bishop 138kV	Base Case	245
Bishop - Cedar 138kV	Base Case	249
Cincinnati - Walker 138kV	College Station - Bryan 138kV	250
Rivtrin - Walker 138kV	College Station - Bryan 138kV	255
Cedar - Cincinnati 138kV	Base Case	262
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	266
Cincinnati - Walker 138kV	College Station - Speedway 138kV	268
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	268
Cincinnati - Walker 138kV	Crockett - Grimes 345kV	271
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	271
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	274
Cincinnati - Walker 138kV	Grimes - Walden 138kV	274
Rivtrin - Walker 138kV	College Station - Speedway 138kV	275

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	275
Cincinnati - Walker 138kV	Hartburg - Cottonwood2 500kV	276
Cincinnati - Walker 138kV	Walden - April 138kV	277
Rivtrin - Walker 138kV	Crockett - Grimes 345kV	278
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	279
Rivtrin - Walker 138kV	Grimes - Walden 138kV	281
Rivtrin - Walker 138kV	Hartburg - Cottonwood2 500kV	283
Rivtrin - Walker 138kV	Walden - April 138kV	284
Cincinnati - Walker 138kV	Base Case	296
Rivtrin - Walker 138kV	Base Case	303
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	361
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	362
College Station - Bryan 138kV	Bishop - Cedar 138kV	365
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	373
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	378
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	379
Bryan - Pee Dee 138kV	Longmire - Panorama 138kV	382
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	394
College Station - Bryan 138kV	Cincinnati - Walker 138kV	394
College Station - Bryan 138kV	Rivtrin - Walker 138kV	399
Alden - Lewis Creek SES 138kV	Caney Creek - Lewis Creek SES 138kV	421
Bryan - Pee Dee 138kV	Base Case	437
Fort Worth Pipe - Sheawill 138kV	Cleveland - Jacinto 138kV	477
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Roy S. Nelson - Richard 500kV	484
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	486
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	489
Caney Creek - Lewis Creek SES 138kV	Alden - Goslin 138kV	494
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	497
Alden - Lewis Creek SES 138kV	Conair - Caney Creek 138kV	515
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	520
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	521
College Station - Grimes 138kV	Bishop - Cedar 138kV	523
Bayou Cove - Richard 138kV ckt 1	Roy S. Nelson - Richard 500kV	524
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	526
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	531
Lewis Creek SES - Sheawill 138kV	Lewis Creek 230/138kV transformer	551
College Station - Grimes 138kV	Cincinnati - Walker 138kV	552
College Station - Grimes 138kV	Rivtrin - Walker 138kV	556

## SPA

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Caney Creek - Lewis Creek SES 138kV	Alden - Lewis Creek SES 138kV	0
Conair - Caney Creek 138kV	Alden - Lewis Creek SES 138kV	47
Lewis Creek SES - Sheawill 138kV	Cleveland - Jacinto 138kV	121



Limiting Element	Contingency Element	ATC
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	215
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	216
Bishop - Cedar 138kV	College Station - Bryan 138kV	219
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	220
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	220
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	220
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	221
Pee Dee - Bishop 138kV	Crockett - Grimes 345kV	223
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	224
Bishop - Cedar 138kV	College Station - Speedway 138kV	225
Bishop - Cedar 138kV	Navasota - Speedway 138kV	225
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	225
Pee Dee - Bishop 138kV	Goree - Lewis Creek SES 138kV	225
Pee Dee - Bishop 138kV	Hartburg - Cottonwood2 500kV	226
Bishop - Cedar 138kV	Crockett - Grimes 345kV	227
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	227
Bishop - Cedar 138kV	Grimes - Walden 138kV	229
Bishop - Cedar 138kV	Goree - Lewis Creek SES 138kV	230
Bishop - Cedar 138kV	Hartburg - Cottonwood2 500kV	230
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	233
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	237
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	237
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	238
Cedar - Cincinnati 138kV	Crockett - Grimes 345kV	239
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	241
Cedar - Cincinnati 138kV	Hartburg - Cottonwood2 500kV	243
Cedar - Cincinnati 138kV	Goree - Lewis Creek SES 138kV	243
Pee Dee - Bishop 138kV	Base Case	246
Bishop - Cedar 138kV	Base Case	250
Cincinnati - Walker 138kV	College Station - Bryan 138kV	250
Rivtrin - Walker 138kV	College Station - Bryan 138kV	255
Cedar - Cincinnati 138kV	Base Case	263
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	268
Cincinnati - Walker 138kV	College Station - Speedway 138kV	269
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	269
Cincinnati - Walker 138kV	Crockett - Grimes 345kV	271
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	273

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Cincinnati - Walker 138kV	Grimes - Walden 138kV	275
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	276
Rivtrin - Walker 138kV	College Station - Speedway 138kV	276
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	276
Cincinnati - Walker 138kV	Hartburg - Cottonwood2 500kV	277
Cincinnati - Walker 138kV	Goree - Lewis Creek SES 138kV	278
Rivtrin - Walker 138kV	Crockett - Grimes 345kV	278
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	281
Rivtrin - Walker 138kV	Grimes - Walden 138kV	283
Rivtrin - Walker 138kV	Hartburg - Cottonwood2 500kV	285
Rivtrin - Walker 138kV	Goree - Lewis Creek SES 138kV	286
Melborne - Sage 161kV	ANO - Fort Smith 500kV	292
Cincinnati - Walker 138kV	Base Case	297
Melborne - Sage 161kV	Dell - Independence SES 500kV	304
Rivtrin - Walker 138kV	Base Case	305
Melborne - Sage 161kV	Newport - Newport Industrial 161kV	319
Melborne - Sage 161kV	Newport AB - Newport Industrial 161kV	334
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	358
Melborne - Sage 161kV	Cash - Newport AB 161kV	360
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	362
College Station - Bryan 138kV	Bishop - Cedar 138kV	365
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	373
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	375
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	376
Bryan - Pee Dee 138kV	Longmire - Panorama 138kV	378
Melborne - Sage 161kV	Cash - Jonesboro 161kV	381
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	391
College Station - Bryan 138kV	Cincinnati - Walker 138kV	394
College Station - Bryan 138kV	Rivtrin - Walker 138kV	399
Melborne - Sage 161kV	Sage - Guion 161kV	413
Melborne - Sage 161kV	Sansouci - Shelby (TVA) 500kV	416
Melborne - Sage 161kV	Newport - Swifton 161kV	420
Melborne - Sage 161kV	Independence SES - Keo 500kV	423
Alden - Lewis Creek SES 138kV	Caney Creek - Lewis Creek SES 138kV	426
Bryan - Pee Dee 138kV	Base Case	434
Pleasant Hill 500/161kV transformer	ANO 500/115kV transformer	487
Fort Worth Pipe - Sheawill 138kV	Cleveland - Jacinto 138kV	495
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	497
Caney Creek - Lewis Creek SES 138kV	Alden - Goslin 138kV	497
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	500
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	509
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	518
College Station - Grimes 138kV	Bishop - Cedar 138kV	521
Alden - Lewis Creek SES 138kV	Conair - Caney Creek 138kV	522
Calico Rock - Melborne 161kV	ANO - Fort Smith 500kV	522
Lake Conway - Mayflower 115kV	Pleasant Hill 500/161kV transformer	527
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	529

Limiting Element	Contingency Element	ATC
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	532
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	537
Calico Rock - Melbourne 161kV	Dell - Independence SES 500kV	548
College Station - Grimes 138kV	Cincinnati - Walker 138kV	549
College Station - Grimes 138kV	Rivtrin - Walker 138kV	554
Calico Rock - Melbourne 161kV	Newport - Newport Industrial 161kV	562
Lewis Creek SES - Sheawill 138kV	Lewis Creek 230/138kV transformer	574

## TVA

Limiting Element	Contingency Element	ATC
Baxter Wilson - Ray Braswell 500kV	Franklin - Grand Gulf 500kV	0
Caney Creek - Lewis Creek SES 138kV	Alden - Lewis Creek SES 138kV	0
Conair - Caney Creek 138kV	Alden - Lewis Creek SES 138kV	47
Lewis Creek SES - Sheawill 138kV	Cleveland - Jacinto 138kV	117
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	214
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	216
Bishop - Cedar 138kV	College Station - Bryan 138kV	218
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	219
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	220
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	220
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	220
Pee Dee - Bishop 138kV	Crockett - Grimes 345kV	223
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	223
Bishop - Cedar 138kV	College Station - Speedway 138kV	224
Bishop - Cedar 138kV	Navasota - Speedway 138kV	224
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	224
Pee Dee - Bishop 138kV	Goree - Lewis Creek SES 138kV	225
Pee Dee - Bishop 138kV	Hartburg - Cottonwood2 500kV	225
Bishop - Cedar 138kV	Crockett - Grimes 345kV	227
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	227
Bishop - Cedar 138kV	Grimes - Walden 138kV	228
Bishop - Cedar 138kV	Goree - Lewis Creek SES 138kV	229
Bishop - Cedar 138kV	Hartburg - Cottonwood2 500kV	229
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	231
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	236
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	236

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	237
Cedar - Cincinnati 138kV	Crockett - Grimes 345kV	239
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	240
Cedar - Cincinnati 138kV	Hartburg - Cottonwood2 500kV	242
Cedar - Cincinnati 138kV	Goree - Lewis Creek SES 138kV	242
Pee Dee - Bishop 138kV	Base Case	245
Bishop - Cedar 138kV	Base Case	249
Cincinnati - Walker 138kV	College Station - Bryan 138kV	250
Rivtrin - Walker 138kV	College Station - Bryan 138kV	255
Cedar - Cincinnati 138kV	Base Case	262
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	266
Cincinnati - Walker 138kV	College Station - Speedway 138kV	268
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	268
Cincinnati - Walker 138kV	Crockett - Grimes 345kV	271
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	272
Cincinnati - Walker 138kV	Grimes - Walden 138kV	274
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	274
Rivtrin - Walker 138kV	College Station - Speedway 138kV	275
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	275
Cincinnati - Walker 138kV	Hartburg - Cottonwood2 500kV	276
Cincinnati - Walker 138kV	Goree - Lewis Creek SES 138kV	277
Rivtrin - Walker 138kV	Crockett - Grimes 345kV	278
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	280
Rivtrin - Walker 138kV	Grimes - Walden 138kV	282
Rivtrin - Walker 138kV	Hartburg - Cottonwood2 500kV	284
Rivtrin - Walker 138kV	Walden - April 138kV	285
Cincinnati - Walker 138kV	Base Case	296
Rivtrin - Walker 138kV	Base Case	304
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	360
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	362
College Station - Bryan 138kV	Bishop - Cedar 138kV	365
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	373
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	377
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	378
Bryan - Pee Dee 138kV	Longmire - Panorama 138kV	381
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	393
College Station - Bryan 138kV	Cincinnati - Walker 138kV	394
College Station - Bryan 138kV	Rivtrin - Walker 138kV	399
Alden - Lewis Creek SES 138kV	Caney Creek - Lewis Creek SES 138kV	422
Bryan - Pee Dee 138kV	Base Case	436
Fort Worth Pipe - Sheawill 138kV	Cleveland - Jacinto 138kV	481
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	488
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	491
Caney Creek - Lewis Creek SES 138kV	Alden - Goslin 138kV	494
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	500
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Roy S. Nelson - Richard 500kV	516
Alden - Lewis Creek SES 138kV	Conair - Caney Creek 138kV	517

Limiting Element	Contingency Element	ATC
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	520
College Station - Grimes 138kV	Bishop - Cedar 138kV	523
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	523
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	528
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	530
College Station - Grimes 138kV	Cincinnati - Walker 138kV	551
College Station - Grimes 138kV	Rivtrin - Walker 138kV	556
Lewis Creek SES - Sheawill 138kV	Lewis Creek 230/138kV transformer	556
Bayou Cove - Richard 138kV ckt 1	Roy S. Nelson - Richard 500kV	558

## APPENDIX A-E: DETAILS OF SCENARIO 3 2012

### AECI

Limiting Element	Contingency Element	ATC
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Lake Charles Bulk - Roy S Nelson 138kV ckt 2	163
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	193
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	197
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	198
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	203
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	203
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	204
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	204
Pee Dee - Bishop 138kV	Huntsville - LINE 558 TAP 138 kV	206
Bishop - Cedar 138kV	College Station - Bryan 138kV	206
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	Navasota - Tubular 138kV	207
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	208
Bishop - Cedar 138kV	College Station - Speedway 138kV	209
Bishop - Cedar 138kV	Navasota - Speedway 138kV	209
Pee Dee - Bishop 138kV	Dobbin - Tubular 138kV	209
Bishop - Cedar 138kV	Huntsville - LINE 558 TAP 138 kV	210
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	210
Bishop - Cedar 138kV	Navasota - Tubular 138kV	211
Bishop - Cedar 138kV	Grimes - Walden 138kV	212

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Bishop - Cedar 138kV	Dobbin - Tubular 138kV	213
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	214
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	216
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	221
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	221
Cedar - Cincinnati 138kV	Huntsville - LINE 558 TAP 138 kV	223
Cedar - Cincinnati 138kV	Navasota - Tubular 138kV	224
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	225
Cedar - Cincinnati 138kV	Dobbin - Tubular 138kV	225
Pee Dee - Bishop 138kV	Base Case	233
Cincinnati - Walker 138kV	College Station - Bryan 138kV	237
Bishop - Cedar 138kV	Base Case	238
Rivtrin - Walker 138kV	College Station - Bryan 138kV	243
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	245
Cedar - Cincinnati 138kV	Base Case	250
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	251
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	253
Cincinnati - Walker 138kV	College Station - Speedway 138kV	253
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	253
Cincinnati - Walker 138kV	Navasota - Tubular 138kV	257
Cincinnati - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	258
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	258
Cincinnati - Walker 138kV	Dobbin - Tubular 138kV	259
Cincinnati - Walker 138kV	Grimes - Walden 138kV	259
Rivtrin - Walker 138kV	College Station - Speedway 138kV	260
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	260
Rivtrin - Walker 138kV	Navasota - Tubular 138kV	264
Rivtrin - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	266
Rivtrin - Walker 138kV	Dobbin - Tubular 138kV	266
Rivtrin - Walker 138kV	Grimes - Walden 138kV	267
Cincinnati - Walker 138kV	Base Case	285
Rivtrin - Walker 138kV	Base Case	292
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	331
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	334
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	343
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	349
College Station - Bryan 138kV	Bishop - Cedar 138kV	352
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	360
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	366
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	371
College Station - Bryan 138kV	Cincinnati - Walker 138kV	381
College Station - Bryan 138kV	Rivtrin - Walker 138kV	386
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	396
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	399
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	403
Bryan - Pee Dee 138kV	Huntsville - LINE 558/91 TAP138 kV	403
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	416

Limiting Element	Contingency Element	ATC
Bryan - Pee Dee 138kV	Base Case	454
Grimes - Mt. Zion 138kV	Pee Dee - Bishop 138kV	508
Grimes - Mt. Zion 138kV	Bishop - Cedar 138kV	514
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	529
Grimes - Mt. Zion 138kV	Cedar - Cincinnati 138kV	531
College Station - Grimes 138kV	Bishop - Cedar 138kV	532
Dobbin - Spring Branch 138kV	Pee Dee - Bishop 138kV	533
Fish Creek - Spring Branch 138kV	Pee Dee - Bishop 138kV	533
Dobbin - Spring Branch 138kV	Bishop - Cedar 138kV	536
Fish Creek - Spring Branch 138kV	Bishop - Cedar 138kV	536
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	539
Dobbin - Spring Branch 138kV	Cedar - Cincinnati 138kV	545
Fish Creek - Spring Branch 138kV	Cedar - Cincinnati 138kV	545
College Station - Grimes 138kV	Cincinnati - Walker 138kV	560
College Station - Grimes 138kV	Rivtrin - Walker 138kV	565
Dobbin - Spring Branch 138kV	Cincinnati - Walker 138kV	568
Fish Creek - Spring Branch 138kV	Cincinnati - Walker 138kV	569
LINE 558/91 TAP - Rivtrin 138 kV	Bryan - Pee Dee 138kV	571
Huntsville - LINE 558/91 TAP 138 kV	Bryan - Pee Dee 138kV	572
Dobbin - Spring Branch 138kV	Rivtrin - Walker 138kV	574
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	574
Fish Creek - Spring Branch 138kV	Rivtrin - Walker 138kV	574

## AEPW

Limiting Element	Contingency Element	ATC
'MANSFLD4 138' TO BUS 'IPAPER 4 138'	Contingency of FlowGate 5029 DOLHILL7 345 TO SW SHV 7 345	0
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Lake Charles Bulk - Roy S Nelson 138kV ckt 2	190
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	196
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	200
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	201
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	203
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	206
Bishop - Cedar 138kV	College Station - Bryan 138kV	206
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	206
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	206
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Pee Dee - Bishop 138kV	Huntsville - LINE 558 TAP 138 kV	209
Pee Dee - Bishop 138kV	Navasota - Tubular 138kV	209
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	210
Bishop - Cedar 138kV	College Station - Speedway 138kV	210
Bishop - Cedar 138kV	Navasota - Speedway 138kV	210
Pee Dee - Bishop 138kV	Dobbin - Tubular 138kV	211
Bishop - Cedar 138kV	Huntsville - LINE 558 TAP 138 kV	213
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	213
Bishop - Cedar 138kV	Navasota - Tubular 138kV	214
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	215
Bishop - Cedar 138kV	Grimes - Walden 138kV	215
Bishop - Cedar 138kV	Dobbin - Tubular 138kV	215
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	219
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	222
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	222
Cedar - Cincinnati 138kV	Navasota - Tubular 138kV	226
Cedar - Cincinnati 138kV	Huntsville - LINE 558 TAP 138 kV	226
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	227
Cedar - Cincinnati 138kV	Dobbin - Tubular 138kV	228
Pee Dee - Bishop 138kV	Base Case	235
Cincinnati - Walker 138kV	College Station - Bryan 138kV	238
Bishop - Cedar 138kV	Base Case	240
Rivtrin - Walker 138kV	College Station - Bryan 138kV	243
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	249
Cedar - Cincinnati 138kV	Base Case	253
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	254
Cincinnati - Walker 138kV	College Station - Speedway 138kV	255
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	255
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	257
Cincinnati - Walker 138kV	Navasota - Tubular 138kV	260
Cincinnati - Walker 138kV	Dobbin - Tubular 138kV	262
Cincinnati - Walker 138kV	Grimes - Walden 138kV	262
Cincinnati - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	262
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	262
Rivtrin - Walker 138kV	College Station - Speedway 138kV	263
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	263
Rivtrin - Walker 138kV	Navasota - Tubular 138kV	267
Rivtrin - Walker 138kV	Dobbin - Tubular 138kV	269
Rivtrin - Walker 138kV	Grimes - Walden 138kV	269
Rivtrin - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	270
Cincinnati - Walker 138kV	Base Case	287
Rivtrin - Walker 138kV	Base Case	295
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	347
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	349
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	350
College Station - Bryan 138kV	Bishop - Cedar 138kV	352
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	359



<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	360
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	379
College Station - Bryan 138kV	Cincinnati - Walker 138kV	381
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	384
College Station - Bryan 138kV	Rivtrin - Walker 138kV	386
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	389
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	391
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	391
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	397
Bryan - Pee Dee 138kV	Huntsville - LINE 558/91 TAP138 kV	397
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	408
Bryan - Pee Dee 138kV	Base Case	448
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	525
College Station - Grimes 138kV	Bishop - Cedar 138kV	527
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	535
College Station - Grimes 138kV	Cincinnati - Walker 138kV	555
LINE 558/91 TAP - Rivtrin 138 kV	Bryan - Pee Dee 138kV	556
Huntsville - LINE 558/91 TAP138 kV	Bryan - Pee Dee 138kV	556
Dobbin - Spring Branch 138kV	Pee Dee - Bishop 138kV	559
Fish Creek - Spring Branch 138kV	Pee Dee - Bishop 138kV	559
College Station - Grimes 138kV	Rivtrin - Walker 138kV	560
Dobbin - Spring Branch 138kV	Bishop - Cedar 138kV	562
Fish Creek - Spring Branch 138kV	Bishop - Cedar 138kV	562
Dobbin - Spring Branch 138kV	Cedar - Cincinnati 138kV	571
Fish Creek - Spring Branch 138kV	Cedar - Cincinnati 138kV	571
Grimes - Mt. Zion 138kV	Pee Dee - Bishop 138kV	574

## **AMRN**

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Lake Charles Bulk - Roy S Nelson 138kV ckt 2	160
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	193
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	197
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	198
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	203
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	203
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	204

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	204
Pee Dee - Bishop 138kV	Huntsville - LINE 558 TAP 138 kV	206
Bishop - Cedar 138kV	College Station - Bryan 138kV	206
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	Navasota - Tubular 138kV	207
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	208
Bishop - Cedar 138kV	College Station - Speedway 138kV	208
Bishop - Cedar 138kV	Navasota - Speedway 138kV	208
Pee Dee - Bishop 138kV	Dobbin - Tubular 138kV	209
Bishop - Cedar 138kV	Huntsville - LINE 558 TAP 138 kV	210
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	210
Bishop - Cedar 138kV	Navasota - Tubular 138kV	211
Bishop - Cedar 138kV	Grimes - Walden 138kV	212
Bishop - Cedar 138kV	Dobbin - Tubular 138kV	213
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	214
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	216
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	220
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	220
Cedar - Cincinnati 138kV	Huntsville - LINE 558 TAP 138 kV	223
Cedar - Cincinnati 138kV	Navasota - Tubular 138kV	223
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	225
Cedar - Cincinnati 138kV	Dobbin - Tubular 138kV	225
Pee Dee - Bishop 138kV	Base Case	233
Cincinnati - Walker 138kV	College Station - Bryan 138kV	237
Bishop - Cedar 138kV	Base Case	238
Rivtrin - Walker 138kV	College Station - Bryan 138kV	243
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	245
Cedar - Cincinnati 138kV	Base Case	250
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	250
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	253
Cincinnati - Walker 138kV	College Station - Speedway 138kV	253
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	253
Cincinnati - Walker 138kV	Navasota - Tubular 138kV	257
Cincinnati - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	258
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	258
Cincinnati - Walker 138kV	Dobbin - Tubular 138kV	258
Cincinnati - Walker 138kV	Grimes - Walden 138kV	259
Rivtrin - Walker 138kV	College Station - Speedway 138kV	260
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	260
Rivtrin - Walker 138kV	Navasota - Tubular 138kV	264
Rivtrin - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	266
Rivtrin - Walker 138kV	Dobbin - Tubular 138kV	266
Rivtrin - Walker 138kV	Grimes - Walden 138kV	266
Cincinnati - Walker 138kV	Base Case	284
Rivtrin - Walker 138kV	Base Case	292
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	330
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	333

Limiting Element	Contingency Element	ATC
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	342
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	349
College Station - Bryan 138kV	Bishop - Cedar 138kV	352
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	360
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	365
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	370
College Station - Bryan 138kV	Cincinnati - Walker 138kV	381
College Station - Bryan 138kV	Rivtrin - Walker 138kV	386
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	397
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	399
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	403
Bryan - Pee Dee 138kV	Huntsville - LINE 558/91 TAP138 kV	403
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	416
Bryan - Pee Dee 138kV	Base Case	455
Grimes - Mt. Zion 138kV	Pee Dee - Bishop 138kV	504
Grimes - Mt. Zion 138kV	Bishop - Cedar 138kV	510
Grimes - Mt. Zion 138kV	Cedar - Cincinnati 138kV	527
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	529
Dobbin - Spring Branch 138kV	Pee Dee - Bishop 138kV	532
Fish Creek - Spring Branch 138kV	Pee Dee - Bishop 138kV	532
College Station - Grimes 138kV	Bishop - Cedar 138kV	532
Dobbin - Spring Branch 138kV	Bishop - Cedar 138kV	535
Fish Creek - Spring Branch 138kV	Bishop - Cedar 138kV	535
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	540
Dobbin - Spring Branch 138kV	Cedar - Cincinnati 138kV	543
Fish Creek - Spring Branch 138kV	Cedar - Cincinnati 138kV	543
College Station - Grimes 138kV	Cincinnati - Walker 138kV	560
College Station - Grimes 138kV	Rivtrin - Walker 138kV	565
Dobbin - Spring Branch 138kV	Cincinnati - Walker 138kV	567
Fish Creek - Spring Branch 138kV	Cincinnati - Walker 138kV	567
Dobbin - Spring Branch 138kV	Rivtrin - Walker 138kV	572
Fish Creek - Spring Branch 138kV	Rivtrin - Walker 138kV	572
LINE 558/91 TAP - Rivtrin 138 kV	Bryan - Pee Dee 138kV	573
Huntsville - LINE 558/91 TAP138 kV	Bryan - Pee Dee 138kV	573
Grimes - Mt. Zion 138kV	Cincinnati - Walker 138kV	574

## CLECO

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
North Crowley - Scott1 138kV	Bonin - Labbe 230kV (LAFA)	0
North Crowley - Scott1 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	0
Judice - Scott1 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	0
North Crowley - Scott1 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Lake Charles Bulk - Roy S Nelson 138kV ckt 2	146

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	191
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	196
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	197
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	201
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	203
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	204
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	204
Pee Dee - Bishop 138kV	Huntsville - LINE 558 TAP 138 kV	204
Bishop - Cedar 138kV	College Station - Bryan 138kV	206
Pee Dee - Bishop 138kV	Navasota - Tubular 138kV	206
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	207
Pee Dee - Bishop 138kV	Dobbin - Tubular 138kV	207
Bishop - Cedar 138kV	College Station - Speedway 138kV	208
Bishop - Cedar 138kV	Navasota - Speedway 138kV	208
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	209
Bishop - Cedar 138kV	Huntsville - LINE 558 TAP 138 kV	209
Bishop - Cedar 138kV	Navasota - Tubular 138kV	210
Bishop - Cedar 138kV	Grimes - Walden 138kV	211
Bishop - Cedar 138kV	Dobbin - Tubular 138kV	212
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	214
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	214
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	220
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	220
Cedar - Cincinnati 138kV	Huntsville - LINE 558 TAP 138 kV	221
Cedar - Cincinnati 138kV	Navasota - Tubular 138kV	222
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	224
Cedar - Cincinnati 138kV	Dobbin - Tubular 138kV	224
Pee Dee - Bishop 138kV	Base Case	232
Bishop - Cedar 138kV	Base Case	237
Cincinnati - Walker 138kV	College Station - Bryan 138kV	237
Rivtrin - Walker 138kV	College Station - Bryan 138kV	242
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	243
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	249
Cedar - Cincinnati 138kV	Base Case	249
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	251
Cincinnati - Walker 138kV	College Station - Speedway 138kV	252
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	252

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Cincinnati - Walker 138kV	Navasota - Tubular 138kV	255
Cincinnati - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	256
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	257
Cincinnati - Walker 138kV	Dobbin - Tubular 138kV	257
Cincinnati - Walker 138kV	Grimes - Walden 138kV	258
Rivtrin - Walker 138kV	College Station - Speedway 138kV	259
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	259
Rivtrin - Walker 138kV	Navasota - Tubular 138kV	263
Rivtrin - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	264
Rivtrin - Walker 138kV	Dobbin - Tubular 138kV	265
Rivtrin - Walker 138kV	Grimes - Walden 138kV	265
Cincinnati - Walker 138kV	Base Case	283
Rivtrin - Walker 138kV	Base Case	291
Semere - Scott2 138kV	Wells 500/230kV transformer	310
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	324
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	327
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	335
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	349
College Station - Bryan 138kV	Bishop - Cedar 138kV	352
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	358
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	360
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	363
Habetz - Richard 138kV	Bonin - Labbe 230kV (LAFA)	375
College Station - Bryan 138kV	Cincinnati - Walker 138kV	381
College Station - Bryan 138kV	Rivtrin - Walker 138kV	386
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	399
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	403
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	406
Bryan - Pee Dee 138kV	Huntsville - LINE 558/91 TAP138 kV	407
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	420
Richard - Scott1 138kV	Bonin - Labbe 230kV (LAFA)	454
Bryan - Pee Dee 138kV	Base Case	458
Greenwood - Humphrey 115kV	Webre - Wells 500kV	478
Grimes - Mt. Zion 138kV	Pee Dee - Bishop 138kV	479
Grimes - Mt. Zion 138kV	Bishop - Cedar 138kV	484
Richard 500/138kV transformer 1	Richard 500/138kV transformer 2	486
Moril - Cecelia 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	495
Grimes - Mt. Zion 138kV	Cedar - Cincinnati 138kV	501
Judice - Meaux 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	505
Dobbin - Spring Branch 138kV	Pee Dee - Bishop 138kV	521
Fish Creek - Spring Branch 138kV	Pee Dee - Bishop 138kV	521
Dobbin - Spring Branch 138kV	Bishop - Cedar 138kV	524
Fish Creek - Spring Branch 138kV	Bishop - Cedar 138kV	524
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	531
Dobbin - Spring Branch 138kV	Cedar - Cincinnati 138kV	533
Fish Creek - Spring Branch 138kV	Cedar - Cincinnati 138kV	533
College Station - Grimes 138kV	Bishop - Cedar 138kV	534

Limiting Element	Contingency Element	ATC
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	542
Grimes - Mt. Zion 138kV	Cincinnati - Walker 138kV	545
North Crowley - Scott1 138kV	Richard - Scott1 138kV	552
Grimes - Mt. Zion 138kV	Rivtrin - Walker 138kV	555
Dobbin - Spring Branch 138kV	Cincinnati - Walker 138kV	555
Fish Creek - Spring Branch 138kV	Cincinnati - Walker 138kV	556
Dobbin - Spring Branch 138kV	Rivtrin - Walker 138kV	561
Fish Creek - Spring Branch 138kV	Rivtrin - Walker 138kV	561
College Station - Grimes 138kV	Cincinnati - Walker 138kV	562
College Station - Grimes 138kV	Rivtrin - Walker 138kV	567
Fish Creek - Longmire 138kV	Pee Dee - Bishop 138kV	572

## EES

Limiting Element	Contingency Element	ATC
Baxter Wilson - Ray Braswell 500kV	Franklin - Grand Gulf 500kV	0
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	166
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Lake Charles Bulk - Roy S Nelson 138kV ckt 2	178
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	191
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	195
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	196
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	198
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	200
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	203
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	203
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	203
Pee Dee - Bishop 138kV	Huntsville - LINE 558 TAP 138 kV	203
Pee Dee - Bishop 138kV	Navasota - Tubular 138kV	205
Bishop - Cedar 138kV	College Station - Bryan 138kV	206
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	206
Pee Dee - Bishop 138kV	Dobbin - Tubular 138kV	207
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Bishop - Cedar 138kV	College Station - Speedway 138kV	207
Bishop - Cedar 138kV	Navasota - Speedway 138kV	207
Bishop - Cedar 138kV	Huntsville - LINE 558 TAP 138 kV	208
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	208
Bishop - Cedar 138kV	Navasota - Tubular 138kV	209

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Bishop - Cedar 138kV	Grimes - Walden 138kV	211
Bishop - Cedar 138kV	Dobbin - Tubular 138kV	211
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	213
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	215
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	219
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	219
Cedar - Cincinnati 138kV	Huntsville - LINE 558 TAP 138 kV	221
Cedar - Cincinnati 138kV	Navasota - Tubular 138kV	222
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	223
Cedar - Cincinnati 138kV	Dobbin - Tubular 138kV	223
Pee Dee - Bishop 138kV	Base Case	232
Bishop - Cedar 138kV	Base Case	236
Cincinnati - Walker 138kV	College Station - Bryan 138kV	238
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	243
Rivtrin - Walker 138kV	College Station - Bryan 138kV	243
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	248
Cedar - Cincinnati 138kV	Base Case	249
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	250
Cincinnati - Walker 138kV	College Station - Speedway 138kV	252
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	252
Cincinnati - Walker 138kV	Navasota - Tubular 138kV	255
Cincinnati - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	255
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	256
Cincinnati - Walker 138kV	Dobbin - Tubular 138kV	257
Cincinnati - Walker 138kV	Grimes - Walden 138kV	257
Rivtrin - Walker 138kV	College Station - Speedway 138kV	259
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	259
Rivtrin - Walker 138kV	Navasota - Tubular 138kV	263
Rivtrin - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	263
Rivtrin - Walker 138kV	Dobbin - Tubular 138kV	264
Rivtrin - Walker 138kV	Grimes - Walden 138kV	265
Cincinnati - Walker 138kV	Base Case	283
Rivtrin - Walker 138kV	Base Case	291
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	316
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	319
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	328
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	350
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	350
College Station - Bryan 138kV	Bishop - Cedar 138kV	353
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	355
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	361
College Station - Bryan 138kV	Cincinnati - Walker 138kV	383
College Station - Bryan 138kV	Rivtrin - Walker 138kV	387
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	402
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	406
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	409
Bryan - Pee Dee 138kV	Huntsville - LINE 558/91 TAP138 kV	409

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Bryan - Pee Dee 138kV	Dolet Hills - S.W. Shreevport 345kV (CLECO)	423
Grimes - Mt. Zion 138kV	Pee Dee - Bishop 138kV	452
Grimes - Mt. Zion 138kV	Bishop - Cedar 138kV	458
Bryan - Pee Dee 138kV	Base Case	460
Grimes - Mt. Zion 138kV	Cedar - Cincinnati 138kV	474
Dobbin - Spring Branch 138kV	Pee Dee - Bishop 138kV	513
Fish Creek - Spring Branch 138kV	Pee Dee - Bishop 138kV	513
Dobbin - Spring Branch 138kV	Bishop - Cedar 138kV	516
Fish Creek - Spring Branch 138kV	Bishop - Cedar 138kV	516
Grimes - Mt. Zion 138kV	Cincinnati - Walker 138kV	517
Dobbin - Spring Branch 138kV	Cedar - Cincinnati 138kV	524
Fish Creek - Spring Branch 138kV	Cedar - Cincinnati 138kV	525
Grimes - Mt. Zion 138kV	Rivtrin - Walker 138kV	526
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	536
College Station - Grimes 138kV	Bishop - Cedar 138kV	539
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	547
LINE 558 TAP - MT. Zion 138 kV	Pee Dee - Bishop 138kV	547
Dobbin - Spring Branch 138kV	Cincinnati - Walker 138kV	547
Fish Creek - Spring Branch 138kV	Cincinnati - Walker 138kV	548
LINE 558 TAP - MT. Zion 138 kV	Bishop - Cedar 138kV	552
Dobbin - Spring Branch 138kV	Rivtrin - Walker 138kV	553
Fish Creek - Spring Branch 138kV	Rivtrin - Walker 138kV	553
Fish Creek - Longmire 138kV	Pee Dee - Bishop 138kV	564
Fish Creek - Longmire 138kV	Bishop - Cedar 138kV	567
LINE 558 TAP - MT. Zion 138 kV	Cedar - Cincinnati 138kV	568
College Station - Grimes 138kV	Cincinnati - Walker 138kV	568
College Station - Grimes 138kV	Rivtrin - Walker 138kV	573

## EMDE

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Bull Shoals - Bull Shoals Dam SPA 161kV	St. Joe - Hilltop 161kV	0
Bull Shoals - Bull Shoals Dam SPA 161kV	Everton - St. Joe 161kV	0
Bull Shoals - Bull Shoals Dam SPA 161kV	Harrison East - Everton 161kV	0
Melborne - Sage 161kV	Dell - Independence SES 500kV	0
Melborne - Sage 161kV	ANO - Fort Smith 500kV	0
St. Joe - Hilltop 161kV	Bull Shoals - Bull Shoals Dam SPA 161kV	0
Melborne - Sage 161kV	Newport - Newport Industrial 161kV	0
St. Joe - Hilltop 161kV	Bull Shoals - Flippin 161kV	0
Melborne - Sage 161kV	Newport AB - Newport Industrial 161kV	0
Melborne - Sage 161kV	Cash - Newport AB 161kV	0
Melborne - Sage 161kV	Cash - Jonesboro 161kV	0
Melborne - Sage 161kV	Sansouci - Shelby (TVA) 500kV	0
Melborne - Sage 161kV	Sage - Guion 161kV	0
Melborne - Sage 161kV	Newport - Swifton 161kV	0



Limiting Element	Contingency Element	ATC
St. Joe - Hilltop 161kV	Flippin - Summit 161kV	0
Harrison East - Everton 161kV	Bull Shoals - Bull Shoals Dam SPA 161kV	0
Melborne - Sage 161kV	Mountain View - Guion 161kV	0
Harrison East - Everton 161kV	Bull Shoals - Flippin 161kV	16
Calico Rock - Melborne 161kV	Dell - Independence SES 500kV	87
Calico Rock - Melborne 161kV	ANO - Fort Smith 500kV	93
St. Joe - Hilltop 161kV	Harrison East - Summit 161kV	94
Harrison East - Everton 161kV	Flippin - Summit 161kV	124
Harrison East - Summit 161kV	St. Joe - Hilltop 161kV	137
Calico Rock - Norfolk 161kV	Dell - Independence SES 500kV	158
Calico Rock - Norfolk 161kV	ANO - Fort Smith 500kV	158
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Lake Charles Bulk - Roy S Nelson 138kV ckt 2	168
Harrison East - Summit 161kV	Everton - St. Joe 161kV	170
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Calico Rock - Melborne 161kV	Newport - Newport Industrial 161kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Calico Rock - Melborne 161kV	Newport AB - Newport Industrial 161kV	192
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	193
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	198
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	199
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	203
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	203
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	205
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	205
Bishop - Cedar 138kV	College Station - Bryan 138kV	206
Pee Dee - Bishop 138kV	Huntsville - LINE 558 TAP 138 kV	206
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	Navasota - Tubular 138kV	207
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	208
Bishop - Cedar 138kV	College Station - Speedway 138kV	209
Bishop - Cedar 138kV	Navasota - Speedway 138kV	209
Pee Dee - Bishop 138kV	Dobbin - Tubular 138kV	209
Bishop - Cedar 138kV	Huntsville - LINE 558 TAP 138 kV	211
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	211
Bishop - Cedar 138kV	Navasota - Tubular 138kV	212
Bishop - Cedar 138kV	Grimes - Walden 138kV	213
Bishop - Cedar 138kV	Dobbin - Tubular 138kV	213
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	214
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	216
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	221

Limiting Element	Contingency Element	ATC
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	221
Cedar - Cincinnati 138kV	Huntsville - LINE 558 TAP 138 kV	224
Cedar - Cincinnati 138kV	Navasota - Tubular 138kV	224
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	225
Calico Rock - Melborne 161kV	Cash - Newport AB 161kV	225
Cedar - Cincinnati 138kV	Dobbin - Tubular 138kV	226
Harrison East - Summit 161kV	Harrison East - Everton 161kV	234
Pee Dee - Bishop 138kV	Base Case	234
Cincinnati - Walker 138kV	College Station - Bryan 138kV	237
Bishop - Cedar 138kV	Base Case	238
Rivtrin - Walker 138kV	College Station - Bryan 138kV	243
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	246
Calico Rock - Norfolk 161kV	Newport - Newport Industrial 161kV	247
Cedar - Cincinnati 138kV	Base Case	251
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	251
Calico Rock - Melborne 161kV	Cash - Jonesboro 161kV	253
St. Joe - Hilltop 161kV	Eureka Springs - Osage Springs 161kV	253
Harrison East - Everton 161kV	Harrison East - Summit 161kV	253
Cincinnati - Walker 138kV	College Station - Speedway 138kV	253
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	253
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	254
Cincinnati - Walker 138kV	Navasota - Tubular 138kV	257
Cincinnati - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	259
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	259
Pleasant Hill 500/161kV transformer	ANO 500/115kV transformer	259
Cincinnati - Walker 138kV	Dobbin - Tubular 138kV	259
Cincinnati - Walker 138kV	Grimes - Walden 138kV	259
Rivtrin - Walker 138kV	College Station - Speedway 138kV	261
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	261
Rivtrin - Walker 138kV	Navasota - Tubular 138kV	265
St. Joe - Hilltop 161kV	ANO - Fort Smith 500kV	265
Calico Rock - Norfolk 161kV	Newport AB - Newport Industrial 161kV	266
Rivtrin - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	266
Rivtrin - Walker 138kV	Dobbin - Tubular 138kV	267
Rivtrin - Walker 138kV	Grimes - Walden 138kV	267
Calico Rock - Melborne 161kV	Newport - Swifton 161kV	277
Calico Rock - Melborne 161kV	Sansouci - Shelby (TVA) 500kV	283
Cincinnati - Walker 138kV	Base Case	285
Calico Rock - Melborne 161kV	Sage - Guion 161kV	290
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	290
Rivtrin - Walker 138kV	Base Case	293
Bull Shoals - Bull Shoals Dam SPA 161kV	Bull Shoals - Lead Hills 161kV	299
Calico Rock - Norfolk 161kV	Cash - Newport AB 161kV	299
Calico Rock - Melborne 161kV	Mountain View - Guion 161kV	308
Calico Rock - Norfolk 161kV	Cash - Jonesboro 161kV	326
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	334
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	337

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	345
Calico Rock - Norfolk 161kV	Newport - Swifton 161kV	349
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	349
College Station - Bryan 138kV	Bishop - Cedar 138kV	352
Bull Shoals - Bull Shoals Dam SPA 161kV	Clevcov - Lead HL 161kV	357
Calico Rock - Norfolk 161kV	Sansouci - Shelby (TVA) 500kV	359
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	360
Calico Rock - Norfolk 161kV	Sage - Guion 161kV	365
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	369
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	374
Calico Rock - Norfolk 161kV	Hoxies AECC - Swifton 161 kV	380
College Station - Bryan 138kV	Cincinnati - Walker 138kV	381
College Station - Bryan 138kV	Rivtrin - Walker 138kV	386
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	396
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	397
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	402
Bryan - Pee Dee 138kV	Huntsville - LINE 558/91 TAP138 kV	402
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	414
Harrison East - Everton 161kV	ANO - Fort Smith 500kV	434
Bryan - Pee Dee 138kV	Base Case	453
Harrison East - Everton 161kV	Eureka Springs - Osage Springs 161kV	484
Russellville South - Dardanelle Dam 161kV	ANO - Fort Smith 500kV	493
Grimes - Mt. Zion 138kV	Pee Dee - Bishop 138kV	518
Grimes - Mt. Zion 138kV	Bishop - Cedar 138kV	524
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	528
College Station - Grimes 138kV	Bishop - Cedar 138kV	531
Dobbin - Spring Branch 138kV	Pee Dee - Bishop 138kV	538
Fish Creek - Spring Branch 138kV	Pee Dee - Bishop 138kV	538
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	538
Melborne - Sage 161kV	Base Case	539
Dobbin - Spring Branch 138kV	Bishop - Cedar 138kV	540
Fish Creek - Spring Branch 138kV	Bishop - Cedar 138kV	541
Grimes - Mt. Zion 138kV	Cedar - Cincinnati 138kV	542
Dobbin - Spring Branch 138kV	Cedar - Cincinnati 138kV	549
Fish Creek - Spring Branch 138kV	Cedar - Cincinnati 138kV	549
College Station - Grimes 138kV	Cincinnati - Walker 138kV	559
College Station - Grimes 138kV	Rivtrin - Walker 138kV	564
LINE 558/91 TAP - Rivtrin 138 kV	Bryan - Pee Dee 138kV	569
Huntsville - LINE 558/91 TAP138 kV	Bryan - Pee Dee 138kV	569
Dobbin - Spring Branch 138kV	Cincinnati - Walker 138kV	573
Fish Creek - Spring Branch 138kV	Cincinnati - Walker 138kV	573

# Lafa

Limiting Element	Contingency Element	ATC
Baxter Wilson - Ray Braswell 500kV	Franklin - Grand Gulf 500kV	0
Semere - Scott2 138kV	Bonin - Labbe 230kV (Lafa)	0
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Semere - Scott2 138kV	Wells (CLECO) - Point Mouton (Lafa) 230kV	0
North Crowley - Scott1 138kV	Bonin - Labbe 230kV (Lafa)	0
Semere - Scott2 138kV	Point Des Mouton (Lafa) - Labbe (Lafa) 230kV	0
Richard 500/138kV transformer 1	Richard 500/138kV transformer 2	0
Colonial Academy - Richard 138kV	Bonin - Labbe 230kV (Lafa)	0
Scott1 - Bonin 138kV	Bonin - Labbe 230kV (Lafa)	0
North Crowley - Scott1 138kV	Wells (CLECO) - Point Mouton (Lafa) 230kV	0
North Crowley - Scott1 138kV	Point Des Mouton (Lafa) - Labbe (Lafa) 230kV	0
Semere - Scott2 138kV	Habetz - Richard 138kV	7
Semere - Scott2 138kV	Greenwood - Terrebone 115kV	9
Scott1 - Bonin 138kV	Wells (CLECO) - Point Mouton (Lafa) 230kV	14
Colonial Academy - Richard 138kV	Wells (CLECO) - Point Mouton (Lafa) 230kV	14
Scott1 - Bonin 138kV	Point Des Mouton (Lafa) - Labbe (Lafa) 230kV	46
Colonial Academy - Richard 138kV	Point Des Mouton (Lafa) - Labbe (Lafa) 230kV	47
Acadia - Colonial Academy 138kV	Bonin - Labbe 230kV (Lafa)	82
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Lake Charles Bulk - Roy S Nelson 138kV ckt 2	85
Habetz - Richard 138kV	Bonin - Labbe 230kV (Lafa)	95
Acadia - Colonial Academy 138kV	Wells (CLECO) - Point Mouton (Lafa) 230kV	106
Habetz - Richard 138kV	Wells (CLECO) - Point Mouton (Lafa) 230kV	116
Richard - Scott1 138kV	Bonin - Labbe 230kV (Lafa)	121
Semere - Scott2 138kV	Wells 500/230kV transformer	130
Richard - Scott1 138kV	Wells (CLECO) - Point Mouton (Lafa) 230kV	130
Acadia - Colonial Academy 138kV	Point Des Mouton (Lafa) - Labbe (Lafa) 230kV	139
Habetz - Richard 138kV	Point Des Mouton (Lafa) - Labbe (Lafa) 230kV	152
Richard - Scott1 138kV	Point Des Mouton (Lafa) - Labbe (Lafa) 230kV	162
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Semere - Scott2 138kV	Bonin - Cecelia 138kV	173
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
North Crowley - Scott1 138kV	Habetz - Richard 138kV	173
Acadia GSU - Scanlan 138kV	Wells (CLECO) - Point Mouton (Lafa) 230kV	175
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	190
Acadia GSU - Scanlan 138kV	Bonin - Labbe 230kV (Lafa)	194
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	194
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	195
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	199
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Pee Dee - Bishop 138kV	Huntsville - LINE 558 TAP 138 kV	202
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	202
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	202
Champagne - East Opelousas 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	202
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	203
Pee Dee - Bishop 138kV	Navasota - Tubular 138kV	204
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	205
Bishop - Cedar 138kV	College Station - Bryan 138kV	206
Pee Dee - Bishop 138kV	Dobbin - Tubular 138kV	206
Bishop - Cedar 138kV	College Station - Speedway 138kV	206
Bishop - Cedar 138kV	Navasota - Speedway 138kV	206
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	207
Bishop - Cedar 138kV	Huntsville - LINE 558 TAP 138 kV	207
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Acadia GSU - Scanlan 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	208
Bishop - Cedar 138kV	Navasota - Tubular 138kV	208
Bishop - Cedar 138kV	Grimes - Walden 138kV	210
Bishop - Cedar 138kV	Dobbin - Tubular 138kV	210
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	212
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	214
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	218
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	218
Cedar - Cincinnati 138kV	Huntsville - LINE 558 TAP 138 kV	219
Cedar - Cincinnati 138kV	Navasota - Tubular 138kV	220
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	222
Cedar - Cincinnati 138kV	Dobbin - Tubular 138kV	222
Pee Dee - Bishop 138kV	Base Case	231
North Crowley - Richard 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	231
Bishop - Cedar 138kV	Base Case	235
Colonial Academy - Richard 138kV	Habetz - Richard 138kV	235
Cincinnati - Walker 138kV	College Station - Bryan 138kV	237
Champagne - East Opelousas 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	238
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	241
Rivtrin - Walker 138kV	College Station - Bryan 138kV	242
Champagne - East Opelousas 138kV	Bonin - Labbe 230kV (LAFA)	243
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	246
Cedar - Cincinnati 138kV	Base Case	248
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	248
Cincinnati - Walker 138kV	College Station - Speedway 138kV	250
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	250
Cincinnati - Walker 138kV	Navasota - Tubular 138kV	253
Cincinnati - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	253
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	254
Cincinnati - Walker 138kV	Dobbin - Tubular 138kV	255
Cincinnati - Walker 138kV	Grimes - Walden 138kV	256
Rivtrin - Walker 138kV	College Station - Speedway 138kV	258

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	258
Rivtrin - Walker 138kV	Navasota - Tubular 138kV	261
Rivtrin - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	261
North Crowley - Scott1 138kV	Wells 500/230kV transformer	262
Rivtrin - Walker 138kV	Dobbin - Tubular 138kV	262
Rivtrin - Walker 138kV	Grimes - Walden 138kV	263
North Crowley - Richard 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	263
Colonial Academy - Richard 138kV	Greenwood - Terrebone 115kV	265
North Crowley - Scott1 138kV	Greenwood - Terrebone 115kV	268
Greenwood - Humphrey 115kV	Webre - Wells 500kV	281
North Crowley - Richard 138kV	Bonin - Labbe 230kV (LAFA)	282
Cincinnati - Walker 138kV	Base Case	282
Rivtrin - Walker 138kV	Base Case	289
Cecelia - Semere 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	305
Champagne - East Opelousas 138kV	Webre - Wells 500kV	309
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	313
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	316
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	324
Cecelia - Semere 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	338
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	346
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	350
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	351
College Station - Bryan 138kV	Bishop - Cedar 138kV	352
Acadia - Colonial Academy 138kV	Habetz - Richard 138kV	352
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	360
Habetz - Richard 138kV	Acadian - Bonin 230kV (LAFA)	370
Colonial Academy - Richard 138kV	Wells 500/230kV transformer	374
Gibson - Humphrey 115kV	Webre - Wells 500kV	379
College Station - Bryan 138kV	Cincinnati - Walker 138kV	381
College Station - Bryan 138kV	Rivtrin - Walker 138kV	386
Richard - Scott1 138kV	Habetz - Richard 138kV	387
North Crowley - Scott1 138kV	Bonin 230/138kV transformer (LAFA)	388
Scott1 - Bonin 138kV	Habetz - Richard 138kV	393
Acadia - Colonial Academy 138kV	Greenwood - Terrebone 115kV	396
Cecelia - Semere 138kV	Bonin - Labbe 230kV (LAFA)	403
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	403
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	409
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	411
Bryan - Pee Dee 138kV	Huntsville - LINE 558/91 TAP138 kV	411
Bryan - Pee Dee 138kV	Dolet Hills - S.W. Shreevport 345kV (CLECO)	425
Scott1 - Bonin 138kV	Wells 500/230kV transformer	428
Scott1 - Bonin 138kV	Bonin 230/138kV transformer (LAFA)	437
Greenwood - Terrebone 115kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	438
Acadia GSU - Scanlan 138kV	Habetz - Richard 138kV	440
Grimes - Mt. Zion 138kV	Pee Dee - Bishop 138kV	442
Grimes - Mt. Zion 138kV	Bishop - Cedar 138kV	448
Richard - Scott1 138kV	North Crowley - Richard 138kV	453

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Bryan - Pee Dee 138kV	Base Case	462
Grimes - Mt. Zion 138kV	Cedar - Cincinnati 138kV	463
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Roy S. Nelson - Richard 500kV	469
Greenwood - Terrebone 115kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	472
Scanlan - Scott2 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	476
Richard 500/138kV transformer 2	Wells (CLECO) - Point Mouton (LAFA) 230kV	478
Habetz - Richard 138kV	Flander - Acadian 230kV (LAFA)	483
Richard - Scott1 138kV	Wells 500/230kV transformer	484
Richard - Scott1 138kV	North Crowley - Scott1 138kV	486
Greenwood - Terrebone 115kV	Richard - Wells 500kV	493
Acadia GSU - Scanlan 138kV	Greenwood - Terrebone 115kV	494
Acadia - Colonial Academy 138kV	Wells 500/230kV transformer	499
Dobbin - Spring Branch 138kV	Pee Dee - Bishop 138kV	504
Fish Creek - Spring Branch 138kV	Pee Dee - Bishop 138kV	504
Grimes - Mt. Zion 138kV	Cincinnati - Walker 138kV	504
Dobbin - Spring Branch 138kV	Bishop - Cedar 138kV	506
Fish Creek - Spring Branch 138kV	Bishop - Cedar 138kV	507
Scanlan - Scott2 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	508
Richard - Scott1 138kV	Greenwood - Terrebone 115kV	512
Grimes - Mt. Zion 138kV	Rivtrin - Walker 138kV	513
Richard 500/138kV transformer 2	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	514
Dobbin - Spring Branch 138kV	Cedar - Cincinnati 138kV	515
Fish Creek - Spring Branch 138kV	Cedar - Cincinnati 138kV	515
North Crowley - Richard 138kV	Habetz - Richard 138kV	516
Scott1 - Bonin 138kV	Greenwood - Terrebone 115kV	531
LINE 558 TAP - MT. Zion 138 kV	Pee Dee - Bishop 138kV	533
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	535
Scott1 - Bonin 138kV	Judice - Scott1 138kV	535
Dobbin - Spring Branch 138kV	Cincinnati - Walker 138kV	537
Fish Creek - Spring Branch 138kV	Cincinnati - Walker 138kV	537
College Station - Grimes 138kV	Bishop - Cedar 138kV	537
LINE 558 TAP - MT. Zion 138 kV	Bishop - Cedar 138kV	538
Dobbin - Spring Branch 138kV	Rivtrin - Walker 138kV	542
Fish Creek - Spring Branch 138kV	Rivtrin - Walker 138kV	542
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	545
Fish Creek - Longmire 138kV	Pee Dee - Bishop 138kV	553
LINE 558 TAP - MT. Zion 138 kV	Cedar - Cincinnati 138kV	553
Fish Creek - Longmire 138kV	Bishop - Cedar 138kV	556
Fish Creek - Longmire 138kV	Cedar - Cincinnati 138kV	564
College Station - Grimes 138kV	Cincinnati - Walker 138kV	566
Scott1 - Bonin 138kV	Flander - Beadle 230kV (LAFA)	571
College Station - Grimes 138kV	Rivtrin - Walker 138kV	571

# LAGN

Limiting Element	Contingency Element	ATC
Baxter Wilson - Ray Braswell 500kV	Franklin - Grand Gulf 500kV	0
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Lake Charles Bulk - Roy S Nelson 138kV ckt 2	146
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	189
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	194
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	195
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	199
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Pee Dee - Bishop 138kV	Huntsville - LINE 558 TAP 138 kV	202
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	202
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	202
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	203
Pee Dee - Bishop 138kV	Navasota - Tubular 138kV	204
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	205
Bishop - Cedar 138kV	College Station - Bryan 138kV	206
Pee Dee - Bishop 138kV	Dobbin - Tubular 138kV	206
Bishop - Cedar 138kV	College Station - Speedway 138kV	206
Bishop - Cedar 138kV	Navasota - Speedway 138kV	206
Bishop - Cedar 138kV	Huntsville - LINE 558 TAP 138 kV	206
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	206
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Bishop - Cedar 138kV	Navasota - Tubular 138kV	208
Bishop - Cedar 138kV	Grimes - Walden 138kV	210
Bishop - Cedar 138kV	Dobbin - Tubular 138kV	210
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	212
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	214
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	218
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	218
Cedar - Cincinnati 138kV	Huntsville - LINE 558 TAP 138 kV	219
Cedar - Cincinnati 138kV	Navasota - Tubular 138kV	220
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	222
Cedar - Cincinnati 138kV	Dobbin - Tubular 138kV	222
Pee Dee - Bishop 138kV	Base Case	231
Bishop - Cedar 138kV	Base Case	235
Cincinnati - Walker 138kV	College Station - Bryan 138kV	237
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	241
Rivtrin - Walker 138kV	College Station - Bryan 138kV	242



<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	246
Cedar - Cincinnati 138kV	Base Case	248
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	248
Cincinnati - Walker 138kV	College Station - Speedway 138kV	250
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	250
Cincinnati - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	253
Cincinnati - Walker 138kV	Navasota - Tubular 138kV	253
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	254
Cincinnati - Walker 138kV	Dobbin - Tubular 138kV	255
Cincinnati - Walker 138kV	Grimes - Walden 138kV	256
Rivtrin - Walker 138kV	College Station - Speedway 138kV	257
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	257
Rivtrin - Walker 138kV	Navasota - Tubular 138kV	261
Rivtrin - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	261
Rivtrin - Walker 138kV	Dobbin - Tubular 138kV	262
Rivtrin - Walker 138kV	Grimes - Walden 138kV	263
Cincinnati - Walker 138kV	Base Case	282
Rivtrin - Walker 138kV	Base Case	289
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	312
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	315
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	323
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	345
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	350
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	350
College Station - Bryan 138kV	Bishop - Cedar 138kV	352
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	360
College Station - Bryan 138kV	Cincinnati - Walker 138kV	381
College Station - Bryan 138kV	Rivtrin - Walker 138kV	386
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	404
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	409
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	411
Bryan - Pee Dee 138kV	Huntsville - LINE 558/91 TAP138 kV	411
Bryan - Pee Dee 138kV	Dolet Hills - S.W. Shreevport 345kV (CLECO)	425
Grimes - Mt. Zion 138kV	Pee Dee - Bishop 138kV	441
Grimes - Mt. Zion 138kV	Bishop - Cedar 138kV	446
Grimes - Mt. Zion 138kV	Cedar - Cincinnati 138kV	461
Bryan - Pee Dee 138kV	Base Case	462
Grimes - Mt. Zion 138kV	Cincinnati - Walker 138kV	502
Dobbin - Spring Branch 138kV	Pee Dee - Bishop 138kV	503
Fish Creek - Spring Branch 138kV	Pee Dee - Bishop 138kV	503
Dobbin - Spring Branch 138kV	Bishop - Cedar 138kV	506
Fish Creek - Spring Branch 138kV	Bishop - Cedar 138kV	506
Grimes - Mt. Zion 138kV	Rivtrin - Walker 138kV	512
Dobbin - Spring Branch 138kV	Cedar - Cincinnati 138kV	514
Fish Creek - Spring Branch 138kV	Cedar - Cincinnati 138kV	514
LINE 558 TAP - MT. Zion 138 kV	Pee Dee - Bishop 138kV	531
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	535

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Dobbin - Spring Branch 138kV	Cincinnati - Walker 138kV	536
Fish Creek - Spring Branch 138kV	Cincinnati - Walker 138kV	536
LINE 558 TAP - MT. Zion 138 kV	Bishop - Cedar 138kV	537
College Station - Grimes 138kV	Bishop - Cedar 138kV	537
Dobbin - Spring Branch 138kV	Rivtrin - Walker 138kV	541
Fish Creek - Spring Branch 138kV	Rivtrin - Walker 138kV	541
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	545
LINE 558 TAP - MT. Zion 138 kV	Cedar - Cincinnati 138kV	552
Fish Creek - Longmire 138kV	Pee Dee - Bishop 138kV	552
Fish Creek - Longmire 138kV	Bishop - Cedar 138kV	555
Fish Creek - Longmire 138kV	Cedar - Cincinnati 138kV	563
College Station - Grimes 138kV	Cincinnati - Walker 138kV	566
College Station - Grimes 138kV	Rivtrin - Walker 138kV	571

## LEPA

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Baxter Wilson - Ray Braswell 500kV	Franklin - Grand Gulf 500kV	0
Semere - Scott2 138kV	Bonin - Labbe 230kV (LAFA)	0
Scott1 - Bonin 138kV	Bonin - Labbe 230kV (LAFA)	0
Semere - Scott2 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	0
Bonin - Cecelia 138kV	Colonial Academy - Richard 138kV	0
Semere - Scott2 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
North Crowley - Scott1 138kV	Bonin - Labbe 230kV (LAFA)	0
Bonin - Cecelia 138kV	Acadia - Colonial Academy 138kV	0
Bonin - Cecelia 138kV	Acadia GSU - Scanlan 138kV	0
North Crowley - Scott1 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	0
Colonial Academy - Richard 138kV	Bonin - Labbe 230kV (LAFA)	0
Judice - Scott1 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	0
North Crowley - Scott1 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
Colonial Academy - Richard 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	43
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Lake Charles Bulk - Roy S Nelson 138kV ckt 2	104
Raceland - Coteau 115kV	Terrebone 230/115kV transformer	136
Colonial Academy - Richard 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	141
Acadia - Colonial Academy 138kV	Bonin - Labbe 230kV (LAFA)	154
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Semere - Scott2 138kV	Bonin - Cecelia 138kV	169
Scott1 - Bonin 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	169
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Greenwood - Terrebone 115kV	Bayou Sales - WaxLake 138kV (CLECO)	187
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	190

Limiting Element	Contingency Element	ATC
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	195
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	196
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	200
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	203
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	203
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	203
Pee Dee - Bishop 138kV	Huntsville - LINE 558 TAP 138 kV	203
Pee Dee - Bishop 138kV	Navasota - Tubular 138kV	205
Bishop - Cedar 138kV	College Station - Bryan 138kV	206
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	206
Pee Dee - Bishop 138kV	Dobbin - Tubular 138kV	206
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Bishop - Cedar 138kV	College Station - Speedway 138kV	207
Bishop - Cedar 138kV	Navasota - Speedway 138kV	207
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	207
Bishop - Cedar 138kV	Huntsville - LINE 558 TAP 138 kV	207
Bishop - Cedar 138kV	Navasota - Tubular 138kV	209
Bishop - Cedar 138kV	Grimes - Walden 138kV	210
Bishop - Cedar 138kV	Dobbin - Tubular 138kV	211
Bonin - Cecelia 138kV	Scanlan - Scott2 138kV	211
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	213
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	214
Vacherie - Waterford 230kV	Raceland - Waterford 230kV	215
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	219
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	219
Bonin - Cecelia 138kV	Semere - Scott2 138kV	220
Cedar - Cincinnati 138kV	Huntsville - LINE 558 TAP 138 kV	220
Cedar - Cincinnati 138kV	Navasota - Tubular 138kV	221
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	223
Habetz - Richard 138kV	Bonin - Labbe 230kV (LAFA)	223
Cedar - Cincinnati 138kV	Dobbin - Tubular 138kV	223
Bonin - Cecelia 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	225
Pee Dee - Bishop 138kV	Base Case	232
Bishop - Cedar 138kV	Base Case	236
Greenwood - Terrebone 115kV	Bayou Sales - Teche 138kV (CLECO)	236
Cincinnati - Walker 138kV	College Station - Bryan 138kV	237
Chauvin - Valentine 115kV	Coteau - Houma 115kV	238
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	242
Rivtrin - Walker 138kV	College Station - Bryan 138kV	242
Judice - Scott1 138kV	Greenwood - Terrebone 115kV	244
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	247
Cedar - Cincinnati 138kV	Base Case	248
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	249
Terrebone 230/115kV transformer	Raceland - Coteau 115kV	249

Limiting Element	Contingency Element	ATC
Chauvin - Ashland 115kV	Coteau - Houma 115kV	250
Cincinnati - Walker 138kV	College Station - Speedway 138kV	251
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	251
Judice - Meaux 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	253
Cincinnati - Walker 138kV	Navasota - Tubular 138kV	254
Cincinnati - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	254
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	255
Cincinnati - Walker 138kV	Dobbin - Tubular 138kV	256
Cincinnati - Walker 138kV	Grimes - Walden 138kV	256
Rivtrin - Walker 138kV	College Station - Speedway 138kV	258
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	258
Moril - Cecelia 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	258
Rivtrin - Walker 138kV	Navasota - Tubular 138kV	261
Rivtrin - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	262
Rivtrin - Walker 138kV	Dobbin - Tubular 138kV	263
Rivtrin - Walker 138kV	Grimes - Walden 138kV	264
Greenwood - Terrebone 115kV	ELPTAP - Wax Lake 138kV (CLECO)	269
Semere - Scott2 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	282
Cincinnati - Walker 138kV	Base Case	282
Rivtrin - Walker 138kV	Base Case	290
Richard - Scott1 138kV	Bonin - Labbe 230kV (LAFA)	305
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	316
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	319
Acadia - Colonial Academy 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	321
Ashland - Houma 115kV	Coteau - Houma 115kV	327
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	327
Greenwood - Terrebone 115kV	Bayou Vista - ELPTAP 138kV (CLECO)	330
Coteau - Houma 115kV	Chauvin - Valentine 115kV	338
Greenwood - Humphrey 115kV	Bayou Sales - WaxLake 138kV (CLECO)	341
Terrebone 230/115kV transformer	Bayou Sales - WaxLake 138kV (CLECO)	341
Judice - Scott1 138kV	Acadian - Bonin 230kV (LAFA)	346
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	350
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	350
College Station - Bryan 138kV	Bishop - Cedar 138kV	352
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	355
Semere - Scott2 138kV	Wells 500/230kV transformer	359
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	360
Terrebone 230/115kV transformer	Bayou Sales - Teche 138kV (CLECO)	361
Acadia GSU - Scanlan 138kV	Bonin - Labbe 230kV (LAFA)	362
Gibson - Humphrey 115kV	Bayou Sales - WaxLake 138kV (CLECO)	365
Coteau - Houma 115kV	Chauvin - Ashland 115kV	366
Terrebone 230/115kV transformer	ELPTAP - Wax Lake 138kV (CLECO)	375
Raceland - Coteau 115kV	Terrebone - Coteau 115kV	376
College Station - Bryan 138kV	Cincinnati - Walker 138kV	381
Houma - City of Houma 115kV	Air Liquide - Shenango 230kV	382
Houma - City of Houma 115kV	Bayou Cove - Richard 138kV ckt 1	382
Houma - City of Houma 115kV	Belle Point - Lutcher 115kV	382

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Houma - City of Houma 115kV	Coly - Vignes 230kV	382
Houma - City of Houma 115kV	KUHNRD - Ebony South 161kV	382
Houma - City of Houma 115kV	Porter - New Caney 138kV	382
Raceland 230/115kV transformer	Terrebone 230/115kV transformer	384
College Station - Bryan 138kV	Rivtrin - Walker 138kV	386
Terrebone 230/115kV transformer	Raceland 230/115kV transformer	387
Terrebone 230/115kV transformer	Webre - Wells 500kV	387
Greenwood - Humphrey 115kV	Bayou Sales - Teche 138kV (CLECO)	390
Judice - Scott1 138kV	Greenwood - Humphrey 115kV	396
Terrebone 230/115kV transformer	Bayou Vista - ELPTAP 138kV (CLECO)	399
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	402
Houma - City of Houma 115kV	Base Case	403
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	407
Raceland - Coteau 115kV	Landry - Raceland 230kV	408
Bryan - Pee Dee 138kV	Huntsville - LINE 558/91 TAP138 kV	410
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	410
Terrebone - Coteau 115kV	Raceland - Coteau 115kV	412
Gibson - Humphrey 115kV	Bayou Sales - Teche 138kV (CLECO)	414
Coteau - Houma 115kV	Waterford - Valentine 230kV	415
Coteau - Houma 115kV	Valentine 230/115kV transformer	415
Bonin - Cecelia 138kV	Judice - Scott1 138kV	416
Acadia - Colonial Academy 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	420
Bryan - Pee Dee 138kV	Dolet Hills - S.W. Shreevport 345kV (CLECO)	423
Greenwood - Humphrey 115kV	ELPTAP - Wax Lake 138kV (CLECO)	424
Judice - Scott1 138kV	Gibson - Humphrey 115kV	424
Coteau - Houma 115kV	Ashland - Houma 115kV	427
Terrebone 230/115kV transformer	Chauvin - Valentine 115kV	440
Gibson - Humphrey 115kV	ELPTAP - Wax Lake 138kV (CLECO)	447
Terrebone 230/115kV transformer	Waterford - Valentine 230kV	449
Judice - Scott1 138kV	Flander - Acadian 230kV (LAFA)	450
Raceland - Coteau 115kV	Landry - Terrebonne 230kV	450
Grimes - Mt. Zion 138kV	Pee Dee - Bishop 138kV	453
Grimes - Mt. Zion 138kV	Bishop - Cedar 138kV	459
Bryan - Pee Dee 138kV	Base Case	461
Habetz - Richard 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	473
Valentine 230/115kV transformer	Coteau - Houma 115kV	474
Grimes - Mt. Zion 138kV	Cedar - Cincinnati 138kV	474
Coteau - Houma 115kV	Greenwood - Terrebone 115kV	476
Judice - Scott1 138kV	Moril - Cecelia 138kV	480
Coteau - Houma 115kV	Greenwood - Humphrey 115kV	483
Greenwood - Humphrey 115kV	Bayou Vista - ELPTAP 138kV (CLECO)	484
Raceland - Coteau 115kV	Chauvin - Valentine 115kV	485
Vacherie - Waterford 230kV	Landry - Raceland 230kV	490
Addis - Big Cajun 1 230kV	Enjay - Fancy 230kV	495
North Crowley - Scott1 138kV	Richard - Scott1 138kV	496
Gibson - Humphrey 115kV	Bayou Vista - ELPTAP 138kV (CLECO)	508
Dobbin - Spring Branch 138kV	Pee Dee - Bishop 138kV	509

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Fish Creek - Spring Branch 138kV	Pee Dee - Bishop 138kV	509
Dobbin - Spring Branch 138kV	Bishop - Cedar 138kV	512
Fish Creek - Spring Branch 138kV	Bishop - Cedar 138kV	512
Raceland - Coteau 115kV	Chauvin - Ashland 115kV	513
Grimes - Mt. Zion 138kV	Cincinnati - Walker 138kV	516
Richard - Scott1 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	519
Greenwood - Terrebone 115kV	Bayou Vista - BERWKTP4 138kV (CLECO)	520
Dobbin - Spring Branch 138kV	Cedar - Cincinnati 138kV	520
Fish Creek - Spring Branch 138kV	Cedar - Cincinnati 138kV	520
Grimes - Mt. Zion 138kV	Rivtrin - Walker 138kV	526
Greenwood - Terrebone 115kV	Ramos - BERWKTP4 138kV (CLECO)	528
Acadia GSU - Scanlan 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	529
Gibson - Ramos 138kV	Bayou Sales - WaxLake 138kV (CLECO)	530
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	534
Vacherie - Waterford 230kV	Donaldsonville - Evergreen 230kV	534
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Roy S. Nelson - Richard 500kV	535
College Station - Grimes 138kV	Bishop - Cedar 138kV	536
Raceland - Coteau 115kV	Bayou Sales - WaxLake 138kV (CLECO)	538
Coteau - Houma 115kV	Base Case	539
Dobbin - Spring Branch 138kV	Cincinnati - Walker 138kV	542
Fish Creek - Spring Branch 138kV	Cincinnati - Walker 138kV	543
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	544
LINE 558 TAP - MT. Zion 138 kV	Pee Dee - Bishop 138kV	546
Dobbin - Spring Branch 138kV	Rivtrin - Walker 138kV	547
Fish Creek - Spring Branch 138kV	Rivtrin - Walker 138kV	548
Raceland - Coteau 115kV	Bayou Sales - Teche 138kV (CLECO)	549
LINE 558 TAP - MT. Zion 138 kV	Bishop - Cedar 138kV	552
Raceland - Coteau 115kV	ELPTAP - Wax Lake 138kV (CLECO)	557
Moril - Cecelia 138kV	Judice - Scott1 138kV	557
Fish Creek - Longmire 138kV	Pee Dee - Bishop 138kV	559
Fish Creek - Longmire 138kV	Bishop - Cedar 138kV	562
College Station - Grimes 138kV	Cincinnati - Walker 138kV	565
Scott1 - Bonin 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	566
LINE 558 TAP - MT. Zion 138 kV	Cedar - Cincinnati 138kV	567
Raceland - Coteau 115kV	Vacherie - Thibodaux 230kV	567
College Station - Grimes 138kV	Rivtrin - Walker 138kV	570
Fish Creek - Longmire 138kV	Cedar - Cincinnati 138kV	570

# OKGE

Limiting Element	Contingency Element	ATC
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Lake Charles Bulk - Roy S Nelson 138kV ckt 2	174
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	194
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	198
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	200
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	203
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	204
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	205
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	205
Bishop - Cedar 138kV	College Station - Bryan 138kV	206
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	Huntsville - LINE 558 TAP 138 kV	207
Pee Dee - Bishop 138kV	Navasota - Tubular 138kV	208
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	209
Bishop - Cedar 138kV	College Station - Speedway 138kV	209
Bishop - Cedar 138kV	Navasota - Speedway 138kV	209
Pee Dee - Bishop 138kV	Dobbin - Tubular 138kV	210
Bishop - Cedar 138kV	Huntsville - LINE 558 TAP 138 kV	211
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	211
Bishop - Cedar 138kV	Navasota - Tubular 138kV	212
Bishop - Cedar 138kV	Grimes - Walden 138kV	213
Bishop - Cedar 138kV	Dobbin - Tubular 138kV	214
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	214
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	217
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	221
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	221
Cedar - Cincinnati 138kV	Huntsville - LINE 558 TAP 138 kV	224
Cedar - Cincinnati 138kV	Navasota - Tubular 138kV	225
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	226
Cedar - Cincinnati 138kV	Dobbin - Tubular 138kV	226
Pee Dee - Bishop 138kV	Base Case	234
Cincinnati - Walker 138kV	College Station - Bryan 138kV	237
Bishop - Cedar 138kV	Base Case	239
Rivtrin - Walker 138kV	College Station - Bryan 138kV	243
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	247
Cedar - Cincinnati 138kV	Base Case	251

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	252
Cincinnati - Walker 138kV	College Station - Speedway 138kV	254
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	254
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	254
Cincinnati - Walker 138kV	Navasota - Tubular 138kV	258
Cincinnati - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	259
Cincinnati - Walker 138kV	Dobbin - Tubular 138kV	260
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	260
Cincinnati - Walker 138kV	Grimes - Walden 138kV	260
Rivtrin - Walker 138kV	College Station - Speedway 138kV	261
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	261
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	265
Rivtrin - Walker 138kV	Navasota - Tubular 138kV	266
Rivtrin - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	267
Rivtrin - Walker 138kV	Dobbin - Tubular 138kV	267
Rivtrin - Walker 138kV	Grimes - Walden 138kV	268
Cincinnati - Walker 138kV	Base Case	286
Rivtrin - Walker 138kV	Base Case	293
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	337
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	340
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	349
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	349
College Station - Bryan 138kV	Bishop - Cedar 138kV	352
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	360
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	373
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	378
College Station - Bryan 138kV	Cincinnati - Walker 138kV	381
College Station - Bryan 138kV	Rivtrin - Walker 138kV	386
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	394
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	396
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	400
Bryan - Pee Dee 138kV	Huntsville - LINE 558/91 TAP138 kV	400
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	413
Russellville South - Dardanelle Dam 161kV	ANO - Fort Smith 500kV	440
Bryan - Pee Dee 138kV	Base Case	452
St. Joe - Hilltop 161kV	ANO - Fort Smith 500kV	514
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	527
College Station - Grimes 138kV	Bishop - Cedar 138kV	530
Grimes - Mt. Zion 138kV	Pee Dee - Bishop 138kV	533
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	537
Grimes - Mt. Zion 138kV	Bishop - Cedar 138kV	539
Dobbin - Spring Branch 138kV	Pee Dee - Bishop 138kV	543
Fish Creek - Spring Branch 138kV	Pee Dee - Bishop 138kV	544
Dobbin - Spring Branch 138kV	Bishop - Cedar 138kV	546
Fish Creek - Spring Branch 138kV	Bishop - Cedar 138kV	547
Dobbin - Spring Branch 138kV	Cedar - Cincinnati 138kV	555
Fish Creek - Spring Branch 138kV	Cedar - Cincinnati 138kV	555



Limiting Element	Contingency Element	ATC
Grimes - Mt. Zion 138kV	Cedar - Cincinnati 138kV	557
College Station - Grimes 138kV	Cincinnati - Walker 138kV	558
College Station - Grimes 138kV	Rivtrin - Walker 138kV	563
LINE 558/91 TAP - Rivtrin 138 kV	Bryan - Pee Dee 138kV	565
Huntsville - LINE 558/91 TAP138 kV	Bryan - Pee Dee 138kV	565

## SMEPA

Limiting Element	Contingency Element	ATC
Baxter Wilson - Ray Braswell 500kV	Franklin - Grand Gulf 500kV	0
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Lake Charles Bulk - Roy S Nelson 138kV ckt 2	131
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	191
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	196
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	197
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	201
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	203
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	203
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	203
Pee Dee - Bishop 138kV	Huntsville - LINE 558 TAP 138 kV	204
Pee Dee - Bishop 138kV	Navasota - Tubular 138kV	206
Bishop - Cedar 138kV	College Station - Bryan 138kV	206
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	207
Pee Dee - Bishop 138kV	Dobbin - Tubular 138kV	207
Bishop - Cedar 138kV	College Station - Speedway 138kV	207
Bishop - Cedar 138kV	Navasota - Speedway 138kV	208
Bishop - Cedar 138kV	Huntsville - LINE 558 TAP 138 kV	208
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	208
Bishop - Cedar 138kV	Navasota - Tubular 138kV	210
Bishop - Cedar 138kV	Grimes - Walden 138kV	211
Bishop - Cedar 138kV	Dobbin - Tubular 138kV	211
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	214
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	214
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	219
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	219

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Cedar - Cincinnati 138kV	Huntsville - LINE 558 TAP 138 kV	221
Cedar - Cincinnati 138kV	Navasota - Tubular 138kV	222
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	224
Cedar - Cincinnati 138kV	Dobbin - Tubular 138kV	224
Pee Dee - Bishop 138kV	Base Case	232
Bishop - Cedar 138kV	Base Case	237
Cincinnati - Walker 138kV	College Station - Bryan 138kV	237
Rivtrin - Walker 138kV	College Station - Bryan 138kV	242
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	243
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	249
Cedar - Cincinnati 138kV	Base Case	249
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	251
Cincinnati - Walker 138kV	College Station - Speedway 138kV	252
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	252
Cincinnati - Walker 138kV	Navasota - Tubular 138kV	255
Cincinnati - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	256
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	256
Cincinnati - Walker 138kV	Dobbin - Tubular 138kV	257
Cincinnati - Walker 138kV	Grimes - Walden 138kV	257
Rivtrin - Walker 138kV	College Station - Speedway 138kV	259
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	259
Rivtrin - Walker 138kV	Navasota - Tubular 138kV	263
Rivtrin - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	263
Rivtrin - Walker 138kV	Dobbin - Tubular 138kV	264
Rivtrin - Walker 138kV	Grimes - Walden 138kV	265
Cincinnati - Walker 138kV	Base Case	283
Rivtrin - Walker 138kV	Base Case	291
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	322
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	325
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	333
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	349
College Station - Bryan 138kV	Bishop - Cedar 138kV	352
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	356
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	360
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	361
College Station - Bryan 138kV	Cincinnati - Walker 138kV	381
College Station - Bryan 138kV	Rivtrin - Walker 138kV	386
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	400
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	404
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	407
Bryan - Pee Dee 138kV	Huntsville - LINE 558/91 TAP138 kV	407
Bryan - Pee Dee 138kV	Dolet Hills - S.W. Shreevport 345kV (CLECO)	421
Bryan - Pee Dee 138kV	Base Case	458
Grimes - Mt. Zion 138kV	Pee Dee - Bishop 138kV	474
Grimes - Mt. Zion 138kV	Bishop - Cedar 138kV	479
Grimes - Mt. Zion 138kV	Cedar - Cincinnati 138kV	496
Dobbin - Spring Branch 138kV	Pee Dee - Bishop 138kV	518

Limiting Element	Contingency Element	ATC
Fish Creek - Spring Branch 138kV	Pee Dee - Bishop 138kV	519
Dobbin - Spring Branch 138kV	Bishop - Cedar 138kV	521
Fish Creek - Spring Branch 138kV	Bishop - Cedar 138kV	522
Dobbin - Spring Branch 138kV	Cedar - Cincinnati 138kV	530
Fish Creek - Spring Branch 138kV	Cedar - Cincinnati 138kV	530
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	532
College Station - Grimes 138kV	Bishop - Cedar 138kV	534
Grimes - Mt. Zion 138kV	Cincinnati - Walker 138kV	540
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	542
Grimes - Mt. Zion 138kV	Rivtrin - Walker 138kV	549
Dobbin - Spring Branch 138kV	Cincinnati - Walker 138kV	553
Fish Creek - Spring Branch 138kV	Cincinnati - Walker 138kV	553
Dobbin - Spring Branch 138kV	Rivtrin - Walker 138kV	558
Fish Creek - Spring Branch 138kV	Rivtrin - Walker 138kV	558
College Station - Grimes 138kV	Cincinnati - Walker 138kV	563
College Station - Grimes 138kV	Rivtrin - Walker 138kV	568
Fish Creek - Longmire 138kV	Pee Dee - Bishop 138kV	569
LINE 558 TAP - MT. Zion 138 kV	Pee Dee - Bishop 138kV	571
Fish Creek - Longmire 138kV	Bishop - Cedar 138kV	572

## SOCO

Limiting Element	Contingency Element	ATC
Baxter Wilson - Ray Braswell 500kV	Franklin - Grand Gulf 500kV	0
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Lake Charles Bulk - Roy S Nelson 138kV ckt 2	145
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	192
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	196
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	197
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	202
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	203
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	204
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	204
Pee Dee - Bishop 138kV	Huntsville - LINE 558 TAP 138 kV	205
Bishop - Cedar 138kV	College Station - Bryan 138kV	206
Pee Dee - Bishop 138kV	Navasota - Tubular 138kV	206
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	207

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Pee Dee - Bishop 138kV	Dobbin - Tubular 138kV	208
Bishop - Cedar 138kV	College Station - Speedway 138kV	208
Bishop - Cedar 138kV	Navasota - Speedway 138kV	208
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	209
Bishop - Cedar 138kV	Huntsville - LINE 558 TAP 138 kV	209
Bishop - Cedar 138kV	Navasota - Tubular 138kV	210
Bishop - Cedar 138kV	Grimes - Walden 138kV	212
Bishop - Cedar 138kV	Dobbin - Tubular 138kV	212
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	214
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	215
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	220
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	220
Cedar - Cincinnati 138kV	Huntsville - LINE 558 TAP 138 kV	222
Cedar - Cincinnati 138kV	Navasota - Tubular 138kV	223
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	224
Cedar - Cincinnati 138kV	Dobbin - Tubular 138kV	224
Pee Dee - Bishop 138kV	Base Case	233
Bishop - Cedar 138kV	Base Case	237
Cincinnati - Walker 138kV	College Station - Bryan 138kV	237
Rivtrin - Walker 138kV	College Station - Bryan 138kV	242
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	244
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	249
Cedar - Cincinnati 138kV	Base Case	250
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	252
Cincinnati - Walker 138kV	College Station - Speedway 138kV	252
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	252
Cincinnati - Walker 138kV	Navasota - Tubular 138kV	256
Cincinnati - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	257
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	257
Cincinnati - Walker 138kV	Dobbin - Tubular 138kV	258
Cincinnati - Walker 138kV	Grimes - Walden 138kV	258
Rivtrin - Walker 138kV	College Station - Speedway 138kV	259
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	259
Rivtrin - Walker 138kV	Navasota - Tubular 138kV	263
Rivtrin - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	264
Rivtrin - Walker 138kV	Dobbin - Tubular 138kV	265
Rivtrin - Walker 138kV	Grimes - Walden 138kV	266
Cincinnati - Walker 138kV	Base Case	284
Rivtrin - Walker 138kV	Base Case	291
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	326
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	329
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	337
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	349
College Station - Bryan 138kV	Bishop - Cedar 138kV	352
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	360
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	360
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	365

Limiting Element	Contingency Element	ATC
College Station - Bryan 138kV	Cincinnati - Walker 138kV	381
College Station - Bryan 138kV	Rivtrin - Walker 138kV	386
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	398
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	402
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	405
Bryan - Pee Dee 138kV	Huntsville - LINE 558/91 TAP138 kV	405
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	419
Bryan - Pee Dee 138kV	Base Case	457
Grimes - Mt. Zion 138kV	Pee Dee - Bishop 138kV	487
Grimes - Mt. Zion 138kV	Bishop - Cedar 138kV	493
Grimes - Mt. Zion 138kV	Cedar - Cincinnati 138kV	509
Dobbin - Spring Branch 138kV	Pee Dee - Bishop 138kV	524
Fish Creek - Spring Branch 138kV	Pee Dee - Bishop 138kV	525
Dobbin - Spring Branch 138kV	Bishop - Cedar 138kV	527
Fish Creek - Spring Branch 138kV	Bishop - Cedar 138kV	528
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	531
College Station - Grimes 138kV	Bishop - Cedar 138kV	533
Dobbin - Spring Branch 138kV	Cedar - Cincinnati 138kV	536
Fish Creek - Spring Branch 138kV	Cedar - Cincinnati 138kV	536
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	541
Grimes - Mt. Zion 138kV	Cincinnati - Walker 138kV	555
Dobbin - Spring Branch 138kV	Cincinnati - Walker 138kV	559
Fish Creek - Spring Branch 138kV	Cincinnati - Walker 138kV	559
College Station - Grimes 138kV	Cincinnati - Walker 138kV	562
Dobbin - Spring Branch 138kV	Rivtrin - Walker 138kV	564
Fish Creek - Spring Branch 138kV	Rivtrin - Walker 138kV	564
Grimes - Mt. Zion 138kV	Rivtrin - Walker 138kV	565
College Station - Grimes 138kV	Rivtrin - Walker 138kV	566

## SPA

Limiting Element	Contingency Element	ATC
Melborne - Sage 161kV	Dell - Independence SES 500kV	0
Melborne - Sage 161kV	ANO - Fort Smith 500kV	0
Melborne - Sage 161kV	Newport - Newport Industrial 161kV	0
Melborne - Sage 161kV	Newport AB - Newport Industrial 161kV	0
Melborne - Sage 161kV	Cash - Newport AB 161kV	0
Melborne - Sage 161kV	Cash - Jonesboro 161kV	0
Melborne - Sage 161kV	Sansouci - Shelby (TVA) 500kV	0
Melborne - Sage 161kV	Sage - Guion 161kV	0
Melborne - Sage 161kV	Newport - Swifton 161kV	0
Melborne - Sage 161kV	Mountain View - Guion 161kV	0
Calico Rock - Melborne 161kV	Dell - Independence SES 500kV	72
Calico Rock - Melborne 161kV	ANO - Fort Smith 500kV	79

Limiting Element	Contingency Element	ATC
Lake Conway - Mayflower 115kV	Pleasant Hill 500/161kV transformer	116
Calico Rock - Norfolk 161kV	Dell - Independence SES 500kV	130
Pleasant Hill 500/161kV transformer	ANO 500/115kV transformer	133
Calico Rock - Norfolk 161kV	ANO - Fort Smith 500kV	135
Calico Rock - Melborne 161kV	Newport - Newport Industrial 161kV	136
Calico Rock - Melborne 161kV	Newport AB - Newport Industrial 161kV	152
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Lake Charles Bulk - Roy S Nelson 138kV ckt 2	168
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Calico Rock - Melborne 161kV	Cash - Newport AB 161kV	178
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	193
Calico Rock - Norfolk 161kV	Newport - Newport Industrial 161kV	194
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	198
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	199
Calico Rock - Melborne 161kV	Cash - Jonesboro 161kV	199
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	203
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	203
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	205
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	205
Bishop - Cedar 138kV	College Station - Bryan 138kV	206
Pee Dee - Bishop 138kV	Huntsville - LINE 558 TAP 138 kV	206
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	Navasota - Tubular 138kV	207
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	208
Bishop - Cedar 138kV	College Station - Speedway 138kV	209
Bishop - Cedar 138kV	Navasota - Speedway 138kV	209
Pee Dee - Bishop 138kV	Dobbin - Tubular 138kV	209
Calico Rock - Norfolk 161kV	Newport AB - Newport Industrial 161kV	210
Bishop - Cedar 138kV	Huntsville - LINE 558 TAP 138 kV	211
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	211
Bishop - Cedar 138kV	Navasota - Tubular 138kV	212
Bishop - Cedar 138kV	Grimes - Walden 138kV	213
Bishop - Cedar 138kV	Dobbin - Tubular 138kV	213
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	214
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	216
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	221
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	221
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	223
Cedar - Cincinnati 138kV	Huntsville - LINE 558 TAP 138 kV	223
Cedar - Cincinnati 138kV	Navasota - Tubular 138kV	224

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	225
Cedar - Cincinnati 138kV	Dobbin - Tubular 138kV	226
Calico Rock - Melborne 161kV	Newport - Swifton 161kV	226
Calico Rock - Melborne 161kV	Sansouci - Shelby (TVA) 500kV	228
Calico Rock - Melborne 161kV	Sage - Guion 161kV	233
Pee Dee - Bishop 138kV	Base Case	234
Calico Rock - Norfolk 161kV	Cash - Newport AB 161kV	236
Cincinnati - Walker 138kV	College Station - Bryan 138kV	237
Bishop - Cedar 138kV	Base Case	238
Rivtrin - Walker 138kV	College Station - Bryan 138kV	243
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	246
Calico Rock - Melborne 161kV	Mountain View - Guion 161kV	248
Cedar - Cincinnati 138kV	Base Case	251
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	251
Cincinnati - Walker 138kV	College Station - Speedway 138kV	253
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	253
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	253
Calico Rock - Norfolk 161kV	Cash - Jonesboro 161kV	257
Cincinnati - Walker 138kV	Navasota - Tubular 138kV	257
Cincinnati - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	258
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	259
Cincinnati - Walker 138kV	Dobbin - Tubular 138kV	259
Cincinnati - Walker 138kV	Grimes - Walden 138kV	259
Rivtrin - Walker 138kV	College Station - Speedway 138kV	261
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	261
Rivtrin - Walker 138kV	Navasota - Tubular 138kV	265
Rivtrin - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	266
Rivtrin - Walker 138kV	Dobbin - Tubular 138kV	266
Rivtrin - Walker 138kV	Grimes - Walden 138kV	267
Calico Rock - Norfolk 161kV	Newport - Swifton 161kV	285
Cincinnati - Walker 138kV	Base Case	285
Calico Rock - Norfolk 161kV	Sansouci - Shelby (TVA) 500kV	290
Rivtrin - Walker 138kV	Base Case	293
Calico Rock - Norfolk 161kV	Sage - Guion 161kV	294
Calico Rock - Norfolk 161kV	Mountain View - Guion 161kV	308
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	333
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	336
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	345
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	349
College Station - Bryan 138kV	Bishop - Cedar 138kV	352
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	360
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	368
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	373
College Station - Bryan 138kV	Cincinnati - Walker 138kV	381
Russellville South - Dardanelle Dam 161kV	ANO - Fort Smith 500kV	382
College Station - Bryan 138kV	Rivtrin - Walker 138kV	386
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	396

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	398
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	402
Bryan - Pee Dee 138kV	Huntsville - LINE 558/91 TAP138 kV	402
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	415
Melborne - Sage 161kV	Base Case	434
Bryan - Pee Dee 138kV	Base Case	454
Independence SES - Moorefield 161kV	ANO - Fort Smith 500kV	492
Independence SES - Moorefield 161kV	Dell - Independence SES 500kV	507
Grimes - Mt. Zion 138kV	Pee Dee - Bishop 138kV	515
Conway West 161/115kV transformer	Pleasant Hill 500/161kV transformer	521
Grimes - Mt. Zion 138kV	Bishop - Cedar 138kV	521
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	528
College Station - Grimes 138kV	Bishop - Cedar 138kV	531
Dobbin - Spring Branch 138kV	Pee Dee - Bishop 138kV	536
Fish Creek - Spring Branch 138kV	Pee Dee - Bishop 138kV	536
Grimes - Mt. Zion 138kV	Cedar - Cincinnati 138kV	539
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	539
Dobbin - Spring Branch 138kV	Bishop - Cedar 138kV	539
Fish Creek - Spring Branch 138kV	Bishop - Cedar 138kV	539
Dobbin - Spring Branch 138kV	Cedar - Cincinnati 138kV	548
Fish Creek - Spring Branch 138kV	Cedar - Cincinnati 138kV	548
College Station - Grimes 138kV	Cincinnati - Walker 138kV	560
College Station - Grimes 138kV	Rivtrin - Walker 138kV	564
LINE 558/91 TAP - Rivtrin 138 kV	Bryan - Pee Dee 138kV	570
Huntsville - LINE 558/91 TAP138 kV	Bryan - Pee Dee 138kV	570
Independence SES - Moorefield 161kV	Newport - Newport Industrial 161kV	570
Dobbin - Spring Branch 138kV	Cincinnati - Walker 138kV	571
Fish Creek - Spring Branch 138kV	Cincinnati - Walker 138kV	572

## TVA

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Baxter Wilson - Ray Braswell 500kV	Franklin - Grand Gulf 500kV	0
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Lake Charles Bulk - Roy S Nelson 138kV ckt 2	152
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	192
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	197
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	198
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	202



<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	203
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	204
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	204
Pee Dee - Bishop 138kV	Huntsville - LINE 558 TAP 138 kV	205
Bishop - Cedar 138kV	College Station - Bryan 138kV	206
Pee Dee - Bishop 138kV	Navasota - Tubular 138kV	206
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	208
Bishop - Cedar 138kV	College Station - Speedway 138kV	208
Pee Dee - Bishop 138kV	Dobbin - Tubular 138kV	208
Bishop - Cedar 138kV	Navasota - Speedway 138kV	208
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	209
Bishop - Cedar 138kV	Huntsville - LINE 558 TAP 138 kV	209
Bishop - Cedar 138kV	Navasota - Tubular 138kV	211
Bishop - Cedar 138kV	Grimes - Walden 138kV	212
Bishop - Cedar 138kV	Dobbin - Tubular 138kV	212
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	214
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	215
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	220
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	220
Cedar - Cincinnati 138kV	Huntsville - LINE 558 TAP 138 kV	222
Cedar - Cincinnati 138kV	Navasota - Tubular 138kV	223
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	224
Cedar - Cincinnati 138kV	Dobbin - Tubular 138kV	225
Pee Dee - Bishop 138kV	Base Case	233
Bishop - Cedar 138kV	Base Case	237
Cincinnati - Walker 138kV	College Station - Bryan 138kV	237
Rivtrin - Walker 138kV	College Station - Bryan 138kV	242
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	244
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	250
Cedar - Cincinnati 138kV	Base Case	250
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	252
Cincinnati - Walker 138kV	College Station - Speedway 138kV	252
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	252
Cincinnati - Walker 138kV	Navasota - Tubular 138kV	256
Cincinnati - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	257
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	257
Cincinnati - Walker 138kV	Dobbin - Tubular 138kV	258
Cincinnati - Walker 138kV	Grimes - Walden 138kV	258
Rivtrin - Walker 138kV	College Station - Speedway 138kV	260
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	260
Rivtrin - Walker 138kV	Navasota - Tubular 138kV	264
Rivtrin - Walker 138kV	Huntsville - LINE 558 TAP 138 kV	265
Rivtrin - Walker 138kV	Dobbin - Tubular 138kV	265
Rivtrin - Walker 138kV	Grimes - Walden 138kV	266
Cincinnati - Walker 138kV	Base Case	284
Rivtrin - Walker 138kV	Base Case	292

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	327
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	330
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	339
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	349
College Station - Bryan 138kV	Bishop - Cedar 138kV	352
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	360
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	362
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	367
College Station - Bryan 138kV	Cincinnati - Walker 138kV	381
College Station - Bryan 138kV	Rivtrin - Walker 138kV	386
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	398
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	401
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	405
Bryan - Pee Dee 138kV	Huntsville - LINE 558/91 TAP138 kV	405
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	418
Bryan - Pee Dee 138kV	Base Case	456
Grimes - Mt. Zion 138kV	Pee Dee - Bishop 138kV	492
Grimes - Mt. Zion 138kV	Bishop - Cedar 138kV	498
Grimes - Mt. Zion 138kV	Cedar - Cincinnati 138kV	515
Dobbin - Spring Branch 138kV	Pee Dee - Bishop 138kV	527
Fish Creek - Spring Branch 138kV	Pee Dee - Bishop 138kV	527
Dobbin - Spring Branch 138kV	Bishop - Cedar 138kV	530
Fish Creek - Spring Branch 138kV	Bishop - Cedar 138kV	530
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	530
College Station - Grimes 138kV	Bishop - Cedar 138kV	533
Dobbin - Spring Branch 138kV	Cedar - Cincinnati 138kV	538
Fish Creek - Spring Branch 138kV	Cedar - Cincinnati 138kV	539
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	540
Grimes - Mt. Zion 138kV	Cincinnati - Walker 138kV	561
College Station - Grimes 138kV	Cincinnati - Walker 138kV	561
Dobbin - Spring Branch 138kV	Cincinnati - Walker 138kV	561
Fish Creek - Spring Branch 138kV	Cincinnati - Walker 138kV	562
College Station - Grimes 138kV	Rivtrin - Walker 138kV	566
Dobbin - Spring Branch 138kV	Rivtrin - Walker 138kV	567
Fish Creek - Spring Branch 138kV	Rivtrin - Walker 138kV	567
Grimes - Mt. Zion 138kV	Rivtrin - Walker 138kV	571

## APPENDIX A-F: DETAILS OF SCENARIO 4

2012

AECI

Limiting Element	Contingency Element	ATC
Caney Creek - Lewis Creek SES 138kV	Alden - Lewis Creek SES 138kV	0
Conair - Caney Creek 138kV	Alden - Lewis Creek SES 138kV	47
Lewis Creek SES - Sheawill 138kV	Cleveland - Jacinto 138kV	119
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	215
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	216
Bishop - Cedar 138kV	College Station - Bryan 138kV	219
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	219
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	220
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	220
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	221
Pee Dee - Bishop 138kV	Crockett - Grimes 345kV	223
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	224
Bishop - Cedar 138kV	College Station - Speedway 138kV	224
Bishop - Cedar 138kV	Navasota - Speedway 138kV	224
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	225
Pee Dee - Bishop 138kV	Goree - Lewis Creek SES 138kV	225
Pee Dee - Bishop 138kV	Hartburg - Cottonwood2 500kV	225
Bishop - Cedar 138kV	Crockett - Grimes 345kV	227
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	227
Bishop - Cedar 138kV	Grimes - Walden 138kV	228
Bishop - Cedar 138kV	Goree - Lewis Creek SES 138kV	230
Bishop - Cedar 138kV	Hartburg - Cottonwood2 500kV	230
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	232
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	236
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	236
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	238
Cedar - Cincinnati 138kV	Crockett - Grimes 345kV	239
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	241
Cedar - Cincinnati 138kV	Hartburg - Cottonwood2 500kV	242
Cedar - Cincinnati 138kV	Goree - Lewis Creek SES 138kV	243

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Pee Dee - Bishop 138kV	Base Case	245
Bishop - Cedar 138kV	Base Case	250
Cincinnati - Walker 138kV	College Station - Bryan 138kV	250
Rivtrin - Walker 138kV	College Station - Bryan 138kV	255
Cedar - Cincinnati 138kV	Base Case	262
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	267
Cincinnati - Walker 138kV	College Station - Speedway 138kV	269
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	269
Cincinnati - Walker 138kV	Crockett - Grimes 345kV	271
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	273
Cincinnati - Walker 138kV	Grimes - Walden 138kV	275
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	275
Rivtrin - Walker 138kV	College Station - Speedway 138kV	276
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	276
Cincinnati - Walker 138kV	Hartburg - Cottonwood2 500kV	277
Cincinnati - Walker 138kV	Goree - Lewis Creek SES 138kV	278
Rivtrin - Walker 138kV	Crockett - Grimes 345kV	278
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	281
Rivtrin - Walker 138kV	Grimes - Walden 138kV	282
Rivtrin - Walker 138kV	Hartburg - Cottonwood2 500kV	284
Rivtrin - Walker 138kV	Walden - April 138kV	286
Cincinnati - Walker 138kV	Base Case	297
Rivtrin - Walker 138kV	Base Case	304
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	358
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	362
College Station - Bryan 138kV	Bishop - Cedar 138kV	365
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	373
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	376
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	377
Bryan - Pee Dee 138kV	Longmire - Panorama 138kV	379
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	391
College Station - Bryan 138kV	Cincinnati - Walker 138kV	394
College Station - Bryan 138kV	Rivtrin - Walker 138kV	399
Alden - Lewis Creek SES 138kV	Caney Creek - Lewis Creek SES 138kV	425
Bryan - Pee Dee 138kV	Base Case	435
Fort Worth Pipe - Sheawill 138kV	Cleveland - Jacinto 138kV	490
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	494
Caney Creek - Lewis Creek SES 138kV	Alden - Goslin 138kV	496
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	497
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	506
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	519
Alden - Lewis Creek SES 138kV	Conair - Caney Creek 138kV	520
College Station - Grimes 138kV	Bishop - Cedar 138kV	522
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	529
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	529
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	534
College Station - Grimes 138kV	Cincinnati - Walker 138kV	550

Limiting Element	Contingency Element	ATC
College Station - Grimes 138kV	Rivtrin - Walker 138kV	555
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Roy S. Nelson - Richard 500kV	561
Lewis Creek SES - Sheawill 138kV	Lewis Creek 230/138kV transformer	568

## AEPW

Limiting Element	Contingency Element	ATC
Caney Creek - Lewis Creek SES 138kV	Alden - Lewis Creek SES 138kV	0
Conair - Caney Creek 138kV	Alden - Lewis Creek SES 138kV	48
Lewis Creek SES - Sheawill 138kV	Cleveland - Jacinto 138kV	129
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	216
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	218
Bishop - Cedar 138kV	College Station - Bryan 138kV	219
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	222
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	222
Pee Dee - Bishop 138kV	Crockett - Grimes 345kV	222
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	223
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	224
Bishop - Cedar 138kV	College Station - Speedway 138kV	226
Bishop - Cedar 138kV	Navasota - Speedway 138kV	226
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	226
Bishop - Cedar 138kV	Crockett - Grimes 345kV	227
Pee Dee - Bishop 138kV	Goree - Lewis Creek SES 138kV	227
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	227
Pee Dee - Bishop 138kV	Hartburg - Cottonwood2 500kV	227
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	228
Bishop - Cedar 138kV	Grimes - Walden 138kV	231
Bishop - Cedar 138kV	Goree - Lewis Creek SES 138kV	232
Bishop - Cedar 138kV	Hartburg - Cottonwood2 500kV	232
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	236
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	238
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	238
Cedar - Cincinnati 138kV	Crockett - Grimes 345kV	239
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	241
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	243
Cedar - Cincinnati 138kV	Hartburg - Cottonwood2 500kV	244
Cedar - Cincinnati 138kV	Goree - Lewis Creek SES 138kV	245

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Pee Dee - Bishop 138kV	Base Case	247
Cincinnati - Walker 138kV	College Station - Bryan 138kV	250
Bishop - Cedar 138kV	Base Case	252
Rivtrin - Walker 138kV	College Station - Bryan 138kV	255
Cedar - Cincinnati 138kV	Base Case	265
Cincinnati - Walker 138kV	Crockett - Grimes 345kV	271
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	271
Cincinnati - Walker 138kV	College Station - Speedway 138kV	271
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	271
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	277
Cincinnati - Walker 138kV	Grimes - Walden 138kV	278
Rivtrin - Walker 138kV	Crockett - Grimes 345kV	278
Rivtrin - Walker 138kV	College Station - Speedway 138kV	278
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	278
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	279
Cincinnati - Walker 138kV	Hartburg - Cottonwood2 500kV	279
Cincinnati - Walker 138kV	Goree - Lewis Creek SES 138kV	280
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	285
Rivtrin - Walker 138kV	Grimes - Walden 138kV	285
Rivtrin - Walker 138kV	Hartburg - Cottonwood2 500kV	287
Rivtrin - Walker 138kV	Goree - Lewis Creek SES 138kV	288
Cincinnati - Walker 138kV	Base Case	299
Rivtrin - Walker 138kV	Base Case	307
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	352
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	362
College Station - Bryan 138kV	Bishop - Cedar 138kV	365
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	369
Bryan - Pee Dee 138kV	Longmire - Panorama 138kV	372
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	372
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	373
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	385
College Station - Bryan 138kV	Cincinnati - Walker 138kV	394
College Station - Bryan 138kV	Rivtrin - Walker 138kV	399
'MANSFLD4 138' TO BUS 'IPAPER 4 138'	Contingency of FlowGate 5029 DOLHILL7 345 TO SW SHV 7 345	411
Bryan - Pee Dee 138kV	Base Case	429
Alden - Lewis Creek SES 138kV	Caney Creek - Lewis Creek SES 138kV	436
Caney Creek - Lewis Creek SES 138kV	Alden - Goslin 138kV	502
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	515
College Station - Grimes 138kV	Bishop - Cedar 138kV	517
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	518
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	521
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	525
Fort Worth Pipe - Sheawill 138kV	Cleveland - Jacinto 138kV	530
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	530
Alden - Lewis Creek SES 138kV	Conair - Caney Creek 138kV	534
College Station - Grimes 138kV	Cincinnati - Walker 138kV	546
College Station - Grimes 138kV	Rivtrin - Walker 138kV	550

Limiting Element	Contingency Element	ATC
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	554
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	560

## AMRN

Limiting Element	Contingency Element	ATC
Caney Creek - Lewis Creek SES 138kV	Alden - Lewis Creek SES 138kV	0
Conair - Caney Creek 138kV	Alden - Lewis Creek SES 138kV	47
Lewis Creek SES - Sheawill 138kV	Cleveland - Jacinto 138kV	119
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	215
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	216
Bishop - Cedar 138kV	College Station - Bryan 138kV	219
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	219
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	220
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	220
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	220
Pee Dee - Bishop 138kV	Crockett - Grimes 345kV	223
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	224
Bishop - Cedar 138kV	College Station - Speedway 138kV	224
Bishop - Cedar 138kV	Navasota - Speedway 138kV	224
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	225
Pee Dee - Bishop 138kV	Goree - Lewis Creek SES 138kV	225
Pee Dee - Bishop 138kV	Hartburg - Cottonwood2 500kV	225
Bishop - Cedar 138kV	Crockett - Grimes 345kV	227
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	227
Bishop - Cedar 138kV	Grimes - Walden 138kV	228
Bishop - Cedar 138kV	Goree - Lewis Creek SES 138kV	230
Bishop - Cedar 138kV	Hartburg - Cottonwood2 500kV	230
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	232
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	236
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	236
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	238
Cedar - Cincinnati 138kV	Crockett - Grimes 345kV	239
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	241
Cedar - Cincinnati 138kV	Hartburg - Cottonwood2 500kV	242
Cedar - Cincinnati 138kV	Goree - Lewis Creek SES 138kV	243
Pee Dee - Bishop 138kV	Base Case	245

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Bishop - Cedar 138kV	Base Case	250
Cincinnati - Walker 138kV	College Station - Bryan 138kV	250
Rivtrin - Walker 138kV	College Station - Bryan 138kV	255
Cedar - Cincinnati 138kV	Base Case	262
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	267
Cincinnati - Walker 138kV	College Station - Speedway 138kV	269
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	269
Cincinnati - Walker 138kV	Crockett - Grimes 345kV	271
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	272
Cincinnati - Walker 138kV	Grimes - Walden 138kV	275
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	275
Rivtrin - Walker 138kV	College Station - Speedway 138kV	276
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	276
Cincinnati - Walker 138kV	Hartburg - Cottonwood2 500kV	276
Cincinnati - Walker 138kV	Goree - Lewis Creek SES 138kV	278
Rivtrin - Walker 138kV	Crockett - Grimes 345kV	278
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	280
Rivtrin - Walker 138kV	Grimes - Walden 138kV	282
Rivtrin - Walker 138kV	Hartburg - Cottonwood2 500kV	284
Rivtrin - Walker 138kV	Walden - April 138kV	285
Cincinnati - Walker 138kV	Base Case	296
Rivtrin - Walker 138kV	Base Case	304
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	359
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	362
College Station - Bryan 138kV	Bishop - Cedar 138kV	365
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	373
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	376
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	377
Bryan - Pee Dee 138kV	Longmire - Panorama 138kV	380
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	392
College Station - Bryan 138kV	Cincinnati - Walker 138kV	394
College Station - Bryan 138kV	Rivtrin - Walker 138kV	399
Alden - Lewis Creek SES 138kV	Caney Creek - Lewis Creek SES 138kV	424
Bryan - Pee Dee 138kV	Base Case	435
Fort Worth Pipe - Sheawill 138kV	Cleveland - Jacinto 138kV	488
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	492
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	495
Caney Creek - Lewis Creek SES 138kV	Alden - Goslin 138kV	496
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	504
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	519
Alden - Lewis Creek SES 138kV	Conair - Caney Creek 138kV	519
College Station - Grimes 138kV	Bishop - Cedar 138kV	522
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	527
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	530
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	533
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Roy S. Nelson - Richard 500kV	546
College Station - Grimes 138kV	Cincinnati - Walker 138kV	550



Limiting Element	Contingency Element	ATC
College Station - Grimes 138kV	Rivtrin - Walker 138kV	555
Lewis Creek SES - Sheawill 138kV	Lewis Creek 230/138kV transformer	565

## CLECO

Limiting Element	Contingency Element	ATC
Caney Creek - Lewis Creek SES 138kV	Alden - Lewis Creek SES 138kV	0
Conair - Caney Creek 138kV	Alden - Lewis Creek SES 138kV	47
Lewis Creek SES - Sheawill 138kV	Cleveland - Jacinto 138kV	114
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	213
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	216
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	218
Bishop - Cedar 138kV	College Station - Bryan 138kV	218
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	219
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	219
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	219
Pee Dee - Bishop 138kV	Crockett - Grimes 345kV	222
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	223
Bishop - Cedar 138kV	College Station - Speedway 138kV	223
Bishop - Cedar 138kV	Navasota - Speedway 138kV	223
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	223
Pee Dee - Bishop 138kV	Goree - Lewis Creek SES 138kV	224
Pee Dee - Bishop 138kV	Hartburg - Cottonwood2 500kV	224
Bishop - Cedar 138kV	Crockett - Grimes 345kV	227
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	227
Bishop - Cedar 138kV	Grimes - Walden 138kV	227
Bishop - Cedar 138kV	Goree - Lewis Creek SES 138kV	229
Bishop - Cedar 138kV	Hartburg - Cottonwood2 500kV	229
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	231
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	235
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	235
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	236
Cedar - Cincinnati 138kV	Crockett - Grimes 345kV	239
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	239
Cedar - Cincinnati 138kV	Hartburg - Cottonwood2 500kV	241
Cedar - Cincinnati 138kV	Goree - Lewis Creek SES 138kV	242
Pee Dee - Bishop 138kV	Base Case	244

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Bishop - Cedar 138kV	Base Case	249
Cincinnati - Walker 138kV	College Station - Bryan 138kV	250
Rivtrin - Walker 138kV	College Station - Bryan 138kV	255
Cedar - Cincinnati 138kV	Base Case	261
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	265
Cincinnati - Walker 138kV	College Station - Speedway 138kV	268
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	268
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	271
Cincinnati - Walker 138kV	Crockett - Grimes 345kV	271
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	273
Cincinnati - Walker 138kV	Grimes - Walden 138kV	273
Rivtrin - Walker 138kV	College Station - Speedway 138kV	275
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	275
Cincinnati - Walker 138kV	Hartburg - Cottonwood2 500kV	275
Cincinnati - Walker 138kV	Walden - April 138kV	276
Rivtrin - Walker 138kV	Crockett - Grimes 345kV	278
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	278
Rivtrin - Walker 138kV	Grimes - Walden 138kV	281
Rivtrin - Walker 138kV	Hartburg - Cottonwood2 500kV	283
Rivtrin - Walker 138kV	Walden - April 138kV	284
Cincinnati - Walker 138kV	Base Case	295
Rivtrin - Walker 138kV	Base Case	303
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	362
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	362
College Station - Bryan 138kV	Bishop - Cedar 138kV	365
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	373
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	379
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	380
Bryan - Pee Dee 138kV	Longmire - Panorama 138kV	383
College Station - Bryan 138kV	Cincinnati - Walker 138kV	394
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	395
College Station - Bryan 138kV	Rivtrin - Walker 138kV	399
Alden - Lewis Creek SES 138kV	Caney Creek - Lewis Creek SES 138kV	419
Bryan - Pee Dee 138kV	Base Case	438
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Roy S. Nelson - Richard 500kV	463
Fort Worth Pipe - Sheawill 138kV	Cleveland - Jacinto 138kV	468
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	483
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	486
Caney Creek - Lewis Creek SES 138kV	Alden - Goslin 138kV	493
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	494
Bayou Cove - Richard 138kV ckt 1	Roy S. Nelson - Richard 500kV	498
Alden - Lewis Creek SES 138kV	Conair - Caney Creek 138kV	514
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	517
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	521
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	522
College Station - Grimes 138kV	Bishop - Cedar 138kV	524
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	532

Limiting Element	Contingency Element	ATC
Lewis Creek SES - Sheawill 138kV	Lewis Creek 230/138kV transformer	547
Webre 500/230kV transformer Supplemental Upgrade 9Mile	Wells 500/230kV transformer	548
College Station - Grimes 138kV	Cincinnati - Walker 138kV	552
College Station - Grimes 138kV	Rivtrin - Walker 138kV	557

## EES

Limiting Element	Contingency Element	ATC
Baxter Wilson - Ray Braswell 500kV	Franklin - Grand Gulf 500kV	0
Willow Glen 500/230kV Transformer	Coly 500/230kV transformer	0
Willow Glen 500/230kV Transformer	Willow Glen - Willow Glen 2 500/138kV transformer 1	0
Addis - Big Cajun 1 230kV	Willow Glen - Webre 500kV	0
Caney Creek - Lewis Creek SES 138kV	Alden - Lewis Creek SES 138kV	0
Conair - Caney Creek 138kV	Alden - Lewis Creek SES 138kV	44
Lewis Creek SES - Sheawill 138kV	Cleveland - Jacinto 138kV	103
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	166
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Willow Glen - Willow Glen 2 500/138kV transformer 1	Willow Glen 500/230kV Transformer	175
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	198
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	212
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	216
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	217
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	218
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	219
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	219
Bishop - Cedar 138kV	College Station - Bryan 138kV	219
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	222
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	222
Bishop - Cedar 138kV	College Station - Speedway 138kV	223
Bishop - Cedar 138kV	Navasota - Speedway 138kV	223
Pee Dee - Bishop 138kV	Crockett - Grimes 345kV	223
Pee Dee - Bishop 138kV	Goree - Lewis Creek SES 138kV	224
Pee Dee - Bishop 138kV	Hartburg - Cottonwood2 500kV	224
Bishop - Cedar 138kV	Grimes - Walden 138kV	226
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	227
Bishop - Cedar 138kV	Crockett - Grimes 345kV	227
Bishop - Cedar 138kV	Goree - Lewis Creek SES 138kV	228

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Bishop - Cedar 138kV	Hartburg - Cottonwood2 500kV	228
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	230
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	235
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	235
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	235
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	239
Cedar - Cincinnati 138kV	Crockett - Grimes 345kV	240
Cedar - Cincinnati 138kV	Hartburg - Cottonwood2 500kV	241
Cedar - Cincinnati 138kV	Goree - Lewis Creek SES 138kV	241
Pee Dee - Bishop 138kV	Base Case	244
Bishop - Cedar 138kV	Base Case	248
Cincinnati - Walker 138kV	College Station - Bryan 138kV	251
Rivtrin - Walker 138kV	College Station - Bryan 138kV	256
Cedar - Cincinnati 138kV	Base Case	261
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	264
Cincinnati - Walker 138kV	College Station - Speedway 138kV	267
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	267
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	270
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	272
Cincinnati - Walker 138kV	Crockett - Grimes 345kV	272
Cincinnati - Walker 138kV	Grimes - Walden 138kV	273
Rivtrin - Walker 138kV	College Station - Speedway 138kV	275
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	275
Cincinnati - Walker 138kV	Hartburg - Cottonwood2 500kV	275
Cincinnati - Walker 138kV	Walden - April 138kV	276
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	278
Rivtrin - Walker 138kV	Crockett - Grimes 345kV	280
Rivtrin - Walker 138kV	Grimes - Walden 138kV	280
Rivtrin - Walker 138kV	Hartburg - Cottonwood2 500kV	283
Rivtrin - Walker 138kV	Walden - April 138kV	284
Cincinnati - Walker 138kV	Base Case	295
Rivtrin - Walker 138kV	Base Case	303
Willow Glen 500/230kV Transformer	Jaguar - Tap Point Esso 230kV	357
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	363
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	365
College Station - Bryan 138kV	Bishop - Cedar 138kV	366
Willow Glen 500/230kV Transformer	Addis - Big Cajun 1 230kV	368
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	374
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	382
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	382
Bryan - Pee Dee 138kV	Longmire - Panorama 138kV	386
Alden - Lewis Creek SES 138kV	Caney Creek - Lewis Creek SES 138kV	389
College Station - Bryan 138kV	Cincinnati - Walker 138kV	395
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	397
College Station - Bryan 138kV	Rivtrin - Walker 138kV	400
Fort Worth Pipe - Sheawill 138kV	Cleveland - Jacinto 138kV	427
Jaguar - Tap Point Esso 230kV	Addis - Big Cajun 1 230kV	428

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Bryan - Pee Dee 138kV	Base Case	441
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	472
Caney Creek - Lewis Creek SES 138kV	Alden - Goslin 138kV	472
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	475
Alden - Lewis Creek SES 138kV	Conair - Caney Creek 138kV	478
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	483
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	506
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	511
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	526
College Station - Grimes 138kV	Bishop - Cedar 138kV	529
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	537
Lewis Creek SES - Sheawill 138kV	Lewis Creek 230/138kV transformer	545
College Station - Grimes 138kV	Cincinnati - Walker 138kV	558
College Station - Grimes 138kV	Rivtrin - Walker 138kV	563
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Roy S. Nelson - Richard 500kV	567
Cleveland - Tarking 138kV	Porter - New Caney 138kV	574

## EMDE

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Caney Creek - Lewis Creek SES 138kV	Alden - Lewis Creek SES 138kV	0
Conair - Caney Creek 138kV	Alden - Lewis Creek SES 138kV	47
Lewis Creek SES - Sheawill 138kV	Cleveland - Jacinto 138kV	121
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	215
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	216
Bishop - Cedar 138kV	College Station - Bryan 138kV	219
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	220
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	220
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	221
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	221
Pee Dee - Bishop 138kV	Crockett - Grimes 345kV	223
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	224
Bishop - Cedar 138kV	College Station - Speedway 138kV	225
Bishop - Cedar 138kV	Navasota - Speedway 138kV	225
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	225
Pee Dee - Bishop 138kV	Goree - Lewis Creek SES 138kV	226
Pee Dee - Bishop 138kV	Hartburg - Cottonwood2 500kV	226

Limiting Element	Contingency Element	ATC
Bishop - Cedar 138kV	Crockett - Grimes 345kV	227
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	227
Bishop - Cedar 138kV	Grimes - Walden 138kV	229
Bishop - Cedar 138kV	Goree - Lewis Creek SES 138kV	230
Bishop - Cedar 138kV	Hartburg - Cottonwood2 500kV	230
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	233
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	237
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	237
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	238
Cedar - Cincinnati 138kV	Crockett - Grimes 345kV	239
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	241
Cedar - Cincinnati 138kV	Hartburg - Cottonwood2 500kV	243
Cedar - Cincinnati 138kV	Goree - Lewis Creek SES 138kV	243
Pee Dee - Bishop 138kV	Base Case	246
Bishop - Cedar 138kV	Base Case	250
Cincinnati - Walker 138kV	College Station - Bryan 138kV	250
Rivtrin - Walker 138kV	College Station - Bryan 138kV	255
Cedar - Cincinnati 138kV	Base Case	263
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	268
Cincinnati - Walker 138kV	College Station - Speedway 138kV	269
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	269
Cincinnati - Walker 138kV	Crockett - Grimes 345kV	271
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	273
Cincinnati - Walker 138kV	Grimes - Walden 138kV	275
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	276
Rivtrin - Walker 138kV	College Station - Speedway 138kV	276
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	276
Cincinnati - Walker 138kV	Hartburg - Cottonwood2 500kV	277
Rivtrin - Walker 138kV	Crockett - Grimes 345kV	278
Cincinnati - Walker 138kV	Goree - Lewis Creek SES 138kV	278
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	281
Rivtrin - Walker 138kV	Grimes - Walden 138kV	283
Rivtrin - Walker 138kV	Hartburg - Cottonwood2 500kV	285
Rivtrin - Walker 138kV	Goree - Lewis Creek SES 138kV	286
Cincinnati - Walker 138kV	Base Case	297
Rivtrin - Walker 138kV	Base Case	305
Melborne - Sage 161kV	ANO - Fort Smith 500kV	346
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	357
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	362
College Station - Bryan 138kV	Bishop - Cedar 138kV	365
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	373
Melborne - Sage 161kV	Dell - Independence SES 500kV	373
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	374
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	376
Bryan - Pee Dee 138kV	Longmire - Panorama 138kV	378
Harrison East - Omaha 161kV	Green Forest South - Clipper 161kV	388
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	390

Limiting Element	Contingency Element	ATC
College Station - Bryan 138kV	Cincinnati - Walker 138kV	394
College Station - Bryan 138kV	Rivtrin - Walker 138kV	399
Melborne - Sage 161kV	Newport - Newport Industrial 161kV	407
Alden - Lewis Creek SES 138kV	Caney Creek - Lewis Creek SES 138kV	427
Melborne - Sage 161kV	Newport AB - Newport Industrial 161kV	427
Bryan - Pee Dee 138kV	Base Case	434
Melborne - Sage 161kV	Cash - Newport AB 161kV	459
Harrison East - Omaha 161kV	Green Forrest - Green Forrest South 161kV	476
Melborne - Sage 161kV	Cash - Jonesboro 161kV	486
Fort Worth Pipe - Sheawill 138kV	Cleveland - Jacinto 138kV	497
Caney Creek - Lewis Creek SES 138kV	Alden - Goslin 138kV	497
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	498
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	501
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	510
Melborne - Sage 161kV	Sage - Guion 161kV	516
Melborne - Sage 161kV	Newport - Swifton 161kV	517
Melborne - Sage 161kV	Sansouci - Shelby (TVA) 500kV	518
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	518
Harrison East - Omaha 161kV	Berryville - Green Forrest 161kV	520
College Station - Grimes 138kV	Bishop - Cedar 138kV	521
Alden - Lewis Creek SES 138kV	Conair - Caney Creek 138kV	523
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	529
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	533
Melborne - Sage 161kV	Mountain View - Guion 161kV	535
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	538
College Station - Grimes 138kV	Cincinnati - Walker 138kV	549
College Station - Grimes 138kV	Rivtrin - Walker 138kV	554
OZD312 - Omaha 161kV	Green Forest South - Clipper 161kV	565

## LAGN

Limiting Element	Contingency Element	ATC
Willow Glen 500/230kV Transformer	Coly 500/230kV transformer	0
Baxter Wilson - Ray Braswell 500kV	Franklin - Grand Gulf 500kV	0
Willow Glen 500/230kV Transformer	Willow Glen - Willow Glen 2 500/138kV transformer 1	0
Caney Creek - Lewis Creek SES 138kV	Alden - Lewis Creek SES 138kV	0
Conair - Caney Creek 138kV	Alden - Lewis Creek SES 138kV	46
Lewis Creek SES - Sheawill 138kV	Cleveland - Jacinto 138kV	109
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	211
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	215
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	215
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	217
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	218
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	218
Bishop - Cedar 138kV	College Station - Bryan 138kV	218
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	221
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	221
Bishop - Cedar 138kV	College Station - Speedway 138kV	222
Bishop - Cedar 138kV	Navasota - Speedway 138kV	222
Pee Dee - Bishop 138kV	Crockett - Grimes 345kV	223
Pee Dee - Bishop 138kV	Goree - Lewis Creek SES 138kV	223
Pee Dee - Bishop 138kV	Huntsville - LINE 558 TAP 138 kV	224
Bishop - Cedar 138kV	Grimes - Walden 138kV	225
Bishop - Cedar 138kV	Crockett - Grimes 345kV	227
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	227
Bishop - Cedar 138kV	Goree - Lewis Creek SES 138kV	227
Bishop - Cedar 138kV	Huntsville - LINE 558 TAP 138 kV	228
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	228
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	234
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	234
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	234
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	238
Cedar - Cincinnati 138kV	Crockett - Grimes 345kV	239
Cedar - Cincinnati 138kV	Goree - Lewis Creek SES 138kV	240
Cedar - Cincinnati 138kV	Huntsville - LINE 558 TAP 138 kV	241
Pee Dee - Bishop 138kV	Base Case	243
Bishop - Cedar 138kV	Base Case	247
Cincinnati - Walker 138kV	College Station - Bryan 138kV	250
Rivtrin - Walker 138kV	College Station - Bryan 138kV	255
Cedar - Cincinnati 138kV	Base Case	260
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	262
Cincinnati - Walker 138kV	College Station - Speedway 138kV	266
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	266
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	268
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	270
Cincinnati - Walker 138kV	Crockett - Grimes 345kV	271
Cincinnati - Walker 138kV	Grimes - Walden 138kV	271
Rivtrin - Walker 138kV	College Station - Speedway 138kV	273
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	273
Cincinnati - Walker 138kV	Walden - April 138kV	274
Cincinnati - Walker 138kV	Goree - Lewis Creek SES 138kV	275
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	275
Rivtrin - Walker 138kV	Crockett - Grimes 345kV	278



<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Rivtrin - Walker 138kV	Grimes - Walden 138kV	279
Rivtrin - Walker 138kV	Walden - April 138kV	282
Rivtrin - Walker 138kV	Hartburg - Cottonwood2 500kV	283
Cincinnati - Walker 138kV	Base Case	293
Rivtrin - Walker 138kV	Base Case	301
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	362
College Station - Bryan 138kV	Bishop - Cedar 138kV	365
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	368
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	373
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	384
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	385
Bryan - Pee Dee 138kV	Longmire - Panorama 138kV	389
College Station - Bryan 138kV	Cincinnati - Walker 138kV	394
College Station - Bryan 138kV	Rivtrin - Walker 138kV	399
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	400
Alden - Lewis Creek SES 138kV	Caney Creek - Lewis Creek SES 138kV	411
Bryan - Pee Dee 138kV	Base Case	443
Fort Worth Pipe - Sheawill 138kV	Cleveland - Jacinto 138kV	448
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	466
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	469
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	477
Caney Creek - Lewis Creek SES 138kV	Alden - Goslin 138kV	488
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	499
Alden - Lewis Creek SES 138kV	Conair - Caney Creek 138kV	503
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	504
Lewis Creek SES - Sheawill 138kV	Lewis Creek 230/138kV transformer	512
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	525
College Station - Grimes 138kV	Bishop - Cedar 138kV	527
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	535
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Roy S. Nelson - Richard 500kV	536
Lewis Creek SES - Sheawill 138kV	Jacinto - Peach Creek 230kV	541
College Station - Grimes 138kV	Cincinnati - Walker 138kV	556

## Lafa

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Baxter Wilson - Ray Braswell 500kV	Franklin - Grand Gulf 500kV	0
Caney Creek - Lewis Creek SES 138kV	Alden - Lewis Creek SES 138kV	0
Conair - Caney Creek 138kV	Alden - Lewis Creek SES 138kV	46
Scott1 - Bonin 138kV	Wells (CLECO) - Point Mouton (Lafa) 230kV	61
Scott1 - Bonin 138kV	Point Des Mouton (Lafa) - Labbe (Lafa) 230kV	92
Lewis Creek SES - Sheawill 138kV	Cleveland - Jacinto 138kV	108
Webre 500/230kV transformer Supplemental Upgrade 9Mile	Webre - Wells 500kV	126
Semere - Scott2 138kV	Wells (CLECO) - Point Mouton (Lafa) 230kV	152
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165

Limiting Element	Contingency Element	ATC
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Semere - Scott2 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	183
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	211
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	215
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	216
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	217
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	218
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	218
Bishop - Cedar 138kV	College Station - Bryan 138kV	218
North Crowley - Scott1 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	220
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	221
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	221
Bishop - Cedar 138kV	College Station - Speedway 138kV	222
Bishop - Cedar 138kV	Navasota - Speedway 138kV	222
Pee Dee - Bishop 138kV	Crockett - Grimes 345kV	223
Pee Dee - Bishop 138kV	Goree - Lewis Creek SES 138kV	223
Pee Dee - Bishop 138kV	Hartburg - Cottonwood2 500kV	223
Bishop - Cedar 138kV	Grimes - Walden 138kV	225
Bishop - Cedar 138kV	Crockett - Grimes 345kV	227
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	227
Bishop - Cedar 138kV	Goree - Lewis Creek SES 138kV	227
Bishop - Cedar 138kV	Hartburg - Cottonwood2 500kV	227
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	228
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	234
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	234
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	234
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	238
Cedar - Cincinnati 138kV	Crockett - Grimes 345kV	239
Cedar - Cincinnati 138kV	Hartburg - Cottonwood2 500kV	240
Cedar - Cincinnati 138kV	Goree - Lewis Creek SES 138kV	240
Pee Dee - Bishop 138kV	Base Case	243
Bishop - Cedar 138kV	Base Case	247
Cincinnati - Walker 138kV	College Station - Bryan 138kV	250
North Crowley - Scott1 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	251
Semere - Scott2 138kV	Richard 500/230kV transformer	251
Semere - Scott2 138kV	Richard - Sellers Road 230kV	251
Rivtrin - Walker 138kV	College Station - Bryan 138kV	255
Cedar - Cincinnati 138kV	Base Case	260
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	263

Limiting Element	Contingency Element	ATC
Cincinnati - Walker 138kV	College Station - Speedway 138kV	266
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	266
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	268
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	270
Cincinnati - Walker 138kV	Crockett - Grimes 345kV	271
Cincinnati - Walker 138kV	Grimes - Walden 138kV	271
Rivtrin - Walker 138kV	College Station - Speedway 138kV	273
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	273
Cincinnati - Walker 138kV	Hartburg - Cottonwood2 500kV	274
Cincinnati - Walker 138kV	Walden - April 138kV	274
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	276
Rivtrin - Walker 138kV	Crockett - Grimes 345kV	278
Rivtrin - Walker 138kV	Grimes - Walden 138kV	279
Rivtrin - Walker 138kV	Hartburg - Cottonwood2 500kV	281
Rivtrin - Walker 138kV	Walden - April 138kV	282
Webre 500/230kV transformer Supplemental Upgrade 9Mile	Wells 500/230kV transformer	293
Cincinnati - Walker 138kV	Base Case	293
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Roy S. Nelson - Richard 500kV	297
Rivtrin - Walker 138kV	Base Case	301
Bayou Cove - Richard 138kV ckt 1	Roy S. Nelson - Richard 500kV	322
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	362
Habetz - Richard 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	363
College Station - Bryan 138kV	Bishop - Cedar 138kV	365
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	367
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	373
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	384
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	385
Bryan - Pee Dee 138kV	Longmire - Panorama 138kV	388
College Station - Bryan 138kV	Cincinnati - Walker 138kV	394
Habetz - Richard 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	398
College Station - Bryan 138kV	Rivtrin - Walker 138kV	399
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	400
Colonial Academy - Richard 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	407
Alden - Lewis Creek SES 138kV	Caney Creek - Lewis Creek SES 138kV	409
North Crowley - Scott1 138kV	Richard - Scott1 138kV	426
Richard - Scott1 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	431
Scott1 - Bonin 138kV	Bonin 230/138kV transformer (LAFA)	432
Colonial Academy - Richard 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	438
Bryan - Pee Dee 138kV	Base Case	443
Fort Worth Pipe - Sheawill 138kV	Cleveland - Jacinto 138kV	443
Richard - Scott1 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	461
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	467
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	469
North Crowley - Scott1 138kV	Richard 500/230kV transformer	475
North Crowley - Scott1 138kV	Richard - Sellers Road 230kV	476
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	478
Caney Creek - Lewis Creek SES 138kV	Alden - Goslin 138kV	486

Limiting Element	Contingency Element	ATC
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	500
Alden - Lewis Creek SES 138kV	Conair - Caney Creek 138kV	502
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	505
Lewis Creek SES - Sheawill 138kV	Lewis Creek 230/138kV transformer	514
Scott1 - Bonin 138kV	Flander - Beadle 230kV (LAFA)	520
Acadia - Colonial Academy 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	521
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	525
College Station - Grimes 138kV	Bishop - Cedar 138kV	527
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	535
Lewis Creek SES - Sheawill 138kV	Jacinto - Peach Creek 230kV	543
Bayou Cove - Richard 138kV ckt 2	Roy S. Nelson - Richard 500kV	545
Scott1 - Bonin 138kV	Cocodrie - Vil Plat 230kV	547
Scott1 - Bonin 138kV	Elks - Beadle 230kV (LAFA)	548
Acadia - Colonial Academy 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	552
College Station - Grimes 138kV	Cincinnati - Walker 138kV	556
College Station - Grimes 138kV	Rivtrin - Walker 138kV	561
Bayou Cove - Richard 138kV ckt 1	Bayou Cove - Richard 138kV ckt 2	561
North Crowley - Richard 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	567
Scott1 - Bonin 138kV	Vil Plat - West Fork 230kV	572

## LEPA

Limiting Element	Contingency Element	ATC
Baxter Wilson - Ray Braswell 500kV	Franklin - Grand Gulf 500kV	0
Willow Glen 500/230kV Transformer	Coly 500/230kV transformer	0
Addis - Big Cajun 1 230kV	Willow Glen - Webre 500kV	0
Willow Glen 500/230kV Transformer	Willow Glen - Willow Glen 2 500/138kV transformer 1	0
Caney Creek - Lewis Creek SES 138kV	Alden - Lewis Creek SES 138kV	0
Port Hudson 230/138 transformer 2	Port Hudson 230/138 transformer 1	1
Port Hudson 230/138 transformer 1	Port Hudson 230/138 transformer 2	12
Greenwood - Terrebonne 115kV Supplemental Upgrade SunEnergy	Bayou Sales - WaxLake 138kV (CLECO)	16
Greenwood - Terrebonne 115kV Supplemental Upgrade SunEnergy	Bayou Sales - Teche 138kV (CLECO)	38
Conair - Caney Creek 138kV	Alden - Lewis Creek SES 138kV	46
Greenwood - Terrebonne 115kV Supplemental Upgrade SunEnergy	ELPTAP - Wax Lake 138kV (CLECO)	55
Conway - Wyandotte 138kV	Addis - Wilbert 138kV	65
Geismar - Wyandotte 138kV	Addis - Wilbert 138kV	66
Greenwood - Terrebonne 115kV Supplemental Upgrade SunEnergy	Bayou Vista - ELPTAP 138kV (CLECO)	82
Greenwood - Humphrey 115kV	Bayou Sales - WaxLake 138kV (CLECO)	83
Gibson - Humphrey 115kV	Bayou Sales - WaxLake 138kV (CLECO)	92
Greenwood - Humphrey 115kV	Bayou Sales - Teche 138kV (CLECO)	105
Lewis Creek SES - Sheawill 138kV	Cleveland - Jacinto 138kV	110
Gibson - Humphrey 115kV	Bayou Sales - Teche 138kV (CLECO)	114

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Willow Glen - Willow Glen 2 500/138kV transformer 1	Willow Glen 500/230kV Transformer	116
Greenwood - Humphrey 115kV	ELPTAP - Wax Lake 138kV (CLECO)	122
Gibson - Humphrey 115kV	ELPTAP - Wax Lake 138kV (CLECO)	130
Greenwood - Humphrey 115kV	Bayou Vista - ELPTAP 138kV (CLECO)	149
Gibson - Humphrey 115kV	Bayou Vista - ELPTAP 138kV (CLECO)	158
Willow Glen 2 - Alchem 138kV	Air Products - Willow Glen 2 138kV bus	160
Louisiana Station - Thomas 138kV	Big Cajun 2 - Webre 500kV	161
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Gibson - Ramos 138kV	Bayou Sales - WaxLake 138kV (CLECO)	168
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Greenwood - Terrebone 115kV Supplemental Upgrade SunEnergy	Bayou Vista - BERWKTP4 138kV (CLECO)	170
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Greenwood - Terrebone 115kV Supplemental Upgrade SunEnergy	Ramos - BERWKTP4 138kV (CLECO)	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Gibson - Ramos 138kV	Bayou Sales - Teche 138kV (CLECO)	189
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Gibson - Ramos 138kV	ELPTAP - Wax Lake 138kV (CLECO)	206
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Terrebone 230/115kV transformer	Bayou Sales - WaxLake 138kV (CLECO)	210
Louisiana Station - Thomas 138kV	Enjay - Fancy 230kV	211
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	212
Gibson 138/115kV transformer	Bayou Sales - WaxLake 138kV (CLECO)	215
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	215
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	216
Raceland - Coteau 115kV	Terrebone 230/115kV transformer	217
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	217
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	218
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	218
Bishop - Cedar 138kV	College Station - Bryan 138kV	218
Gonzales - Sorrento 138kV	Addis - Wilbert 138kV	219
Louisiana Station - Thomas 138kV	Coughlin - Plaisance 138kV (CLECO)	220
Willow Glen 2 - Alchem 138kV	Air Products - Geigy 138kV	221
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	221
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	222
Bishop - Cedar 138kV	College Station - Speedway 138kV	222
Bishop - Cedar 138kV	Navasota - Speedway 138kV	222
Pee Dee - Bishop 138kV	Crockett - Grimes 345kV	223
Pee Dee - Bishop 138kV	Goree - Lewis Creek SES 138kV	223
Pee Dee - Bishop 138kV	Hartburg - Cottonwood2 500kV	224
Conway - Wyandotte 138kV	Louisiana Station - Wilbert 138kV	224
Geismar - Wyandotte 138kV	Louisiana Station - Wilbert 138kV	225

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Bishop - Cedar 138kV	Grimes - Walden 138kV	226
Bishop - Cedar 138kV	Crockett - Grimes 345kV	227
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	227
Bishop - Cedar 138kV	Goree - Lewis Creek SES 138kV	228
Bishop - Cedar 138kV	Hartburg - Cottonwood2 500kV	228
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	229
Terrebone 230/115kV transformer	Bayou Sales - Teche 138kV (CLECO)	231
Louisiana Station - Thomas 138kV	Enjay - Jaguar 230kV	234
Gibson - Ramos 138kV	Bayou Vista - ELPTAP 138kV (CLECO)	234
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	234
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	234
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	234
Louisiana Station - Thomas 138kV	Addis - Big Cajun 1 230kV	235
Greenwood - Humphrey 115kV	Bayou Vista - BERWKTP4 138kV (CLECO)	237
Gibson 138/115kV transformer	Bayou Sales - Teche 138kV (CLECO)	237
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	238
Cedar - Cincinnati 138kV	Crockett - Grimes 345kV	239
Greenwood - Humphrey 115kV	Ramos - BERWKTP4 138kV (CLECO)	240
Cedar - Cincinnati 138kV	Hartburg - Cottonwood2 500kV	240
Cedar - Cincinnati 138kV	Goree - Lewis Creek SES 138kV	241
Pee Dee - Bishop 138kV	Base Case	243
Gibson - Humphrey 115kV	Bayou Vista - BERWKTP4 138kV (CLECO)	245
Bishop - Cedar 138kV	Base Case	248
Terrebone 230/115kV transformer	ELPTAP - Wax Lake 138kV (CLECO)	248
Gibson - Humphrey 115kV	Ramos - BERWKTP4 138kV (CLECO)	249
Cincinnati - Walker 138kV	College Station - Bryan 138kV	250
Louisiana Station - Thomas 138kV	Conway - Wyandotte 138kV	250
Louisiana Station - Thomas 138kV	Geismar - Wyandotte 138kV	251
Addis - Wilbert 138kV	Conway - Wyandotte 138kV	252
Addis - Wilbert 138kV	Geismar - Wyandotte 138kV	252
Gibson 138/115kV transformer	ELPTAP - Wax Lake 138kV (CLECO)	254
Rivtrin - Walker 138kV	College Station - Bryan 138kV	255
Cedar - Cincinnati 138kV	Base Case	260
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	263
Cincinnati - Walker 138kV	College Station - Speedway 138kV	266
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	266
Louisiana Station - Thomas 138kV	Champagne - Krotz Spring 138kV	267
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	269
Cincinnati - Walker 138kV	Crockett - Grimes 345kV	271
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	271
Cincinnati - Walker 138kV	Grimes - Walden 138kV	272
Rivtrin - Walker 138kV	College Station - Speedway 138kV	274
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	274
Cincinnati - Walker 138kV	Hartburg - Cottonwood2 500kV	274
Cincinnati - Walker 138kV	Walden - April 138kV	275
Bonin - Cecelia 138kV	Colonial Academy - Richard 138kV	276
Terrebone 230/115kV transformer	Bayou Vista - ELPTAP 138kV (CLECO)	276

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	276
Rivtrin - Walker 138kV	Crockett - Grimes 345kV	278
Rivtrin - Walker 138kV	Grimes - Walden 138kV	279
Gibson 138/115kV transformer	Bayou Vista - ELPTAP 138kV (CLECO)	281
Rivtrin - Walker 138kV	Hartburg - Cottonwood2 500kV	282
Rivtrin - Walker 138kV	Walden - April 138kV	282
Willow Glen 500/230kV Transformer	Addis - Big Cajun 1 230kV	285
Cincinnati - Walker 138kV	Base Case	294
Sorrento 138/115kV transformer 1	Addis - Wilbert 138kV	299
Willow Glen 500/230kV Transformer	Jaguar - Tap Point Esso 230kV	300
Rivtrin - Walker 138kV	Base Case	302
Louisiana Station - Thomas 138kV	Champagne - Plaisance (CLECO) 138kV	308
Gonzales - Sorrento 138kV	Conway - Wyandotte 138kV	312
Gonzales - Sorrento 138kV	Geismar - Wyandotte 138kV	313
Gibson - Ramos 138kV	Bayou Vista - BERWKTP4 138kV (CLECO)	321
Gibson - Ramos 138kV	Ramos - BERWKTP4 138kV (CLECO)	325
Louisiana Station - Thomas 138kV	Port Hudson - Zoar 230kV	329
Conway - Wyandotte 138kV	Gonzales - Sorrento 138kV	334
Conway - Wyandotte 138kV	Sorrento 138/115kV transformer 1	334
Geismar - Wyandotte 138kV	Gonzales - Sorrento 138kV	336
Geismar - Wyandotte 138kV	Sorrento 138/115kV transformer 1	336
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Roy S. Nelson - Richard 500kV	336
Addis - Wilbert 138kV	Gonzales - Sorrento 138kV	350
Addis - Wilbert 138kV	Sorrento 138/115kV transformer 1	350
Addis - Wilbert 138kV	Addis - Willow Glen 138kV	352
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	362
Terrebone 230/115kV transformer	Bayou Vista - BERWKTP4 138kV (CLECO)	363
Semere - Scott2 138kV	Wells (CLECO) - Point Mouton (LAFA) 230kV	364
Bayou Cove - Richard 138kV ckt 1	Roy S. Nelson - Richard 500kV	364
College Station - Bryan 138kV	Bishop - Cedar 138kV	365
Semere - Scott2 138kV	Richard 500/230kV transformer	365
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	366
Semere - Scott2 138kV	Richard - Sellers Road 230kV	366
Terrebone 230/115kV transformer	Ramos - BERWKTP4 138kV (CLECO)	367
Gibson 138/115kV transformer	Bayou Vista - BERWKTP4 138kV (CLECO)	369
Gibson 138/115kV transformer	Ramos - BERWKTP4 138kV (CLECO)	372
Judice - Scott1 138kV	Richard 500/230kV transformer	373
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	373
Addis - Willow Glen 138kV	Addis - Wilbert 138kV	373
Judice - Scott1 138kV	Richard - Sellers Road 230kV	374
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	383
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	383
Bryan - Pee Dee 138kV	Longmire - Panorama 138kV	387
Addis - Wilbert 138kV	A.A.C. - Polsky Carville 230kV	389
Addis - Wilbert 138kV	A.A.C. - Licar 230kV	390
Bonin - Cecelia 138kV	Acadia - Colonial Academy 138kV	392
College Station - Bryan 138kV	Cincinnati - Walker 138kV	394

Limiting Element	Contingency Element	ATC
Addis - Wilbert 138kV	Belle Helene - Licar 230kV	395
Addis - Wilbert 138kV	Polsky Carville - Willow Glen 230kV	398
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	398
College Station - Bryan 138kV	Rivtrin - Walker 138kV	399
Addis - Wilbert 138kV	Sorrento 230/115kV transformer 1	407
Alden - Lewis Creek SES 138kV	Caney Creek - Lewis Creek SES 138kV	412
Sorrento 138/115kV transformer 1	Conway - Wyandotte 138kV	416
Sorrento 138/115kV transformer 1	Geismar - Wyandotte 138kV	416
Port Hudson - Thomas 138kV	Big Cajun 2 - Webre 500kV	424
Greenwood - Terrebone 115kV Supplemental Upgrade SunEnergy	Richard 500/230kV transformer	433
Greenwood - Terrebone 115kV Supplemental Upgrade SunEnergy	Richard - Sellers Road 230kV	433
Semere - Scott2 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	438
Bryan - Pee Dee 138kV	Base Case	441
Conway - Wyandotte 138kV	Port Hudson - Thomas 138kV	443
Geismar - Wyandotte 138kV	Port Hudson - Thomas 138kV	444
Port Hudson - Thomas 138kV	Conway - Wyandotte 138kV	450
Port Hudson - Thomas 138kV	Geismar - Wyandotte 138kV	450
Fort Worth Pipe - Sheawill 138kV	Cleveland - Jacinto 138kV	451
Port Hudson - Thomas 138kV	Coughlin - Plaisance 138kV (CLECO)	455
Port Hudson - Thomas 138kV	Champagne - Krotz Spring 138kV	459
Port Hudson - Thomas 138kV	Enjay - Fancy 230kV	461
Gonzales - Sorrento 138kV	Louisiana Station - Wilbert 138kV	465
Conway - Wyandotte 138kV	Louisiana Station - Thomas 138kV	466
Geismar - Wyandotte 138kV	Louisiana Station - Thomas 138kV	467
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	471
Terrebone 230/115kV transformer	Raceland - Coteau 115kV	471
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	474
Bonin - Cecelia 138kV	Acadia GSU - Scanlan 138kV	478
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	482
Port Hudson - Thomas 138kV	Enjay - Jaguar 230kV	483
Port Hudson - Thomas 138kV	Addis - Big Cajun 1 230kV	485
Caney Creek - Lewis Creek SES 138kV	Alden - Goslin 138kV	488
Port Hudson - Thomas 138kV	Addis - Willow Glen 138kV	499
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	504
Conway - Wyandotte 138kV	Sorrento 230/115kV transformer 1	505
Alden - Lewis Creek SES 138kV	Conair - Caney Creek 138kV	505
Geismar - Wyandotte 138kV	Sorrento 230/115kV transformer 1	506
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	509
Moril - Duboin 138kV	Greenwood - Terrebone 115kV Supplemental Upgrade SunEnergy	521
Lewis Creek SES - Sheawill 138kV	Lewis Creek 230/138kV transformer	522
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	524
College Station - Grimes 138kV	Bishop - Cedar 138kV	526
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	534
Vacherie - Waterford 230kV Supplemental Upgrade SunEnergy	Raceland - Waterford 230kV	539



Limiting Element	Contingency Element	ATC
Port Hudson - Thomas 138kV	Champagne - Plaisance (CLECO) 138kV	544
Addis - Wilbert 138kV	Base Case	547
Lewis Creek SES - Sheawill 138kV	Jacinto - Peach Creek 230kV	552
College Station - Grimes 138kV	Cincinnati - Walker 138kV	555
Alchem - Monochem1 138kV	A.A.C. - Polsky Carville 230kV	558
College Station - Grimes 138kV	Rivtrin - Walker 138kV	560
Conway - Wyandotte 138kV	Gonzales - Duplis 138kV	572
Geismar - Wyandotte 138kV	Gonzales - Duplis 138kV	573

## OKGE

Limiting Element	Contingency Element	ATC
Caney Creek - Lewis Creek SES 138kV	Alden - Lewis Creek SES 138kV	0
Conair - Caney Creek 138kV	Alden - Lewis Creek SES 138kV	47
Lewis Creek SES - Sheawill 138kV	Cleveland - Jacinto 138kV	123
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	216
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	216
Bishop - Cedar 138kV	College Station - Bryan 138kV	219
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	221
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	221
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	221
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	222
Pee Dee - Bishop 138kV	Crockett - Grimes 345kV	223
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	225
Bishop - Cedar 138kV	College Station - Speedway 138kV	225
Bishop - Cedar 138kV	Navasota - Speedway 138kV	225
Pee Dee - Bishop 138kV	Goree - Lewis Creek SES 138kV	226
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	226
Pee Dee - Bishop 138kV	Hartburg - Cottonwood2 500kV	226
Bishop - Cedar 138kV	Crockett - Grimes 345kV	227
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	227
Bishop - Cedar 138kV	Grimes - Walden 138kV	229
Bishop - Cedar 138kV	Goree - Lewis Creek SES 138kV	230
Bishop - Cedar 138kV	Hartburg - Cottonwood2 500kV	231
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	234
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	237
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	237

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
Cedar - Cincinnati 138kV	Crockett - Grimes 345kV	239
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	239
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	242
Cedar - Cincinnati 138kV	Hartburg - Cottonwood2 500kV	243
Cedar - Cincinnati 138kV	Goree - Lewis Creek SES 138kV	243
Pee Dee - Bishop 138kV	Base Case	246
Cincinnati - Walker 138kV	College Station - Bryan 138kV	250
Bishop - Cedar 138kV	Base Case	251
Rivtrin - Walker 138kV	College Station - Bryan 138kV	255
Cedar - Cincinnati 138kV	Base Case	263
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	269
Cincinnati - Walker 138kV	College Station - Speedway 138kV	270
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	270
Cincinnati - Walker 138kV	Crockett - Grimes 345kV	271
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	274
Cincinnati - Walker 138kV	Grimes - Walden 138kV	276
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	277
Rivtrin - Walker 138kV	College Station - Speedway 138kV	277
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	277
Cincinnati - Walker 138kV	Hartburg - Cottonwood2 500kV	278
Rivtrin - Walker 138kV	Crockett - Grimes 345kV	278
Cincinnati - Walker 138kV	Goree - Lewis Creek SES 138kV	279
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	282
Rivtrin - Walker 138kV	Grimes - Walden 138kV	284
Rivtrin - Walker 138kV	Hartburg - Cottonwood2 500kV	285
Rivtrin - Walker 138kV	Goree - Lewis Creek SES 138kV	286
Cincinnati - Walker 138kV	Base Case	298
Rivtrin - Walker 138kV	Base Case	305
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	356
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	362
College Station - Bryan 138kV	Bishop - Cedar 138kV	365
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	373
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	373
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	375
Bryan - Pee Dee 138kV	Longmire - Panorama 138kV	376
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	389
College Station - Bryan 138kV	Cincinnati - Walker 138kV	394
College Station - Bryan 138kV	Rivtrin - Walker 138kV	399
Alden - Lewis Creek SES 138kV	Caney Creek - Lewis Creek SES 138kV	429
Bryan - Pee Dee 138kV	Base Case	433
Caney Creek - Lewis Creek SES 138kV	Alden - Goslin 138kV	499
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	503
Fort Worth Pipe - Sheawill 138kV	Cleveland - Jacinto 138kV	505
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	506
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	515
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	517
College Station - Grimes 138kV	Bishop - Cedar 138kV	520

Limiting Element	Contingency Element	ATC
Alden - Lewis Creek SES 138kV	Conair - Caney Creek 138kV	526
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	527
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	539
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	544
College Station - Grimes 138kV	Cincinnati - Walker 138kV	548
College Station - Grimes 138kV	Rivtrin - Walker 138kV	553

## SMEPA

Limiting Element	Contingency Element	ATC
Baxter Wilson - Ray Braswell 500kV	Franklin - Grand Gulf 500kV	0
Caney Creek - Lewis Creek SES 138kV	Alden - Lewis Creek SES 138kV	0
Conair - Caney Creek 138kV	Alden - Lewis Creek SES 138kV	47
Lewis Creek SES - Sheawill 138kV	Cleveland - Jacinto 138kV	114
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	213
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	215
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	217
Bishop - Cedar 138kV	College Station - Bryan 138kV	218
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	219
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	219
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	219
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	222
Pee Dee - Bishop 138kV	Crockett - Grimes 345kV	223
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	223
Bishop - Cedar 138kV	College Station - Speedway 138kV	223
Bishop - Cedar 138kV	Navasota - Speedway 138kV	223
Pee Dee - Bishop 138kV	Goree - Lewis Creek SES 138kV	224
Pee Dee - Bishop 138kV	Hartburg - Cottonwood2 500kV	224
Bishop - Cedar 138kV	Crockett - Grimes 345kV	227
Bishop - Cedar 138kV	Grimes - Walden 138kV	227
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	227
Bishop - Cedar 138kV	Goree - Lewis Creek SES 138kV	229
Bishop - Cedar 138kV	Hartburg - Cottonwood2 500kV	229
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	230
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	235
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	235
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	236

Limiting Element	Contingency Element	ATC
Cedar - Cincinnati 138kV	Crockett - Grimes 345kV	239
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	239
Cedar - Cincinnati 138kV	Hartburg - Cottonwood2 500kV	241
Cedar - Cincinnati 138kV	Goree - Lewis Creek SES 138kV	241
Pee Dee - Bishop 138kV	Base Case	244
Bishop - Cedar 138kV	Base Case	248
Cincinnati - Walker 138kV	College Station - Bryan 138kV	250
Rivtrin - Walker 138kV	College Station - Bryan 138kV	255
Cedar - Cincinnati 138kV	Base Case	261
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	265
Cincinnati - Walker 138kV	College Station - Speedway 138kV	267
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	267
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	270
Cincinnati - Walker 138kV	Crockett - Grimes 345kV	271
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	273
Cincinnati - Walker 138kV	Grimes - Walden 138kV	273
Rivtrin - Walker 138kV	College Station - Speedway 138kV	275
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	275
Cincinnati - Walker 138kV	Hartburg - Cottonwood2 500kV	275
Cincinnati - Walker 138kV	Walden - April 138kV	276
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	278
Rivtrin - Walker 138kV	Crockett - Grimes 345kV	278
Rivtrin - Walker 138kV	Grimes - Walden 138kV	280
Rivtrin - Walker 138kV	Hartburg - Cottonwood2 500kV	283
Rivtrin - Walker 138kV	Walden - April 138kV	284
Cincinnati - Walker 138kV	Base Case	295
Rivtrin - Walker 138kV	Base Case	303
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	362
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	363
College Station - Bryan 138kV	Bishop - Cedar 138kV	365
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	373
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	380
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	380
Bryan - Pee Dee 138kV	Longmire - Panorama 138kV	384
College Station - Bryan 138kV	Cincinnati - Walker 138kV	394
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	395
College Station - Bryan 138kV	Rivtrin - Walker 138kV	399
Alden - Lewis Creek SES 138kV	Caney Creek - Lewis Creek SES 138kV	417
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Roy S. Nelson - Richard 500kV	425
Bryan - Pee Dee 138kV	Base Case	439
Bayou Cove - Richard 138kV ckt 1	Roy S. Nelson - Richard 500kV	460
Fort Worth Pipe - Sheawill 138kV	Cleveland - Jacinto 138kV	467
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	480
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	483
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	491
Caney Creek - Lewis Creek SES 138kV	Alden - Goslin 138kV	492
Alden - Lewis Creek SES 138kV	Conair - Caney Creek 138kV	511

Limiting Element	Contingency Element	ATC
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	514
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	519
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	522
College Station - Grimes 138kV	Bishop - Cedar 138kV	524
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	532
Lewis Creek SES - Sheawill 138kV	Lewis Creek 230/138kV transformer	540
College Station - Grimes 138kV	Cincinnati - Walker 138kV	553
College Station - Grimes 138kV	Rivtrin - Walker 138kV	558
Lewis Creek SES - Sheawill 138kV	Jacinto - Peach Creek 230kV	570

## SOCO

Limiting Element	Contingency Element	ATC
Baxter Wilson - Ray Braswell 500kV	Franklin - Grand Gulf 500kV	0
Caney Creek - Lewis Creek SES 138kV	Alden - Lewis Creek SES 138kV	0
Conair - Caney Creek 138kV	Alden - Lewis Creek SES 138kV	47
Lewis Creek SES - Sheawill 138kV	Cleveland - Jacinto 138kV	116
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	214
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	216
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	218
Bishop - Cedar 138kV	College Station - Bryan 138kV	218
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	219
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	219
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	219
Pee Dee - Bishop 138kV	Crockett - Grimes 345kV	223
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	223
Bishop - Cedar 138kV	College Station - Speedway 138kV	224
Bishop - Cedar 138kV	Navasota - Speedway 138kV	224
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	224
Pee Dee - Bishop 138kV	Goree - Lewis Creek SES 138kV	225
Pee Dee - Bishop 138kV	Hartburg - Cottonwood2 500kV	225
Bishop - Cedar 138kV	Crockett - Grimes 345kV	227
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	227
Bishop - Cedar 138kV	Grimes - Walden 138kV	227
Bishop - Cedar 138kV	Goree - Lewis Creek SES 138kV	229
Bishop - Cedar 138kV	Hartburg - Cottonwood2 500kV	229
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	231

Limiting Element	Contingency Element	ATC
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	236
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	236
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	237
Cedar - Cincinnati 138kV	Crockett - Grimes 345kV	239
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	240
Cedar - Cincinnati 138kV	Hartburg - Cottonwood2 500kV	242
Cedar - Cincinnati 138kV	Goree - Lewis Creek SES 138kV	242
Pee Dee - Bishop 138kV	Base Case	245
Bishop - Cedar 138kV	Base Case	249
Cincinnati - Walker 138kV	College Station - Bryan 138kV	250
Rivtrin - Walker 138kV	College Station - Bryan 138kV	255
Cedar - Cincinnati 138kV	Base Case	262
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	266
Cincinnati - Walker 138kV	College Station - Speedway 138kV	268
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	268
Cincinnati - Walker 138kV	Crockett - Grimes 345kV	271
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	271
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	274
Cincinnati - Walker 138kV	Grimes - Walden 138kV	274
Rivtrin - Walker 138kV	College Station - Speedway 138kV	275
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	275
Cincinnati - Walker 138kV	Hartburg - Cottonwood2 500kV	276
Cincinnati - Walker 138kV	Walden - April 138kV	277
Rivtrin - Walker 138kV	Crockett - Grimes 345kV	278
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	279
Rivtrin - Walker 138kV	Grimes - Walden 138kV	281
Rivtrin - Walker 138kV	Hartburg - Cottonwood2 500kV	283
Rivtrin - Walker 138kV	Walden - April 138kV	284
Cincinnati - Walker 138kV	Base Case	296
Rivtrin - Walker 138kV	Base Case	303
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	361
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	362
College Station - Bryan 138kV	Bishop - Cedar 138kV	365
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	373
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	378
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	379
Bryan - Pee Dee 138kV	Longmire - Panorama 138kV	382
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	394
College Station - Bryan 138kV	Cincinnati - Walker 138kV	394
College Station - Bryan 138kV	Rivtrin - Walker 138kV	399
Alden - Lewis Creek SES 138kV	Caney Creek - Lewis Creek SES 138kV	420
Bryan - Pee Dee 138kV	Base Case	437
Fort Worth Pipe - Sheawill 138kV	Cleveland - Jacinto 138kV	476
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Roy S. Nelson - Richard 500kV	481
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	486
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	489
Caney Creek - Lewis Creek SES 138kV	Alden - Goslin 138kV	493

Limiting Element	Contingency Element	ATC
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	497
Alden - Lewis Creek SES 138kV	Conair - Caney Creek 138kV	515
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	520
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	521
Bayou Cove - Richard 138kV ckt 1	Roy S. Nelson - Richard 500kV	522
College Station - Grimes 138kV	Bishop - Cedar 138kV	523
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	525
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	531
Lewis Creek SES - Sheawill 138kV	Lewis Creek 230/138kV transformer	551
College Station - Grimes 138kV	Cincinnati - Walker 138kV	552
College Station - Grimes 138kV	Rivtrin - Walker 138kV	556

## SPA

Limiting Element	Contingency Element	ATC
Caney Creek - Lewis Creek SES 138kV	Alden - Lewis Creek SES 138kV	0
Conair - Caney Creek 138kV	Alden - Lewis Creek SES 138kV	47
Lewis Creek SES - Sheawill 138kV	Cleveland - Jacinto 138kV	120
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	215
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	216
Bishop - Cedar 138kV	College Station - Bryan 138kV	219
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	220
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	220
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	220
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	221
Pee Dee - Bishop 138kV	Crockett - Grimes 345kV	223
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	224
Bishop - Cedar 138kV	College Station - Speedway 138kV	224
Bishop - Cedar 138kV	Navasota - Speedway 138kV	225
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	225
Pee Dee - Bishop 138kV	Goree - Lewis Creek SES 138kV	225
Pee Dee - Bishop 138kV	Hartburg - Cottonwood2 500kV	226
Bishop - Cedar 138kV	Crockett - Grimes 345kV	227
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	227
Bishop - Cedar 138kV	Grimes - Walden 138kV	228
Bishop - Cedar 138kV	Goree - Lewis Creek SES 138kV	230
Bishop - Cedar 138kV	Hartburg - Cottonwood2 500kV	230

Limiting Element	Contingency Element	ATC
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	233
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	236
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	237
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	238
Cedar - Cincinnati 138kV	Crockett - Grimes 345kV	239
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	241
Cedar - Cincinnati 138kV	Hartburg - Cottonwood2 500kV	243
Cedar - Cincinnati 138kV	Goree - Lewis Creek SES 138kV	243
Pee Dee - Bishop 138kV	Base Case	246
Bishop - Cedar 138kV	Base Case	250
Cincinnati - Walker 138kV	College Station - Bryan 138kV	250
Rivtrin - Walker 138kV	College Station - Bryan 138kV	255
Cedar - Cincinnati 138kV	Base Case	263
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	268
Cincinnati - Walker 138kV	College Station - Speedway 138kV	269
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	269
Cincinnati - Walker 138kV	Crockett - Grimes 345kV	271
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	273
Cincinnati - Walker 138kV	Grimes - Walden 138kV	275
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	275
Rivtrin - Walker 138kV	College Station - Speedway 138kV	276
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	276
Cincinnati - Walker 138kV	Hartburg - Cottonwood2 500kV	277
Cincinnati - Walker 138kV	Goree - Lewis Creek SES 138kV	278
Rivtrin - Walker 138kV	Crockett - Grimes 345kV	278
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	281
Rivtrin - Walker 138kV	Grimes - Walden 138kV	283
Rivtrin - Walker 138kV	Hartburg - Cottonwood2 500kV	285
Rivtrin - Walker 138kV	Goree - Lewis Creek SES 138kV	286
Melborne - Sage 161kV	ANO - Fort Smith 500kV	294
Cincinnati - Walker 138kV	Base Case	297
Rivtrin - Walker 138kV	Base Case	304
Melborne - Sage 161kV	Dell - Independence SES 500kV	307
Melborne - Sage 161kV	Newport - Newport Industrial 161kV	321
Melborne - Sage 161kV	Newport AB - Newport Industrial 161kV	336
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	358
Melborne - Sage 161kV	Cash - Newport AB 161kV	362
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	362
College Station - Bryan 138kV	Bishop - Cedar 138kV	365
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	373
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	375
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	377
Bryan - Pee Dee 138kV	Longmire - Panorama 138kV	378
Melborne - Sage 161kV	Cash - Jonesboro 161kV	383
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	391
College Station - Bryan 138kV	Cincinnati - Walker 138kV	394
College Station - Bryan 138kV	Rivtrin - Walker 138kV	399



Limiting Element	Contingency Element	ATC
Melborne - Sage 161kV	Sage - Guion 161kV	415
Melborne - Sage 161kV	Sansouci - Shelby (TVA) 500kV	418
Melborne - Sage 161kV	Newport - Swifton 161kV	422
Melborne - Sage 161kV	Independence SES - Keo 500kV	423
Alden - Lewis Creek SES 138kV	Caney Creek - Lewis Creek SES 138kV	426
Bryan - Pee Dee 138kV	Base Case	434
Pleasant Hill 500/161kV transformer	ANO 500/115kV transformer	489
Fort Worth Pipe - Sheawill 138kV	Cleveland - Jacinto 138kV	495
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	497
Caney Creek - Lewis Creek SES 138kV	Alden - Goslin 138kV	497
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	500
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	508
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	518
College Station - Grimes 138kV	Bishop - Cedar 138kV	521
Alden - Lewis Creek SES 138kV	Conair - Caney Creek 138kV	522
Calico Rock - Melborne 161kV	ANO - Fort Smith 500kV	525
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	529
Lake Conway - Mayflower 115kV	Pleasant Hill 500/161kV transformer	530
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	532
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	537
College Station - Grimes 138kV	Cincinnati - Walker 138kV	550
Calico Rock - Melborne 161kV	Dell - Independence SES 500kV	551
College Station - Grimes 138kV	Rivtrin - Walker 138kV	554
Calico Rock - Melborne 161kV	Newport - Newport Industrial 161kV	564
Lewis Creek SES - Sheawill 138kV	Lewis Creek 230/138kV transformer	573

## TVA

Limiting Element	Contingency Element	ATC
Baxter Wilson - Ray Braswell 500kV	Franklin - Grand Gulf 500kV	0
Caney Creek - Lewis Creek SES 138kV	Alden - Lewis Creek SES 138kV	0
Conair - Caney Creek 138kV	Alden - Lewis Creek SES 138kV	47
Lewis Creek SES - Sheawill 138kV	Cleveland - Jacinto 138kV	117
Pee Dee - Bishop 138kV	Bryan - Pee Dee 138kV	165
Bishop - Cedar 138kV	Bryan - Pee Dee 138kV	168
Bryan - Pee Dee 138kV	Pee Dee - Bishop 138kV	170
Bryan - Pee Dee 138kV	Bishop - Cedar 138kV	173
Cedar - Cincinnati 138kV	Bryan - Pee Dee 138kV	176
Bryan - Pee Dee 138kV	Cedar - Cincinnati 138kV	181
Cincinnati - Walker 138kV	Bryan - Pee Dee 138kV	197
Bryan - Pee Dee 138kV	Cincinnati - Walker 138kV	202
Rivtrin - Walker 138kV	Bryan - Pee Dee 138kV	202
Bryan - Pee Dee 138kV	Rivtrin - Walker 138kV	207
Pee Dee - Bishop 138kV	Grimes - Mt. Zion 138kV	214
Pee Dee - Bishop 138kV	College Station - Bryan 138kV	216
Bishop - Cedar 138kV	College Station - Bryan 138kV	218
Bishop - Cedar 138kV	Grimes - Mt. Zion 138kV	219

Limiting Element	Contingency Element	ATC
Pee Dee - Bishop 138kV	College Station - Speedway 138kV	220
Pee Dee - Bishop 138kV	Navasota - Speedway 138kV	220
Pee Dee - Bishop 138kV	LINE 558 TAP - MT. Zion 138 kV	220
Pee Dee - Bishop 138kV	Crockett - Grimes 345kV	223
Pee Dee - Bishop 138kV	Grimes - Walden 138kV	223
Bishop - Cedar 138kV	College Station - Speedway 138kV	224
Bishop - Cedar 138kV	Navasota - Speedway 138kV	224
Bishop - Cedar 138kV	LINE 558 TAP - MT. Zion 138 kV	224
Pee Dee - Bishop 138kV	Goree - Lewis Creek SES 138kV	225
Pee Dee - Bishop 138kV	Hartburg - Cottonwood2 500kV	225
Bishop - Cedar 138kV	Crockett - Grimes 345kV	227
Cedar - Cincinnati 138kV	College Station - Bryan 138kV	227
Bishop - Cedar 138kV	Grimes - Walden 138kV	228
Bishop - Cedar 138kV	Goree - Lewis Creek SES 138kV	229
Bishop - Cedar 138kV	Hartburg - Cottonwood2 500kV	229
Cedar - Cincinnati 138kV	Grimes - Mt. Zion 138kV	231
Cedar - Cincinnati 138kV	College Station - Speedway 138kV	236
Cedar - Cincinnati 138kV	Navasota - Speedway 138kV	236
Cedar - Cincinnati 138kV	LINE 558 TAP - MT. Zion 138 kV	237
Cedar - Cincinnati 138kV	Crockett - Grimes 345kV	239
Cedar - Cincinnati 138kV	Grimes - Walden 138kV	240
Cedar - Cincinnati 138kV	Hartburg - Cottonwood2 500kV	242
Cedar - Cincinnati 138kV	Goree - Lewis Creek SES 138kV	242
Pee Dee - Bishop 138kV	Base Case	245
Bishop - Cedar 138kV	Base Case	249
Cincinnati - Walker 138kV	College Station - Bryan 138kV	250
Rivtrin - Walker 138kV	College Station - Bryan 138kV	255
Cedar - Cincinnati 138kV	Base Case	262
Cincinnati - Walker 138kV	Grimes - Mt. Zion 138kV	266
Cincinnati - Walker 138kV	College Station - Speedway 138kV	268
Cincinnati - Walker 138kV	Navasota - Speedway 138kV	268
Cincinnati - Walker 138kV	Crockett - Grimes 345kV	271
Cincinnati - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	272
Cincinnati - Walker 138kV	Grimes - Walden 138kV	274
Rivtrin - Walker 138kV	Grimes - Mt. Zion 138kV	274
Rivtrin - Walker 138kV	College Station - Speedway 138kV	275
Rivtrin - Walker 138kV	Navasota - Speedway 138kV	275
Cincinnati - Walker 138kV	Hartburg - Cottonwood2 500kV	276
Cincinnati - Walker 138kV	Goree - Lewis Creek SES 138kV	277
Rivtrin - Walker 138kV	Crockett - Grimes 345kV	278
Rivtrin - Walker 138kV	LINE 558 TAP - MT. Zion 138 kV	279
Rivtrin - Walker 138kV	Grimes - Walden 138kV	282
Rivtrin - Walker 138kV	Hartburg - Cottonwood2 500kV	284
Rivtrin - Walker 138kV	Walden - April 138kV	285
Cincinnati - Walker 138kV	Base Case	296
Rivtrin - Walker 138kV	Base Case	303
Bryan - Pee Dee 138kV	Lewis Creek SES - Egypt 138kV	360

<b>Limiting Element</b>	<b>Contingency Element</b>	<b>ATC</b>
College Station - Bryan 138kV	Pee Dee - Bishop 138kV	362
College Station - Bryan 138kV	Bishop - Cedar 138kV	365
College Station - Bryan 138kV	Cedar - Cincinnati 138kV	373
Bryan - Pee Dee 138kV	Panorama - Egypt 138kV	378
Bryan - Pee Dee 138kV	Grimes - Frontier 345kV	378
Bryan - Pee Dee 138kV	Longmire - Panorama 138kV	381
Bryan - Pee Dee 138kV	LINE 558/91 TAP - Rivtrin 138 kV	393
College Station - Bryan 138kV	Cincinnati - Walker 138kV	394
College Station - Bryan 138kV	Rivtrin - Walker 138kV	399
Alden - Lewis Creek SES 138kV	Caney Creek - Lewis Creek SES 138kV	422
Bryan - Pee Dee 138kV	Base Case	437
Fort Worth Pipe - Sheawill 138kV	Cleveland - Jacinto 138kV	480
Dobbin - Tubular 138kV	Pee Dee - Bishop 138kV	488
Dobbin - Tubular 138kV	Bishop - Cedar 138kV	491
Caney Creek - Lewis Creek SES 138kV	Alden - Goslin 138kV	494
Dobbin - Tubular 138kV	Cedar - Cincinnati 138kV	499
Lake Charles Bulk - Roy S Nelson 138kV ckt 1	Roy S. Nelson - Richard 500kV	513
Alden - Lewis Creek SES 138kV	Conair - Caney Creek 138kV	517
College Station - Grimes 138kV	Pee Dee - Bishop 138kV	520
Dobbin - Tubular 138kV	Cincinnati - Walker 138kV	523
College Station - Grimes 138kV	Bishop - Cedar 138kV	523
Dobbin - Tubular 138kV	Rivtrin - Walker 138kV	528
College Station - Grimes 138kV	Cedar - Cincinnati 138kV	530
College Station - Grimes 138kV	Cincinnati - Walker 138kV	551
Lewis Creek SES - Sheawill 138kV	Lewis Creek 230/138kV transformer	555
Bayou Cove - Richard 138kV ckt 1	Roy S. Nelson - Richard 500kV	556
College Station - Grimes 138kV	Rivtrin - Walker 138kV	556