



***Affected System Impact Study
3500MW DC Interface_Shelby***

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0	5/18/12	Posting Affected System Impact Study	EC	BR
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Introduction

This Affected System Impact Study is based on the Customer's requested 3500MW DC interface on the TVA transmission system located at TVA's Shelby 500kV substation. The proposed commercial operation date of the project is January 1, 2017. The objective of this study is to assess the reliability impact of the new facility on the Entergy transmission system. It is also intended to determine whether the transmission system meets standards established by NERC Reliability Standards and Entergy's planning guidelines when the plant is connected to Entergy's transmission system. If not, transmission improvements will be identified.

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

The results of this Affected System Impact Study are preliminary in nature and are provided for informational purposes only. The underlying request requires further study due to the nature of the transmission system-to-transmission system interface of the request. As the underlying request is not a generator interconnection request, but a generation tie, further ad hoc studies among Entergy and neighboring systems must be performed to address, among other things, flows between systems, across seams, and cost allocation, as well as to define the level of transfers between systems. The specific nature and scope of further study will have to be negotiated among the parties and the parties will have to enter into an Ad Hoc Study Agreement in order for those studies to be performed.

Load Flow Analysis

Model Information

The load flow analysis was performed based on the projected 2017 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 2017 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 Customer's DC interface was modeled at TVA's Shelby 500kV substation. These associated facilities were then modeled in the case to build a revised case for the load flow analysis. Transfers were simulated between six (6) control areas using the requesting DC interface as the source and the adjacent control areas as sink.

This study considered one scenario:

Approved Future Transmission Projects	Pending Transmission Service & Study Requests
Included	Not Included

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

Load Flow Analysis

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.

Performance Criteria

The criteria for overload violations are as follows:

A) With All Lines in Service

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

B) Under Contingencies

- The MVA flow through any facility should not exceed 95% Rate A.
- OTDF of 0.5 percent was used. Contingency line flows that increased more than 17.5MW were identified.

Analysis Results

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

Summary of Results for DC interface– ERIS Load Flow Study

Interface		Summer Peak Case Used	FCITC Available
AECI	Associated Electric Cooperative, Inc.	2017	-4121
AMRN	Ameren Transmission	2017	-1182
DUKE	DUKE	2017	-2795
PJM	PJM	2017	-2109
SOCO	Southern Company	2017	-5277
TVA	Tennessee Valley Authority	2017	-427

DETAILS OF TRANSFER: WITH FUTURE PROJECTS AND WITHOUT PENDING TRANSMISSION SERVICE & STUDY REQUEST

Limiting Elements	Est. Cost	AECI	AMRN	DUKE	PJM	SOCO	TVA
Batesville - Moorefield 161kV	4,850,000	X	X				
Bee Branch AECC - Quitman 161kV	Included in 2012 ICT BP	X	X		X		
Black Rock AECC - Walnut Ridge 161kV	17,740,000		X				
Bolton - Edwards 115k	9,009,000					X	
Brookhaven - Mallalieu (MEPA) 115kV	6,837,000					X	
Calico Rock - Melborne 161kV	Included in 2012 ICT BP	X	X	X	X	X	X
Calico Rock - Norfolk 161kV	Included in 2012 ICT BP	X	X	X	X	X	X
Champagne - Plaisance (CLECO) 138kV	Other Ownership					X	
Coldwater - Hernando 115kV	8,158,000			X	X	X	X
Coldwater - Senatobia 115kV	5,605,000					X	
Coughlin (CLECO) - Plaisance 138kV (CLECO)	Other Ownership					X	
DELTP4 (SPA) - 6LEWIS4 (SPA) 138kV	Other Ownership	X					
Edwards - Vicksburg East 115kV	14,615,000					X	
Florence - South Jackson 115kV - Supplemental Upgrade	Committed to by Others					X	
Freeport - Twinkle Town 230kV	16,376,000					X	
Getwell - Hernando 115kV	Included in 2012 ICT BP	X	X	X	X	X	X
Harrisburg Tap - Marked Tree 161kV	2,772,000	X	X				
Hergett JCWL - Trumann West AECC 161kV	11,504,000	X	X	X	X		
Horn Lake - Green Brook 115kV	2,300,000		X	X	X	X	X
Horn Lake - Green Brook 115kV Supplemental Upgrade	Committed to by Others		X	X	X	X	X
Hot Springs Village - Cheetah 115kV	2,853,000	X	X				
Hoxies AECC - Swifton 161 kV	200,000		X				
Hoxies AECC - Walnut Ridge 161kV	200,000	X	X	X	X		
Independence SES - Moorefield 161kV	16,410,000	X	X	X	X	X	X
International Paper - Mansfield 138kV (CLECO)	Other Ownership	X					
International Paper - Wallake 138kV (CLECO)	Other Ownership	X					
JOACHIM (AMRN) - RUSH 2 (AMRN) 345kV	Other Ownership		X				
JOACHIM 1 (AMRN) - BAILEY TP1 (AMRN) 138kV	Other Ownership		X				
Jonesboro SPA - Jonesboro 161kV	1,650,000	X	X		X		
Kosh (AECI) - Coxcrk (AECI) 161kV	Other Ownership		X				
Marked Tree - Twist 161kV	14,858,000	X	X		X		
MARN TAP (AMRN) - PENOCRK (AMRN) 161kV	Other Ownership				X		
NEWMAD (AECI) - N MADRD (SWPA)	Other		X				

Limiting Elements	Est. Cost	AECI	AMRN	DUKE	PJM	SOCO	TVA
161kV	Ownership						
Newport - Swifton 161kV	17,020,000		X				
OLDMARS (AECI) - MARIES (AMRN) 138kV	Other Ownership	X					
PALMYRA (AMRN) - MARBHD N (AMRN) 138kV	Other Ownership				X		
PALMYRA (AMRN) 345/161kV transformer	Other Ownership			X	X	X	
Parkin - Twist 161kV	11,393,000	X	X		X		
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	Committed to by Others			X	X	X	X
Russellville East - Russellville North 161kV	4,421,000	X	X		X		
SALEM (AECI) 345/161kV transformer	Other Ownership		X				
Trumann - Trumann West AECC 161kV	Included in 2012 ICT BP	X	X	X	X	X	

DETAILS OF SCENARIO 1 – 2017

AECI

Limiting Element	Contingency Element	ATC
International Paper - Mansfield 138kV (CLECO)	Dolet Hills (CLECO) - S.W. Shreevport 345kV (CLECO)	-4121
Trumann - Trumann West AECC 161kV	Newport - Newport Industrial 161kV	-1029
Trumann - Trumann West AECC 161kV	Newport AB - Newport Industrial 161kV	-905
Getwell - Hernando 115kV	Batesville - Moon Lake 230kV	-842
Trumann - Trumann West AECC 161kV	Cash - Newport AB 161kV	-647
International Paper - Wallake 138kV (CLECO)	Dolet Hills (CLECO) - S.W. Shreevport 345kV (CLECO)	-599
Trumann - Trumann West AECC 161kV	Cash - Jonesboro 161kV	-419
Trumann - Trumann West AECC 161kV	Hergett JCWL - Jonesboro 161kV	345
Getwell - Hernando 115kV	Union MS 500/161kV transformer (TVA)	549
Parkin - Twist 161kV	West Memphis EHV - West Memphis LEHI 161kV	755
DELTP4 (SPA) - 6LEWIS4 (SPA) 138kV	R.S.S.-4 (AEPW) - ORU ETP4 (AEPW) 138kV	784
Calico Rock - Melborne 161kV	ANO - Fort Smith 500kV	853
Independence SES - Moorefield 161kV	ANO - Fort Smith 500kV	856
Trumann - Trumann West AECC 161kV	Paragould South (AECC) - Paragould 161 kV	891
Hot Springs Village - Cheetah 115kV	ANO - Fort Smith 500kV	902
Calico Rock - Melborne 161kV	Dell - Independence SES 500kV	903
Independence SES - Moorefield 161kV	Dell - Independence SES 500kV	907
Calico Rock - Melborne 161kV	Newport - Newport Industrial 161kV	958
Independence SES - Moorefield 161kV	Newport - Newport Industrial 161kV	961
Calico Rock - Norfolk 161kV	ANO - Fort Smith 500kV	985
Calico Rock - Melborne 161kV	Newport AB - Newport Industrial 161kV	991
Independence SES - Moorefield 161kV	Newport AB - Newport Industrial 161kV	995
Mark Tree - Twist 161kV	West Memphis EHV - West Memphis LEHI 161kV	998
Calico Rock - Melborne 161kV	Cash - Newport AB 161kV	1060
Trumann - Trumann West AECC 161kV	Paragould South (AECC) - Jonesboro North (AECC) 161kV	1062

Limiting Element	Contingency Element	ATC
Independence SES - Moorefield 161kV	Cash - Newport AB 161kV	1064
Calico Rock - Norfolk 161kV	Dell - Independence SES 500kV	1081
Hergett JCWL - Trumann West AECC 161kV	Newport - Newport Industrial 161kV	1092
Calico Rock - Norfolk 161kV	Newport - Newport Industrial 161kV	1105
Calico Rock - Melborne 161kV	Cash - Jonesboro 161kV	1122
Independence SES - Moorefield 161kV	Cash - Jonesboro 161kV	1126
Calico Rock - Melborne 161kV	Sage - Guion 161kV	1131
Calico Rock - Melborne 161kV	Newport - Swifton 161kV	1137
Calico Rock - Norfolk 161kV	Newport AB - Newport Industrial 161kV	1138
Independence SES - Moorefield 161kV	Newport - Swifton 161kV	1140
Calico Rock - Melborne 161kV	Hollands Bottom - ISES 500kV	1162
Independence SES - Moorefield 161kV	Hollands Bottom - ISES 500kV	1165
Calico Rock - Melborne 161kV	STFRANCISTP (AECI) - GOBKNOB (AECI) 345kV	1172
Independence SES - Moorefield 161kV	STFRANCISTP (AECI) - GOBKNOB (AECI) 345kV	1175
Independence SES - Moorefield 161kV	Kosh (AECI) - Coxcrk (AECI) 161kV	1189
Trumann - Trumann West AECC 161kV	Jonesboro - Jonesboro North (AECC) 161kV	1203
Calico Rock - Norfolk 161kV	Cash - Newport AB 161kV	1208
Hergett JCWL - Trumann West AECC 161kV	Newport AB - Newport Industrial 161kV	1216
Calico Rock - Norfolk 161kV	Cash - Jonesboro 161kV	1269
Calico Rock - Norfolk 161kV	Newport - Swifton 161kV	1279
Calico Rock - Norfolk 161kV	Sage - Guion 161kV	1283
Calico Rock - Norfolk 161kV	Hollands Bottom - ISES 500kV	1304
Calico Rock - Norfolk 161kV	STFRANCISTP (AECI) - GOBKNOB (AECI) 345kV	1318
Trumann - Trumann West AECC 161kV	Dell - Manilla AECC 161kV	1327
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	1327
Trumann - Trumann West AECC 161kV	Manilla AECC - Monette 161kV	1380
Hoxies AECC - Walnut Ridge 161kV	Newport - Newport Industrial 161kV	1380
Hoxies AECC - Walnut Ridge 161kV	Independence SES - Moorefield 161kV	1393
Hoxies AECC - Walnut Ridge 161kV	Newport AB - Newport Industrial 161kV	1459
Hergett JCWL - Trumann West AECC 161kV	Cash - Newport AB 161kV	1474
Hoxies AECC - Walnut Ridge 161kV	Batesville - Moorefield 161kV	1611
Hoxies AECC - Walnut Ridge 161kV	Cash - Newport AB 161kV	1624
Bee Branch AECC - Quitman 161kV	ANO - Fort Smith 500kV	1639
Getwell - Hernando 115kV	PLEASANT HL (TVA) - BENTON MS (TVA) 500kV	1642
Getwell - Hernando 115kV	UNION MS (TVA) - PLEASANT HL (TVA) 500kV	1644
Hot Springs Village - Cheetah 115kV	Dardanelle - Dardanelle Dam SPA 161kV	1672
Hergett JCWL - Trumann West AECC 161kV	Cash - Jonesboro 161kV	1703
Bee Branch AECC - Quitman 161kV	Hilltop - Dardanelle Dam SPA 161kV	1768
Hoxies AECC - Walnut Ridge 161kV	Cash - Jonesboro 161kV	1770
Hoxies AECC - Walnut Ridge 161kV	STFRANCISTP (AECI) - GOBKNOB (AECI) 345kV	1792
Parkin - Twist 161kV	Ebony North - West Memphis LEHI 161 kV	1805
Parkin - Twist 161kV	Ebony North - Marion 161 kV	1811
Getwell - Hernando 115kV	UNION MS (TVA) - WELLSPRNG MS (TVA) 161kV	1829
Harrisburg Tap - Marked Tree 161kV	Newport - Newport Industrial 161kV	1906
Hot Springs Village - Cheetah 115kV	Russellville East - Russellville South 161kV	1929
Hoxies AECC - Walnut Ridge 161kV	Batesville - Cushman 161 kV	1996
Hoxies AECC - Walnut Ridge 161kV	GOBKNOB (AECI) COXCRK (AECI) 161kV	2000

Limiting Element	Contingency Element	ATC
OLDMARS (AECI) - MARIES (AMRN) 138kV	ELDON (AMRN) - OSAGE (AMRN) 138kV	2017
Harrisburg Tap - Marked Tree 161kV	Newport AB - Newport Industrial 161kV	2030
DELTP4 (SPA) - 6LEWIS4 (SPA) 138kV	R.S.S.-4 (AEPW) - ORU-WTP4 (AEPW) 138kV	2044
Jonesboro SPA - Jonesboro 161kV	N MADRD (SPA) - KENNETT (SPA) 161kV	2097
DELTP4 (SPA) - 6LEWIS4 (SPA) 138kV	ORU ETP4 (AEPW) - WARNTAP4 (AEPW) 138kV	2813
Jonesboro SPA - Jonesboro 161kV	KENNETT (SPA) - PARAGLD (SPA) 161kV	2851
Batesville - Moorefield 161kV	R.S.S.-7 (AEPW) - COGENT 7 (AEPW) 345kV	3050
Batesville - Moorefield 161kV	Jonesboro SPA - Water Valley SPA 161kV	3080
Batesville - Moorefield 161kV	BEAVER (SPA) - EUREKA (AEPW) 161kV	3173
Batesville - Moorefield 161kV	CLARKSV (AEPW) - MUSKOGE (OKGE) 345kV	3218
Batesville - Moorefield 161kV	FLINTCR (AEPW) - TONECE (GRDA) 345kV	3267
Batesville - Moorefield 161kV	PITTSB-7 (AEPW) - VALIANT7 (AEPW) 345kV	3318

AMRN

Limiting Element	Contingency Element	ATC
Horn Lake - Green Brook 115kV	Getwell 230/115kV transformer	-3356
Horn Lake - Green Brook 115kV Supplemental Upgrade	Getwell 230/115kV transformer	-3356
Trumann - Trumann West AECC 161kV	Newport - Newport Industrial 161kV	-1182
Trumann - Trumann West AECC 161kV	Newport AB - Newport Industrial 161kV	-1040
Trumann - Trumann West AECC 161kV	Cash - Newport AB 161kV	-743
Getwell - Hernando 115kV	Batesville - Moon Lake 230kV	-654
Trumann - Trumann West AECC 161kV	Cash - Jonesboro 161kV	-481
Trumann - Trumann West AECC 161kV	Hergett JCWL - Jonesboro 161kV	396
Getwell - Hernando 115kV	Union MS 500/161kV transformer (TVA)	468
Calico Rock - Melborne 161kV	ANO - Fort Smith 500kV	819
Independence SES - Moorefield 161kV	ANO - Fort Smith 500kV	822
Parkin - Twist 161kV	West Memphis EHV - West Memphis LEHI 161kV	854
Calico Rock - Melborne 161kV	Dell - Independence SES 500kV	861
Independence SES - Moorefield 161kV	Dell - Independence SES 500kV	865
Calico Rock - Melborne 161kV	Newport - Newport Industrial 161kV	888
Independence SES - Moorefield 161kV	Newport - Newport Industrial 161kV	891
Calico Rock - Melborne 161kV	Newport AB - Newport Industrial 161kV	918
Independence SES - Moorefield 161kV	Newport AB - Newport Industrial 161kV	922
Calico Rock - Norfolk 161kV	ANO - Fort Smith 500kV	945
Trumann - Trumann West AECC 161kV	Paragould South (AECC) - Paragould 161 kV	973
Calico Rock - Melborne 161kV	STFRANCISTP (AECI) - GOBKNOB (AECI) 345kV	979
Independence SES - Moorefield 161kV	STFRANCISTP (AECI) - GOBKNOB (AECI) 345kV	982
Calico Rock - Melborne 161kV	Cash - Newport AB 161kV	983
Independence SES - Moorefield 161kV	Cash - Newport AB 161kV	986
Calico Rock - Norfolk 161kV	Newport - Newport Industrial 161kV	1024
Calico Rock - Norfolk 161kV	Dell - Independence SES 500kV	1031
Calico Rock - Melborne 161kV	Cash - Jonesboro 161kV	1040
Calico Rock - Melborne 161kV	Sage - Guion 161kV	1042
Independence SES - Moorefield 161kV	Cash - Jonesboro 161kV	1043
Calico Rock - Melborne 161kV	Newport - Swifton 161kV	1045

Limiting Element	Contingency Element	ATC
Calico Rock - Melborne 161kV	Hollands Bottom - ISES 500kV	1048
Independence SES - Moorefield 161kV	Newport - Swifton 161kV	1048
Independence SES - Moorefield 161kV	Hollands Bottom - ISES 500kV	1051
Calico Rock - Norfolk 161kV	Newport AB - Newport Industrial 161kV	1055
Independence SES - Moorefield 161kV	Kosh (AECI) - Coxcrk (AECI) 161kV	1081
Calico Rock - Norfolk 161kV	STFRANCISTP (AECI) - GOBKNOB (AECI) 345kV	1101
Calico Rock - Norfolk 161kV	Cash - Newport AB 161kV	1120
Mark Tree - Twist 161kV	West Memphis EHV - West Memphis LEHI 161kV	1128
Trumann - Trumann West AECC 161kV	Paragould South (AECC) - Jonesboro North (AECC) 161kV	1159
Calico Rock - Norfolk 161kV	Newport - Swifton 161kV	1175
Calico Rock - Norfolk 161kV	Hollands Bottom - ISES 500kV	1176
Calico Rock - Norfolk 161kV	Cash - Jonesboro 161kV	1177
Hot Springs Village - Cheetah 115kV	ANO - Fort Smith 500kV	1179
Calico Rock - Norfolk 161kV	Sage - Guion 161kV	1182
Hoxies AECC - Walnut Ridge 161kV	Independence SES - Moorefield 161kV	1245
Hoxies AECC - Walnut Ridge 161kV	Newport - Newport Industrial 161kV	1248
Hergett JCWL - Trumann West AECC 161kV	Newport - Newport Industrial 161kV	1255
Hoxies AECC - Walnut Ridge 161kV	STFRANCISTP (AECI) - GOBKNOB (AECI) 345kV	1287
Trumann - Trumann West AECC 161kV	Jonesboro - Jonesboro North (AECC) 161kV	1313
Hoxies AECC - Walnut Ridge 161kV	Newport AB - Newport Industrial 161kV	1319
Getwell - Hernando 115kV	PLEASANT HL (TVA) - BENTON MS (TVA) 500kV	1336
Getwell - Hernando 115kV	UNION MS (TVA) - PLEASANT HL (TVA) 500kV	1338
Hergett JCWL - Trumann West AECC 161kV	Newport AB - Newport Industrial 161kV	1397
Hoxies AECC - Walnut Ridge 161kV	Batesville - Moorefield 161kV	1439
Hoxies AECC - Walnut Ridge 161kV	Cash - Newport AB 161kV	1468
Trumann - Trumann West AECC 161kV	Dell - Manilla AECC 161kV	1488
Trumann - Trumann West AECC 161kV	Manilla AECC - Monette 161kV	1547
Getwell - Hernando 115kV	UNION MS (TVA) - WELLSPRNG MS (TVA) 161kV	1587
Hoxies AECC - Walnut Ridge 161kV	Cash - Jonesboro 161kV	1600
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	1661
Hergett JCWL - Trumann West AECC 161kV	Cash - Newport AB 161kV	1693
Bee Branch AECC - Quitman 161kV	Hilltop - Dardanelle Dam SPA 161kV	1694
Bee Branch AECC - Quitman 161kV	ANO - Fort Smith 500kV	1728
Hoxies AECC - Walnut Ridge 161kV	GOBKNOB (AECI) COXCRK (AECI) 161kV	1749
Hoxies AECC - Walnut Ridge 161kV	Batesville - Cushman 161 kV	1784
Hoxies AECC - Walnut Ridge 161kV	GOBKNOB (AECI) 345/161kV transformer	1828
Getwell - Hernando 115kV	Riverbend - Fancy Point 230kV	1865
Getwell - Hernando 115kV	WELLSRING MS (TVA) - BANKHEAD TP 161kV	1878
Getwell - Hernando 115kV	CALHOUNCITY (TVA) - SW BRUCE TP (TVA) 161kV	1886
Getwell - Hernando 115kV	Twinkle Town - Robinsonville 230kV	1943
Jonesboro SPA - Jonesboro 161kV	N MADRD (SPA) - KENNETT (SPA) 161kV	1953
Hergett JCWL - Trumann West AECC 161kV	Cash - Jonesboro 161kV	1956
Getwell - Hernando 115kV	PONTOTOC MS (TVA) - BANKHEAD TP (TVA) 161kV	2011
Parkin - Twist 161kV	Ebony North - West Memphis LEHI 161 kV	2040

Limiting Element	Contingency Element	ATC
Parkin - Twist 161kV	Ebony North - Marion 161 kV	2046
Batesville - Moorefield 161kV	ANO - Fort Smith 500kV	2075
Calico Rock - Melborne 161kV	Base Case	2080
Bee Branch AECC - Quitman 161kV	Independence SES - Moorefield 161kV	2115
Harrisburg Tap - Marked Tree 161kV	Newport - Newport Industrial 161kV	2189
Batesville - Moorefield 161kV	STFRANCISTP (AECI) - GOBKNOB (AECI) 345kV	2191
Calico Rock - Norfolk 161kV	Base Case	2221
Black Rock AECC - Walnut Ridge 161kV	STFRANCISTP (AECI) - GOBKNOB (AECI) 345kV	2237
Batesville - Moorefield 161kV	Newport - Newport Industrial 161kV	2244
Hot Springs Village - Cheetah 115kV	Dardanelle - Dardanelle Dam SPA 161kV	2250
Batesville - Moorefield 161kV	Newport AB - Newport Industrial 161kV	2275
Bee Branch AECC - Quitman 161kV	Batesville - Moorefield 161kV	2293
Mark Tree - Twist 161kV	Ebony North - West Memphis LEHI 161 kV	2314
Batesville - Moorefield 161kV	Hollands Bottom - ISES 500kV	2320
Mark Tree - Twist 161kV	Ebony North - Marion 161 kV	2321
Harrisburg Tap - Marked Tree 161kV	Newport AB - Newport Industrial 161kV	2332
Batesville - Moorefield 161kV	Cash - Newport AB 161kV	2339
Batesville - Moorefield 161kV	Newport - Swifton 161kV	2343
Batesville - Moorefield 161kV	Kosh (AECI) - Coxcrk (AECI) 161kV	2378
Batesville - Moorefield 161kV	Cash - Jonesboro 161kV	2396
Batesville - Moorefield 161kV	Hoxies AECC - Swifton 161 kV	2405
Hot Springs Village - Cheetah 115kV	Russellville East - Russellville South 161kV	2440
Independence SES - Moorefield 161kV	Base Case	2451
Bee Branch AECC - Quitman 161kV	Russellville East - Russellville South 161kV	2608
Bee Branch AECC - Quitman 161kV	Batesville - Cushman 161 kV	2609
Harrisburg Tap - Marked Tree 161kV	Cash - Newport AB 161kV	2628
Jonesboro SPA - Jonesboro 161kV	KENNETT (SPA) - PARAGLD (SPA) 161kV	2631
NEWMAD (AECI) - N MADRD (SWPA) 161kV	ESSEX (AECI) - NEWMAD (AECI) 345kV	2645
JOACHIM 1 (AMRN) - BAILEY TP1 (AMRN) 138kV	JOACHIM 2(AMRN) - BAILEY TP2 (AMRN) 138kV	2701
Bee Branch AECC - Quitman 161kV	Mt. Pleasant - Cushman 161kV	2702
JOACHIM (AMRN) - RUSH 2 (AMRN) 345kV	RUSH 1 (AMRN) - TYSON (AMRN) 345kV	2735
Bee Branch AECC - Quitman 161kV	Mt. Pleasant - Sage 161kV	2738
SALEM (AECI) 345/161kV transformer	FRANKS (AECI) - SALEM (AECI) 345kV	2771
Harrisburg Tap - Marked Tree 161kV	Cash - Jonesboro 161kV	2891
Jonesboro SPA - Jonesboro 161kV	Independence SES - Moorefield 161kV	2895
Newport - Swifton 161kV	STFRANCISTP (AECI) - GOBKNOB (AECI) 345kV	2988
Black Rock AECC - Walnut Ridge 161kV	NEWMAD (AECI) - STGRANCISTP (AECI) 345kV	3076
Bee Branch AECC - Quitman 161kV	STFRANCISTP (AECI) - GOBKNOB (AECI) 345kV	3216
Kosh (AECI) - Coxcrk (AECI) 161kV	FLETCH (AECI) - GOBKNOB (AECI) 345kV	3274
JOACHIM 1 (AMRN) - BAILEY TP1 (AMRN) 138kV	JOACHIM (AMRN) - TYSON (AMRN) 345kV	3407
Black Rock AECC - Walnut Ridge 161kV	GOBKNOB (AECI) COXCRK (AECI) 161kV	3412
Hoxies AECC - Swifton 161 kV	STFRANCISTP (AECI) - GOBKNOB (AECI) 345kV	3413
NEWMAD (AECI) - N MADRD (SWPA) 161kV	STFRANCISTP (AECI) - GOBKNOB (AECI) 345kV	3455

DUKE

Limiting Element	Contingency Element	ATC
Trumann - Trumann West AECC 161kV	Newport - Newport Industrial 161kV	-2795
Trumann - Trumann West AECC 161kV	Newport AB - Newport Industrial 161kV	-2459
Horn Lake - Green Brook 115kV Supplemental Upgrade	Getwell 230/115kV transformer	-2313
Horn Lake - Green Brook 115kV	Getwell 230/115kV transformer	-2313
Trumann - Trumann West AECC 161kV	Cash - Newport AB 161kV	-1757
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	Franklin - Grand Gulf 500kV	-1184
Trumann - Trumann West AECC 161kV	Cash - Jonesboro 161kV	-1136
PALMYRA (AMRN) 345/161kV transformer	PALMY TAP (AMRN) - SUB T (MEC) 345kV	-774
Getwell - Hernando 115kV	Batesville - Moon Lake 230kV	-400
Getwell - Hernando 115kV	Union MS 500/161kV transformer (TVA)	322
Getwell - Hernando 115kV	PLEASANT HL (TVA) - BENTON MS (TVA) 500kV	886
Getwell - Hernando 115kV	UNION MS (TVA) - PLEASANT HL (TVA) 500kV	887
Getwell - Hernando 115kV	UNION MS (TVA) - WELLSPRNG MS (TVA) 161kV	1112
Getwell - Hernando 115kV	Riverbend - Fancy Point 230kV	1278
Getwell - Hernando 115kV	WELLSPRING MS (TVA) - BANKHEAD TP 161kV	1316
Getwell - Hernando 115kV	CALHOUNCITY (TVA) - SW BRUCE TP (TVA) 161kV	1370
Getwell - Hernando 115kV	Twinkle Town - Robinsonville 230kV	1403
Getwell - Hernando 115kV	PONTOTOC MS (TVA) - BANKHEAD TP (TVA) 161kV	1409
Calico Rock - Melborne 161kV	ANO - Fort Smith 500kV	1862
Independence SES - Moorefield 161kV	ANO - Fort Smith 500kV	1870
Calico Rock - Melborne 161kV	Hollands Bottom - ISES 500kV	1996
Independence SES - Moorefield 161kV	Hollands Bottom - ISES 500kV	2002
Calico Rock - Melborne 161kV	Newport - Newport Industrial 161kV	2019
Independence SES - Moorefield 161kV	Newport - Newport Industrial 161kV	2027
Trumann - Trumann West AECC 161kV	Paragould South (AECC) - Paragould 161 kV	2063
Calico Rock - Melborne 161kV	Newport AB - Newport Industrial 161kV	2089
Independence SES - Moorefield 161kV	Newport AB - Newport Industrial 161kV	2097
Calico Rock - Norfolk 161kV	ANO - Fort Smith 500kV	2150
Calico Rock - Melborne 161kV	Cash - Newport AB 161kV	2236
Calico Rock - Norfolk 161kV	Hollands Bottom - ISES 500kV	2240
Independence SES - Moorefield 161kV	Cash - Newport AB 161kV	2243
Calico Rock - Melborne 161kV	STFRANCISTP (AECI) - GOBKNOB (AECI) 345kV	2246
Independence SES - Moorefield 161kV	STFRANCISTP (AECI) - GOBKNOB (AECI) 345kV	2253
Calico Rock - Norfolk 161kV	Newport - Newport Industrial 161kV	2330
Calico Rock - Melborne 161kV	Sage - Guion 161kV	2356
Calico Rock - Melborne 161kV	Cash - Jonesboro 161kV	2365
Coldwater - Hernando 115kV	Batesville - Moon Lake 230kV	2368
Independence SES - Moorefield 161kV	Cash - Jonesboro 161kV	2373
Calico Rock - Melborne 161kV	Newport - Swifton 161kV	2388

Limiting Element	Contingency Element	ATC
Independence SES - Moorefield 161kV	Newport - Swifton 161kV	2396
Calico Rock - Norfolk 161kV	Newport AB - Newport Industrial 161kV	2400
Calico Rock - Melborne 161kV	Kosh (AECI) - Coxcrk (AECI) 161kV	2425
Independence SES - Moorefield 161kV	Kosh (AECI) - Coxcrk (AECI) 161kV	2432
Trumann - Trumann West AECC 161kV	Paragould South (AECC) - Jonesboro North (AECC) 161kV	2459
Independence SES - Moorefield 161kV	WPLAIN (AECI) - KOSH (AECI) 161kV	2507
Calico Rock - Norfolk 161kV	STFRANCISTP (AECI) - GOBKNOB (AECI) 345kV	2526
Calico Rock - Norfolk 161kV	Cash - Newport AB 161kV	2546
Calico Rock - Norfolk 161kV	Sage - Guion 161kV	2673
Calico Rock - Norfolk 161kV	Cash - Jonesboro 161kV	2676
Calico Rock - Norfolk 161kV	Newport - Swifton 161kV	2687
Calico Rock - Norfolk 161kV	Kosh (AECI) - Coxcrk (AECI) 161kV	2719
Trumann - Trumann West AECC 161kV	Jonesboro - Jonesboro North (AECC) 161kV	2785
Hergett JCWL - Trumann West AECC 161kV	Newport - Newport Industrial 161kV	2966
Getwell - Hernando 115kV	Base Case	2967
Coldwater - Hernando 115kV	PLEASANT HL (TVA) - BENTON MS (TVA) 500kV	3126
Coldwater - Hernando 115kV	UNION MS (TVA) - PLEASANT HL (TVA) 500kV	3127
Trumann - Trumann West AECC 161kV	Dell - Manilla AECC 161kV	3224
Hoxies AECC - Walnut Ridge 161kV	Independence SES - Moorefield 161kV	3261
Hergett JCWL - Trumann West AECC 161kV	Newport AB - Newport Industrial 161kV	3302
Trumann - Trumann West AECC 161kV	Manilla AECC - Monette 161kV	3351
Hoxies AECC - Walnut Ridge 161kV	Newport - Newport Industrial 161kV	3368
Coldwater - Hernando 115kV	Union MS 500/161kV transformer (TVA)	3389
Hoxies AECC - Walnut Ridge 161kV	STFRANCISTP (AECI) - GOBKNOB (AECI) 345kV	3405

PJM

Limiting Element	Contingency Element	ATC
Horn Lake - Green Brook 115kV	Getwell 230/115kV transformer	-2644
Horn Lake - Green Brook 115kV Supplemental Upgrade	Getwell 230/115kV transformer	-2644
Trumann - Trumann West AECC 161kV	Newport - Newport Industrial 161kV	-2109
Trumann - Trumann West AECC 161kV	Newport AB - Newport Industrial 161kV	-1856
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	Franklin - Grand Gulf 500kV	-1755
Trumann - Trumann West AECC 161kV	Cash - Newport AB 161kV	-1326
Trumann - Trumann West AECC 161kV	Cash - Jonesboro 161kV	-858
PALMYRA (AMRN) 345/161kV transformer	PALMY TAP (AMRN) - SUB T (MEC) 345kV	-522
Getwell - Hernando 115kV	Batesville - Moon Lake 230kV	-469
Getwell - Hernando 115kV	Union MS 500/161kV transformer (TVA)	369
Getwell - Hernando 115kV	PLEASANT HL (TVA) - BENTON MS (TVA) 500kV	1013
Getwell - Hernando 115kV	UNION MS (TVA) - PLEASANT HL (TVA) 500kV	1014
Getwell - Hernando 115kV	UNION MS (TVA) - WELLSPRNG MS (TVA) 161kV	1269
Calico Rock - Melborne 161kV	ANO - Fort Smith 500kV	1425
Independence SES - Moorefield 161kV	ANO - Fort Smith 500kV	1430

Limiting Element	Contingency Element	ATC
Getwell - Hernando 115kV	Riverbend - Fancy Point 230kV	1462
Getwell - Hernando 115kV	WELLSPRING MS (TVA) - BANKHEAD TP 161kV	1502
Parkin - Twist 161kV	West Memphis EHV - West Memphis LEHI 161kV	1509
Getwell - Hernando 115kV	CALHOUNCITY (TVA) - SW BRUCE TP (TVA) 161kV	1548
Calico Rock - Melborne 161kV	Newport - Newport Industrial 161kV	1554
Independence SES - Moorefield 161kV	Newport - Newport Industrial 161kV	1560
Getwell - Hernando 115kV	Twinkle Town - Robinsonville 230kV	1588
Calico Rock - Melborne 161kV	Newport AB - Newport Industrial 161kV	1608
Getwell - Hernando 115kV	PONTOTOC MS (TVA) - BANKHEAD TP (TVA) 161kV	1608
Independence SES - Moorefield 161kV	Newport AB - Newport Industrial 161kV	1614
Trumann - Trumann West AECC 161kV	Paragould South (AECC) - Paragould 161 kV	1636
Calico Rock - Norfolk 161kV	ANO - Fort Smith 500kV	1645
Calico Rock - Melborne 161kV	Hollands Bottom - ISES 500kV	1656
Independence SES - Moorefield 161kV	Hollands Bottom - ISES 500kV	1662
Calico Rock - Melborne 161kV	Cash - Newport AB 161kV	1721
Independence SES - Moorefield 161kV	Cash - Newport AB 161kV	1727
Calico Rock - Melborne 161kV	STFRANCISTP (AECI) - GOBKNOB (AECI) 345kV	1737
Independence SES - Moorefield 161kV	STFRANCISTP (AECI) - GOBKNOB (AECI) 345kV	1742
Calico Rock - Melborne 161kV	Dell - Independence SES 500kV	1746
Independence SES - Moorefield 161kV	Dell - Independence SES 500kV	1755
Calico Rock - Norfolk 161kV	Newport - Newport Industrial 161kV	1793
Calico Rock - Melborne 161kV	Sage - Guion 161kV	1818
Calico Rock - Melborne 161kV	Cash - Jonesboro 161kV	1820
Independence SES - Moorefield 161kV	Cash - Jonesboro 161kV	1826
Calico Rock - Melborne 161kV	Newport - Swifton 161kV	1837
Independence SES - Moorefield 161kV	Newport - Swifton 161kV	1842
Calico Rock - Norfolk 161kV	Newport AB - Newport Industrial 161kV	1847
Calico Rock - Norfolk 161kV	Hollands Bottom - ISES 500kV	1859
Independence SES - Moorefield 161kV	Kosh (AECI) - Coxcrk (AECI) 161kV	1882
Trumann - Trumann West AECC 161kV	Paragould South (AECC) - Jonesboro North (AECC) 161kV	1951
Calico Rock - Norfolk 161kV	STFRANCISTP (AECI) - GOBKNOB (AECI) 345kV	1953
Calico Rock - Norfolk 161kV	Cash - Newport AB 161kV	1960
Mark Tree - Twist 161kV	West Memphis EHV - West Memphis LEHI 161kV	1994
Calico Rock - Norfolk 161kV	Cash - Jonesboro 161kV	2059
Calico Rock - Norfolk 161kV	Sage - Guion 161kV	2063
Calico Rock - Norfolk 161kV	Newport - Swifton 161kV	2067
Calico Rock - Norfolk 161kV	Dell - Independence SES 500kV	2090
Trumann - Trumann West AECC 161kV	Jonesboro - Jonesboro North (AECC) 161kV	2209
Hergett JCWL - Trumann West AECC 161kV	Newport - Newport Industrial 161kV	2238
Hoxies AECC - Walnut Ridge 161kV	Independence SES - Moorefield 161kV	2390
Hoxies AECC - Walnut Ridge 161kV	Newport - Newport Industrial 161kV	2435
Hergett JCWL - Trumann West AECC 161kV	Newport AB - Newport Industrial 161kV	2492

Limiting Element	Contingency Element	ATC
MARN TAP (AMRN) - PENOCRK (AMRN) 161kV	PALM TAP (AMRN) - SPENCER (AMRNT) 345kV	2523
Hoxies AECC - Walnut Ridge 161kV	STFRANCISTP (AECI) - GOBKNOB (AECI) 345kV	2525
Trumann - Trumann West AECC 161kV	Dell - Manilla AECC 161kV	2534
Hoxies AECC - Walnut Ridge 161kV	Newport AB - Newport Industrial 161kV	2574
Trumann - Trumann West AECC 161kV	Manilla AECC - Monette 161kV	2634
Hoxies AECC - Walnut Ridge 161kV	Batesville - Moorefield 161kV	2763
Coldwater - Hernando 115kV	Batesville - Moon Lake 230kV	2771
Hoxies AECC - Walnut Ridge 161kV	Cash - Newport AB 161kV	2865
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	2953
Trumann - Trumann West AECC 161kV	Monette - Paragould 161kV	2978
Hergett JCWL - Trumann West AECC 161kV	Cash - Newport AB 161kV	3022
Jonesboro SPA - Jonesboro 161kV	N MADRD (SPA) - KENNETT (SPA) 161kV	3054
Hoxies AECC - Walnut Ridge 161kV	Cash - Jonesboro 161kV	3122
PALMYRA (AMRN) - MARBHD N (AMRN) 138kV	SIOUX (AMRN) - MEPPEN T (AMRN) 138kV	3246
Bee Branch AECC - Quitman 161kV	ANO - Fort Smith 500kV	3248
Hoxies AECC - Walnut Ridge 161kV	GOBKNOB (AECI) COXCRK (AECI) 161kV	3328
Getwell - Hernando 115kV	Base Case	3395
Bee Branch AECC - Quitman 161kV	Hilltop - Dardanelle Dam SPA 161kV	3399
Hoxies AECC - Walnut Ridge 161kV	Batesville - Cushman 161 kV	3424
Hoxies AECC - Walnut Ridge 161kV	GOBKNOB (AECI) 345/161kV transformer	3476
Hergett JCWL - Trumann West AECC 161kV	Cash - Jonesboro 161kV	3490

SOCO

Limiting Element	Contingency Element	ATC
Coughlin (CLECO) - Plaisance 138kV (CLECO)	Cocodrie (CLECO) - Vil Plat (CLECO) 230kV	-5277
Champagne - Plaisance (CLECO) 138kV	Cocodrie (CLECO) - Vil Plat (CLECO) 230kV	-3671
Coughlin (CLECO) - Plaisance 138kV (CLECO)	Vil Plat (CLECO) - West Fork (CLECO) 230kV	-3512
Coughlin (CLECO) - Plaisance 138kV (CLECO)	Cocodrie (CLECO) - Vil Plat (CLECO) 230kV	-2274
Champagne - Plaisance (CLECO) 138kV	Vil Plat (CLECO) - West Fork (CLECO) 230kV	-1906
Horn Lake - Green Brook 115kV Supplemental Upgrade	Getwell 230/115kV transformer	-1857
Horn Lake - Green Brook 115kV	Getwell 230/115kV transformer	-1857
Edwards - Vicksburg East 115kV	Baxter Wilson - Ray Braswell 500kV	-1365
PALMYRA (AMRN) 345/161kV transformer	PALMY TAP (AMRN) - SUB T (MEC) 345kV	-1258
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	Franklin - Grand Gulf 500kV	-757
Champagne - Plaisance (CLECO) 138kV	Cocodrie (CLECO) - Vil Plat (CLECO) 230kV	-700
Coughlin (CLECO) - Plaisance 138kV (CLECO)	Vil Plat (CLECO) - West Fork (CLECO) 230kV	-680
Getwell - Hernando 115kV	Batesville - Moon Lake 230kV	-318
Getwell - Hernando 115kV	Union MS 500/161kV transformer (TVA)	257
Bolton - Edwards 115kV	Baxter Wilson - Ray Braswell 500kV	716
Getwell - Hernando 115kV	PLEASANT HL (TVA) - BENTON MS (TVA) 500kV	737
Getwell - Hernando 115kV	UNION MS (TVA) - PLEASANT HL (TVA) 500kV	738
Getwell - Hernando 115kV	UNION MS (TVA) - WELLSPRNG MS (TVA) 161kV	884
Champagne - Plaisance (CLECO) 138kV	Vil Plat (CLECO) - West Fork (CLECO) 230kV	893

Limiting Element	Contingency Element	ATC
Getwell - Hernando 115kV	Riverbend - Fancy Point 230kV	1025
Getwell - Hernando 115kV	WELLSPRING MS (TVA) - BANKHEAD TP 161kV	1046
Getwell - Hernando 115kV	CALHOUNCITY (TVA) - SW BRUCE TP (TVA) 161kV	1098
Getwell - Hernando 115kV	PONTOTOC MS (TVA) - BANKHEAD TP (TVA) 161kV	1120
Getwell - Hernando 115kV	Twinkle Town - Robinsonville 230kV	1131
Coldwater - Hernando 115kV	Batesville - Moon Lake 230kV	1879
Coughlin (CLECO) - Plaisance 138kV (CLECO)	West Fork - Wells 230kV	1886
Calico Rock - Melborne 161kV	Hollands Bottom - ISES 500kV	2306
Independence SES - Moorefield 161kV	Hollands Bottom - ISES 500kV	2313
Getwell - Hernando 115kV	Base Case	2379
Calico Rock - Melborne 161kV	ANO - Fort Smith 500kV	2571
Independence SES - Moorefield 161kV	ANO - Fort Smith 500kV	2581
Calico Rock - Norfolk 161kV	Hollands Bottom - ISES 500kV	2588
Coldwater - Hernando 115kV	PLEASANT HL (TVA) - BENTON MS (TVA) 500kV	2602
Coldwater - Hernando 115kV	UNION MS (TVA) - PLEASANT HL (TVA) 500kV	2603
Florence - South Jackson 115kV - Supplemental Upgrade	Bogalusa - Adams Creek 500/230kV transformer	2626
Florence - South Jackson 115kV - Supplemental Upgrade	Bogalusa - Franklin 500kV	2626
Trumann - Trumann West AECC 161kV	Paragould South (AECC) - Paragould 161 kV	2657
Coldwater - Hernando 115kV	Union MS 500/161kV transformer (TVA)	2700
Florence - South Jackson 115kV - Supplemental Upgrade	Choctaw MS (TVA) - Clay (TVA) 500kV	2707
Calico Rock - Melborne 161kV	Newport - Newport Industrial 161kV	2769
Independence SES - Moorefield 161kV	Newport - Newport Industrial 161kV	2780
Calico Rock - Melborne 161kV	Newport AB - Newport Industrial 161kV	2865
Independence SES - Moorefield 161kV	Newport AB - Newport Industrial 161kV	2876
Calico Rock - Norfolk 161kV	ANO - Fort Smith 500kV	2968
Calico Rock - Melborne 161kV	STFRANCISTP (AECI) - GOBKNOB (AECI) 345kV	3014
Independence SES - Moorefield 161kV	STFRANCISTP (AECI) - GOBKNOB (AECI) 345kV	3024
Calico Rock - Melborne 161kV	Cash - Newport AB 161kV	3066
Independence SES - Moorefield 161kV	Cash - Newport AB 161kV	3077
Trumann - Trumann West AECC 161kV	Paragould South (AECC) - Jonesboro North (AECC) 161kV	3167
Calico Rock - Melborne 161kV	Sage - Guion 161kV	3194
Calico Rock - Norfolk 161kV	Newport - Newport Industrial 161kV	3195
Calico Rock - Melborne 161kV	Cash - Jonesboro 161kV	3244
Calico Rock - Melborne 161kV	Kosh (AECI) - Coxcrk (AECI) 161kV	3255
Independence SES - Moorefield 161kV	Cash - Jonesboro 161kV	3255
Independence SES - Moorefield 161kV	Kosh (AECI) - Coxcrk (AECI) 161kV	3265
Calico Rock - Melborne 161kV	Newport - Swifton 161kV	3276
Independence SES - Moorefield 161kV	Newport - Swifton 161kV	3286
Calico Rock - Norfolk 161kV	Newport AB - Newport Industrial 161kV	3291
Coldwater - Hernando 115kV	Twinkle Town - Robinsonville 230kV	3300
Independence SES - Moorefield 161kV	WPLAIN (AECI) - KOSH (AECI) 161kV	3365

Limiting Element	Contingency Element	ATC
Coldwater - Senatobia 115kV	Batesville - Moon Lake 230kV	3387
Calico Rock - Norfolk 161kV	STFRANCISTP (AECI) - GOBKNOB (AECI) 345kV	3390
Champagne - Plaisance (CLECO) 138kV	West Fork - Wells 230kV	3460
Brookhaven - Mallalieu (MEPA) 115kV	Bogalusa - Franklin 500kV	3475
Brookhaven - Mallalieu (MEPA) 115kV	Bogalusa - Adams Creek 500/230kV transformer	3475
Calico Rock - Norfolk 161kV	Cash - Newport AB 161kV	3492
Freeport - Twinkle Town 230kV	Freeport - Horn Lake 230kV	3495

TVA

Limiting Element	Contingency Element	ATC
Horn Lake - Green Brook 115kV Supplemental Upgrade	Getwell 230/115kV transformer	-2826
Horn Lake - Green Brook 115kV	Getwell 230/115kV transformer	-2826
Ray Braswell - Baxter Wilson 500kV - Supplemental Upgrade	Franklin - Grand Gulf 500kV	-1362
Getwell - Hernando 115kV	Batesville - Moon Lake 230kV	-471
Getwell - Hernando 115kV	Union MS 500/161kV transformer (TVA)	376
Getwell - Hernando 115kV	PLEASANT HL (TVA) - BENTON MS (TVA) 500kV	1033
Getwell - Hernando 115kV	UNION MS (TVA) - PLEASANT HL (TVA) 500kV	1034
Getwell - Hernando 115kV	UNION MS (TVA) - WELLSPRNG MS (TVA) 161kV	1374
Getwell - Hernando 115kV	Riverbend - Fancy Point 230kV	1553
Getwell - Hernando 115kV	WELLSPRING MS (TVA) - BANKHEAD TP 161kV	1625
Getwell - Hernando 115kV	Twinkle Town - Robinsonville 230kV	1733
Getwell - Hernando 115kV	CALHOUNCITY (TVA) - SW BRUCE TP (TVA) 161kV	1739
Getwell - Hernando 115kV	PONTOTOC MS (TVA) - BANKHEAD TP (TVA) 161kV	1740
Coldwater - Hernando 115kV	Batesville - Moon Lake 230kV	2787
Calico Rock - Melborne 161kV	ANO - Fort Smith 500kV	2861
Calico Rock - Melborne 161kV	Hollands Bottom - ISES 500kV	2862
Independence SES - Moorefield 161kV	Hollands Bottom - ISES 500kV	2870
Independence SES - Moorefield 161kV	ANO - Fort Smith 500kV	2873
Calico Rock - Melborne 161kV	Newport - Newport Industrial 161kV	3056
Independence SES - Moorefield 161kV	Newport - Newport Industrial 161kV	3068
Calico Rock - Melborne 161kV	Newport AB - Newport Industrial 161kV	3162
Independence SES - Moorefield 161kV	Newport AB - Newport Industrial 161kV	3174
Calico Rock - Norfolk 161kV	Hollands Bottom - ISES 500kV	3212
Calico Rock - Norfolk 161kV	ANO - Fort Smith 500kV	3304
Calico Rock - Melborne 161kV	Cash - Newport AB 161kV	3384
Independence SES - Moorefield 161kV	Cash - Newport AB 161kV	3396
Calico Rock - Melborne 161kV	STFRANCISTP (AECI) - GOBKNOB (AECI) 345kV	3438
Independence SES - Moorefield 161kV	STFRANCISTP (AECI) - GOBKNOB (AECI) 345kV	3449

APPENDIX A: Approved Projects and Transactions in Study Mode

Year	Approved Future Projects
2010 - 2012 EAI	10CP 2009S EAI Blythville POD - AECC Rev 1.idv 10CP 2009S EAI Conway West - Donaghey 161 kV Line Reconductor.idv 10CP 2009S EAI Gillette 115 kV Substation.idv 10CP 2009S EAI Hamlet 161 kV Substation Rev 1.idv 10CP 2009S EAI Sarepta Project Rev 0.idv 10CP 2009W EAI Harrison East to Everton Road 161 kV Line Rev 1.idv 10CP 2010S EAI AECC Avilla POD Rev 2.idv 10CP 2010S EAI Coffeetown POD - AECC Rev 0.idv 10CP 2010S EAI Melbourn - Sage 161 kV Line Upgrade Line Rev 0.idv 10CP 2010S EAI Parkin to Twist 161 kV Line Trap Rev 0.idv 10CP 2010S EAI Transmission Service (OG&E) Rev 0.idv 10CP 2010S EAI Warren East 115 kV Substation Install Capacitor Bank Rev 1.idv 10CP 2010Z EAI Beebe 115 kV Substation - Install Capacitor Bank Rev 0.idv 10CP 2010Z EAI Donaghey - Conway South 161 kV Rev 1.idv 10CP 2010Z EAI SMEPA (Plum Point) Rev 1.idv 10CP 2011S EAI Osage Creek-Grandview New Line Rev 2.idv 10CP 2012S EAI Albright (HS Hamilton) Substation 2014 Load.idv 10CP 2012S EAI Cofer Road (Crawford) Substation 2014 Load Rev 0.idv 10CP 2011W EAI Transmission Service (Aquila) Rev 0.idv 10CP 2012S EAI Westar Transmission Service Rev 0.idv rovements_PhaseII.idv
2010 - 2014 EGSL	10CP 2009S EGSL Acadia 138 kV Substation capbank.idv 10CP 2010Z EGSL Addis to Cajun 230kV line upgrade.idv 10CP 2011S EGSL Acadiana Area Improvement Project Phase 1 Rev 1.idv 10CP 2011S EGSL Alchem - Monochem 138 kV line upgrade.idv 10CP 2011S EGSL Construct New Youngsville 138 kV Sub (run AAIP 1 first).idv 10CP 2012S EGSL Acadiana Area Improvement Project Phase 2 (run AAIP 1 first).idv 10CP 2012S EGSL Construct new Nelson to Moss Bluff 230 kV line.idv 10CP 2012S EGSL Tejac to Marydale Upgrade 69 kV line.idv 10CP 2012S EGSL ELL Loblolly-Hammond Build 230kV Line.idv 10CP 2014S Gulf Oxygen Load Correction.idv
2010 - 2013 ELL	10CP 2009W ELLN Delhi 115 kV Substation - Add Cap Bank.idv 10CP 2010W ELLN Delhi 115 kV Substation - Add series reactor.idv 10CP 2010Z ELLS Bogalusa to Adams Creek 230 kV No 2.idv 10CP 2010Z ELLS Snakefarm to Kenner 115 kV line upgrade.idv 10CP 2011S ELLN Sarepta Project.idv 10CP 2012S ELLS Bayou LaBoutte Construct new 500-230 kV Substation.idv 10CP 2012 ELLN Ouachita Project Set 2 Run Second.idv 10CP 2013S ELLN Ouachita Projects Set 1 Run First.idv
2010 - 2012 EMI	10CP 2009W EMI Grenada-Winona-Greenwood Area Improvement Phase I.idv 10CP 2010S EMI Grand Gulf Uprate Project.idv 10CP 2010S EMI Indianola-Greenwood 115 kV Line Upgrade.idv 10CP 2010S EMI Magee 115 kV substation - Replace switches.idv 10CP 2010Z EMI TVA Affected System Upgrades.idv 10CP 2011S EMI Church Road Substation (2014 load).idv 10CP 2011S EMI Sunnybrook-only-2011.idv 10CP 2011S EMI Waterways - Vicksburg East 115 kV Line Upgrade.idv 10CP 2011Z EMI Florence - Florence SS - Star 115 kV Line Upgrade.idv 10CP 2011Z EMI Grand Gulf Uprate add vars.idv 10CP 2012S EMI Grenada-Winona-Greenwood Area Improvement Phase II.idv 10CP 2012S EMI Ridgeland-Madison Reliability Improvement (Sunnybrook-2014).idv

Year	Approved Future Projects
2010 - 2012 ETI	10CP 2009F ETI Gulfway 230kV Substation.idv 10CP 2009S ETI Beaumont 69 kV Improvement Plan Option 2.idv 10CP 2009S ETI Newton Bulk Replace Re-tap CT to Increase Rating on Holly Springs Line.idv 10CP 2009S ETI Porter-Tamina Replace Breaker & Switches.idv 10CP 2009W ETI Fawil Upgrade 138-69 kV Auto.idv 10CP 2010S ETI Temco and Shepherd 138kV Substations.idv 10CP 2010S ETI Western Region Reliability Improvement Plan Phase 3 Interim (Part 1).idv 10CP 2010W ETI Western Region Reliability Improvement Plan Phase 3 Interim (Part 3).idv 10CP 2011S ETI Grand Gulf Uprate Project.idv 10CP 2011S ETI Western Region Reliability Improvement Plan Phase 3 Interim (Part 2).idv 10CP 2011W ETI Tamina to Cedar Hill 138 kV line.idv