



Southeastern Regional Transmission Planning Process

Preliminary 10 Year Expansion Plan



June 25, 2008



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West Region Projects

Need Date: 2008

Project Name: **Miller Bayou 230/115 kV Autotransformer & Holley to East Bay 115 kV T.L.**

Description: Install Miller Bayou 230/115 kV Bank and construct a new Holley - East Bay 115 kV T.L.

Supporting Statement: For the loss of the Wright 230/115 kV #2 Bank and Smith #3 off the Wright 230/115 kV Bank #1 exceed its thermal limit starting 2008

Need Date: 2008

Project Name: **Sinai Cemetery 230/115 kV Autotransformer**

Description: Install a 230/115 kV 400 MVA Autotransformer at Sinai Cemetery; 3000A 115 kV ring bus; terminate the 115 kV lines currently connected to Scholz into the 115 kV ring bus at Sinai.

Supporting Statement: Reduces the number of operating steps for thermal loadings for contingencies in the area and increases system reliability.

Need Date: 2009

Project Name: **East Pelham 230/115 kV TS and associated transmission improvements**

Description: Construct a 400 MVA 230/115 kV substation at the new East Pelham site, Loop the Gaston - Bessemer 230 kV TL into East Pelham, Upgrade the Gaston - East Pelham 230 kV line section to 1000 C, construct a 115 kV ring bus in the new Alabaster 115 kV Switching Station site and loop the Lay Dam - Bessemer 115 kV TL into the Alabaster SS,5. Construct a new 115 kV TL between East Pelham and Alabaster SS, construct a 115 kV ring bus in the new Westover 115 kV Switching Station site and loop the Leeds TS - Lay Dam 115 kV TL into the Westover SS

Supporting Statement: There continues to be numerous contingencies which cause overloads in the South Bessemer - Calera - Lay Dam - Pelham - Helena - South Jefferson and Magella area. With the addition of the new substations at Ballentrae, Greystone and Chelsea Park DS, more voltage stress is placed on the Leeds to Lay Dam 115 kV line until the autotransformer comes into service at East Pelham TS in 2009.

Need Date: 2009

Project Name: **Laurel East - Queensburg 115 kV line**

Description: Reconductor 1.3 miles to 795 ACSR. 3.6 miles is already 795 ACSR

Supporting Statement: Loss of Laurel E. - Laurel N. 115kV line overloads this line. New Denbury-Heidelberg load makes existing Operating Procedure ineffective

Need Date: 2009

Project Name: **East Biloxi 115 kV Project**

Description: Tap the Percy Street to Keesler 115 kV T.L. and loop line to new East Biloxi substation. Once service is installed, some of the load from the Percy Street substation will shift to the new substation.

West Region Projects

Supporting Statement: Project driven by exceeding existing capacity at Percy St substation (Planned Capacity Increase)

Need Date: 2009 - 2010 - 2011

Project Name: **Carriere SW 230/115 kV Project**

Description: Purchase ROW for entire line and continue Kiln-Necaise 115 kV line up to Salem for Phase 2 ('09). Install 400 MVA rated autobank at Logtown and move Logtown autobank up to Carriere SW ('10). Construct new 230/115 kV substation at Carriere SW and complete 230 kV line from Kiln to Carriere SW Phase 3 of project and upgrade Picayune 115 kV substation ('11).

Supporting Statement: Loss of Kiln to Nicholson Tap results in overload on Necaise to Spence and loss of Necaise-Spence 115 kV line results in overload of Kiln-Nicholson Tap 115 kV line.

Need Date: 2009

Project Name: **East Prattville – Prattmont Tap 115 kV TL**

Description: Reconductor East Prattville – Prattmont Tap 115 kV TL, 0.047 mi of 397 18/1 ACSR with 795 26/7 ACSR @ 100°C

Supporting Statement: On the County Line Rd – Hunter SS 115kV TL there is a 0.047mi segment of 397 18/1 ACSR between the East Prattville DS and the tap point to Prattmont DS, Prattville SS and South Prattville DS. This segment off 115 kV TL overloads in 2010 with the GE Burkville Co-Gen unit offline and no lines out

Need Date: 2009

Project Name: **Lullwater Tap – Long Beach 115 kV T.L.**

Description: Reconductor the Lullwater Tap - Long Beach 115 kV T.L. with 1033 ACSS

Supporting Statement: For the loss of the Greenwood - Shipyard 115 kV T.L. and Smith #3 offline, the Lullwater Tap - Long Beach 115 kV T.L. exceeds its thermal limit starting in 2009.

Need Date: 2009

Project Name: **Lullwater - 115 kV 30 MVAR Capacitor**

Description: Install 2 - 15 MVAR 115 kV capacitor banks at Lullwater prior to 2009 summer.

Supporting Statement: For the loss of the Laguna Beach - Lullwater Tap 115 kV T.L. and Smith #1 offline the Lullwater and Long Beach 115 kV bus voltages violate the voltage drop criteria.

Need Date: 2010

Project Name: **Smith – Laguna Beach 115 kV T.L.**

Description: Convert the Smith - Laguna Beach 115 kV T.L. to 230 kV operation utilizing 1351 ACSS conductor

Supporting Statement: For the loss of the Laguna Beach 230/115 kV bank and Crist #7 offline, the Smith - Laguna Beach 115 kV T.L. exceeds its thermal limit starting in 2010.

Need Date: 2010

West Region Projects

Project Name: **Smith 230/115 kV Autotransformer #2**

Description: Install a 2nd 230/115 kV bank at Smith

Supporting Statement: For the loss of Smith #1 230/115 kv bank the Laguna Beach 230/115 kV bank and the Lullwater Tap - Long Beach 115 kV T.L. exceed their thermal limits starting in 2010

Need Date: 2010

Project Name: **Brentwood 230/115 kV Autotransformer #2**

Description: Install a 2nd Brentwood 230/115 kV 392 MVA bank

Supporting Statement: For the loss of the Bellview 230/115 kV bank and Crist #6 offline, the Brentwood #1 230/115 kV bank exceeds its thermal limit starting in 2010

Need Date: 2010

Project Name: **Brentwood – Fairfield Double Circuit Rebuild**

Description: Construct a new Fairfield S.S. which will loop in the Brentwood - Bayou Chico 115

Supporting Statement: For the loss of the Bayou Marcus 115 kV T.L. and all Scenic Hills load on the Crist - Brentwood 115 kV T.L. the Brentwood - Bayou Chico 115 kV T.L. exceeds its thermal limit starting in 2010.

Need Date: 2011

Project Name: **Watson - Three River Road 115 kV line**

Description: Upgrade 115 kV line between old O'Neal Road service point and Three Rivers Road tap to 100°C

Supporting Statement: Multiple contingencies overload this circuit. New load projections make existing operating guides ineffective.

Need Date: 2011

Project Name: **Landon - Dedeaux 115 kV line**

Description: Reconductor line with 795 ACSR at 100°C

Supporting Statement: Loss of Bayou LaCroix to Waveland results in voltage drop to <.90 pu (103.5 kV) may be deferred depending on recovery load growth along coast.

Need Date: 2011

Project Name: **North Theodore – Dawes DS Tap 115kV TL Reconductor**

Description: Reconductor 9.9 mile North Theodore – Dawes Tap 115kV TL. Replace the 397.5 18/1 ACSR @75°C with 795 26/7 ACSS @160°C.

Supporting Statement: The loss of Big Creek – Snow Road 115kV T.L. results in the loading on the North Theodore - Dawes DS Tap to exceed 100 % of its thermal rating, starting in 2011

Need Date: 2011

West Region Projects

Project Name: **New Holt T.S. – Tuscaloosa T.S. 230kV T.L.**

Description: Construct 9.54 miles of new 115 kV TL from Holt TS to Tuscaloosa TS built at 230 kV specs operated at 115 kV with 1351 54/19 ACSR @ 100°C (Rate B = 301 MVA / 1512 A)

Supporting Statement: Conversion to 230kV operation of the new Holt T.S. – Tuscaloosa T.S. TL that is built at 230kV specs and initially operated at 115kV. This 230kV conversion was proposed to relieve the loadings on several lines and increase the autobank capacity in the Tuscaloosa area.

Need Date: 2012

Project Name: **Hattiesburg SW-28th Ave-West Hattiesburg 115kV line**

Description: Reconductor line with 795 ACSR at 100°C

Supporting Statement: Loss of Hattiesburg SW to West 7th Street overloads this line. Existing operating guides become ineffective in 2012.

Need Date: 2012

Project Name: **Wiggins SS - Wiggins 5th Ave 115 kV line**

Description: Reconductor line with 795 ACSR at 100°C

Supporting Statement: Gulfport Landon - Hwy 53 115 kV line segment overloads this line segment when serving load radially from Wiggins. Operating procedure available.

Need Date: 2012

Project Name: **Gulfport Landon-CEPA Saucier 115 kV line**

Description: Reconductor line with 795 ACSR at 100°C

Supporting Statement: Loss of Watson to Hurricane Creek with Watson Gas Units full overloads this line. Operating procedure available.

Need Date: 2012

Project Name: **Cumbest Bluff Capacitor**

Description: Add 30 MVAR capacitor bank at Cumbest Bluff

Supporting Statement: Loss of the Tanner Williams-Big Creek 115 kV line results in low voltages in all substations being served radially from Wade.

Need Date: 2012 - Delay from 2011

Project Name: **McIntosh – Fulton 115kV T.L. Upgrade**

Description: Upgrade approximately 42.75 miles of existing 397 ACSR 115 kV TL from McIntosh TS to Fulton TS for 100 degree Centigrade operation.

Supporting Statement: The upgrade is proposed to address thermal overloads on the McIntosh – Fulton 115kV TL (42.75 miles of 397.5 26/7 ACSR @ 75°C). The overloads are due to the loss of the Greene County 230/115kV Autobank with Greene County #1 off.

Need Date: 2012 - Advance from 2013

West Region Projects

Project Name: **Barry – Chickasaw 230kV T.L. Reconductor**

Description: Reconductor the 19.18 mile of line from Barry S.P. to Chickasaw TS. Replace 17.14 miles of bundle (2) 795 45/7 ACSR with bundle (2) 1033.5 ACSS and add a second 1351.5 ACSS to the existing 1.49 miles of 1351.5 ACSS.

Supporting Statement: The loss of the Barry – Crist 230 kV TL with Crist #7 unit off results in the subject line exceeding its thermal limit starting in 2012.

Need Date: 2012 - advanced from 2013

Project Name: **Construct North Brewton TS – North Brewton DS 115kV TL**

Description: Construct a North Brewton TS – North Brewton DS 115kV TL, approx. 6 miles of 795 ACSS.

Supporting Statement: The loss of the Barry – Stockton Tap 115kV TL, with Crist #7 off, results in the loading on the North Brewton – Brewton Tap 115kV TL to exceed 100% of its thermal rating, starting in 2012.

Need Date: 2012

Project Name: **Bus Tie Breakers at Silverhill T.S.**

Description: Install two (2) 115kV breakers in series and retire existing breaker #600 at Silverhill T.S.

Supporting Statement: A failure of the bus tie breaker (#600) at Silverhill T.S. can cause significant load drops.

Need Date: 2012

Project Name: **Molino - Champion 115 kV T.L.**

Description: reconductor the Molina - Champion 115 kV T.L. with 1033 ACSR k

Supporting Statement: For the loss of the Barry S.P. - Crist S.P. 230 kV T.L. and Crist #7 off, the Molino - Champion 115 kV T.L. exceeds it thermal limit starting in 2012.

Need Date: 2013 - Delay from 2011

Project Name: **Spanish Fort - Belforest 115kV T.L. Reconductor**

Description: Reconductor approximately 7.01 miles of existing 795 ACSR 115kV TL from Riviera Utilities (Spanish Fort) tap to Riviera Utilities (Belforest) tap in the Blakeley Island – Silverhill 115kV TL with 1033 54/7 ACSS conductor at 160°C

Supporting Statement: The reconductor of Spanish Fort – Belforest 115kV T.L. was proposed due to the loss of either Chickasaw – Silverhill 230kV T.L. with Crist #7 off, resulting in overloads on subject line.

Need Date: 2013

Project Name: **Silverhill – Magnolia 115kV T.L. Reconductor**

Description: Reconductor approx. 12.36 miles of existing 795 ACSR 115kV TL from Silverhill to Bladwin County EMC (Magnolia) Substation with 1033 ACSS conductor rated at 160 degree Centigrade operation on the Silverhill – Foley B 115kV TL

West Region Projects

Supporting Statement: The loss of the Silverhill – Riviera Utilities (Southwest Foley) 115kV TL and Crist #7 off results in the subject line exceeding its thermal limit starting in 2013

Need Date: 2013

Project Name: **Construct Ellicott – IPSCO 230kV T.L.**

Description: Construct 5.6 miles of new 230kV TL from Ellicott T.S. to Salco S.S. (IPSCO) with 1351.5 54/19 ACSS conductors operated at 160°C.

Supporting Statement: The loss of the Barry – Chickasaw 230kV TL with Daniel #1 off, results in the loading on the Barry - IPSCO 230kV T.L. exceeding its thermal limit starting in 2013

Need Date: 2013

Project Name: **Schillinger Rd. D.S.- Lott Rd. D.S. Tap 115 kV T.L**

Description: Construct Schillinger Rd. D.S.- Lott Rd. D.S. Tap 115 kV T.L., 2.1 miles of 795 ACSR

Supporting Statement: Network improvement

Need Date: 2013

Project Name: **North Mobile T.S. – Springhill D.S.115 kV T.L.**

Description: Reconductoring the Wolf Ridge Tap-Springhill portion (1.75 miles, 556 AAC & 0.08

Supporting Statement: Network improvement

Need Date: 2013

Project Name: **Lay Dam – Mitchell Dam 115kV TL**

Description: ACSR at 100°C

Supporting Statement: Lay Dam and Mitchell Dam are connected by two parallel 115kV transmission lines. These lines overload for the loss of the other line and Gaston #5 off or for the loss of the Snowden – Autaugaville 500kV TL starting in 2013

Need Date: 2013

Project Name: **Goulding – Oakfield 115 kV T.L.**

Description: Reconductor the Goulding - Oakfield 115 kV T.L. with 1033 ACSS and replace 600A

Supporting Statement: For the loss of the Crist - Scenic Hills #1 115 kV T.L. and Crist #7 off, the goulding - Oakfield 115 kV T.L. exceeds its thermal limit starting in 2013

Need Date: 2013

Project Name: **Brentwood - Pine Forest 115 kV T.L.**

Description: Reconductor the Brentwood - Pine Forest 115 kV T.L. with 1033 ACSR

Supporting Statement: For the loss of the Byrneville - Flomaton 115 kV T.L. and Crist #7 offline, the Brentwood - Pine Forest 115 kV T.L. exceeds its thermal limit starting in 2013.

Need Date: 2014 - advance from 2015

West Region Projects

Project Name: **Brewton Tap – Flomaton 115kV TL**

Description: Upgrade the Brewton Tap – Flomaton 115kV TL to 125°C operation.

Supporting Statement: The loss of the Barry – Stockton Tap 115kV TL, with Crist #7 off, results in the loading on the Brewton Tap - Flomaton 115kV TL to exceed 100% of its thermal rating ataring in 2014

Need Date: 2014

Project Name: **Upgrade Gaston – East Pelham 230 kV TL to 100° C**

Description: Gaston – East Pelham 230 kV TL upgrade to 100° C

Supporting Statement: Loss of Gaston – North Helena 230 kV TL at summer peak conditions with Gorgas 10 off. The Gaston – East Pelham 230 kV TL exceeds its thermal limit starting in 2014.

Need Date: 2014

Project Name: **Mobile Area 115 kV Networking**

Description: Mobile Area 115 kV Networking

Supporting Statement: Network improvement

Need Date: 2014

Project Name: **Callaway – Gaskin 115 kV T.L.**

Description: Reconductor the Callaway Gaskin 115 kV T.L.

Supporting Statement: For the loss of the Bay Springs Tap - Dale County 115 kV T.L. And Sholz #1 offline, the Callaway - Gaskin 115 kV T.L. exceeds its thermal limit starting in 2014.

Need Date: 2015

Project Name: **Bellwood – Mount Meigs 115 kV TL**

Description: Survey, Acquire and Construct Bellwood – Mount Meigs 115 kV TL 4.5 miles with

Supporting Statement: During summer peak conditions with Farley Unit 1 off, the loss of the Madison Park – Auburn University Montgomery Tap 115 kV TL results in a violation of the voltage drop criteria at Simcala by summer of 2011. Other buses on the Madison Park –Thurlow Dam 115 kV TL meet voltage drop criteria only marginally by 2015.

Need Date: 2015

Project Name: **Bellwood – Mount Meigs 115 kV TL**

Description: Survey, Acquire and Construct Bellwood – Mount Meigs 115 kV TL 4.5 miles with

Supporting Statement: During summer peak conditions with Farley Unit 1 off, the loss of the Madison Park – Auburn University Montgomery Tap 115 kV TL results in a violation of the voltage drop criteria at Simcala by summer of 2011. Other buses on the Madison Park –Thurlow Dam 115 kV TL meet voltage drop criteria only marginally by 2015.

West Region Projects

Need Date: 2015 - Delay from 2013

Project Name: **Barnwell Tap – Barnwell 115kV T.L. Reconductor**

Description: Reconductor approx. 9.65 miles of existing 4/0 ACSR 115 kV TL from the Baldwin

Supporting Statement: Loss of the Silverhill – Fish River 115kV TL with Crist #7 off results in the subject line

Need Date: 2016

Project Name: **IPSCO – Kushla S.S. 230kV TL Upgrade**

Description: Upgrade to 125°C operation a 13.26 mile section of the Barry S.P. – Kushla S.S.

Supporting Statement: Following the construction of a new Ellicott T.S. – IPSCO 230kV TL, the loading on

Need Date: 2016 - Advance from 2018

Project Name: **Columbus First Ave – Phenix City DS**

Description: Reconductor Columbus First Ave – Phenix City DS 115 kV T.L. with 795 26/7 ACSR

Supporting Statement: The loss of the Fuller Rd - Goat Rock 230 kV and Harris #1 off, results in the Columbus First Ave – Phenix City DS 115 kV T.L. exceeding 100% of its thermal limit starting 2016.

Need Date: 2016 - advance from 2017

Project Name: **Pinckard – Ft. Rucker (North) 115kV TL**

Description: Reconductor 0.32mi of Pinckard – Ft. Rucker (North) 115 kV T.L. with 795 26/7

Supporting Statement: The loss of the Pinckard–Ft Rucker tap (South) 115kV TL and Crist #7 off results in the Pinckard – Ft. Rucker tap (North) 115kV TL exceeding 100% of its thermal limits starting in 2016

Need Date: 2016

Project Name: **East Pelham - Chace Lake 115 kV Transmission Line**

Description: Construct the East Pelham - Chace Lake 115 kV TL

Supporting Statement: The loss of South Jefferson – Bluelake Tap 115 kV TL produces a loading on the North Helena – Valleydale 34 115 kV TL over 100% of its thermal rating with Gaston 5 off.

Need Date: 2016

Project Name: **Fulton – Thomasville 115 kV T.L. Upgrade**

Description: Upgrade the Fulton T.S. – Thomasville D.S. 115 kV T.L. (9.08 miles of 397 26/7

Supporting Statement: With the Greene County 230/115 kV autobank open and Greene County #1 off, the Fulton T.S.-Thomasville D.S. 115 kV T.L. loads to 631 amps (101%) in 2016

Need Date: 2017

Project Name: **Chickasaw – Blakeley Island 115 kV T.L. Improvements**

Description: Upgrade the 4 terminals on this transmission line to 2000 A. Reconductor of 0.57

West Region Projects

Supporting Statement: For an outage of the One Mile Tap-Chickasawbogue 115 kV T.L. with Crist #7 off, the Chickasaw-Kimberly Clark 115 kV T.L. exceeds its thermal limit starting in 2017

Need Date: 2017

Project Name: **Big Creek – Tanner Williams 115kV TL Upgrade**

Description: Upgrade 3.46 miles of 266 26/7 ACSR @ 100°C in the Big Creek – Tanner Williams 115 kV T.L. to 125°C operation.

Supporting Statement: For the loss of the Daniel 500/230 kV autobank during shoulder conditions, the Big Creek – Tanner Williams 115 kV T.L. overloads beginning in 2012

Need Date: 2017

Project Name: **Bellamy S.S. – Sonat Tap 115kV T.L. Upgrade to 100°C**

Description: Bellamy S.S. – Sonat Tap 115kV T.L. upgrade to 100°C

Supporting Statement: Upgrades the Bellamy S.S. – Sonat Tap 115kV T.L. to 100°C The subject line exceeds its thermal limit starting in 2017 by an outage of the Greene County – Meridian NE 230kV T.L. and Watson #5 off.

Need Date: 2018

Project Name: **Ellicott T.S. to Georgetown D.S. Upgrade**

Description: Upgrade to 125°C operation an 18.9 mile section of the Barry S.P. – Big Creek T.S. 230kV TL from Ellicott T.S. to Georgetown D.S.

Supporting Statement: Following the construction of a new Ellicott T.S. – IPSCO 230kV TL, the loading on

Need Date: 2018

Project Name: **Leeds to Westbury 115 kV TL Upgrade**

Description: Upgrade Leeds – Westbury 115 kV TL to 100° C operation

Supporting Statement: The recommendation for the upgrade of the Leeds to Westbury 115 kV TL is driven by the loss of the Miller 500/230 kV autotransformer with a unit off, and the loss of Leeds to South Jefferson 230 kV TL with a unit off

Need Date: 2018

Project Name: **North Helena 230/115 kV Autotransformers Upgrade to 470 MVA**

Description: Upgrade the North Helena 230/115 kV autos to 470 MVA

Supporting Statement: This upgrade calls for the replacement of two low side switches on the two 230/115 kV autotransformers with 3000 amp 115 kV switches, and replace the double 1590 AAC low side jumpers with double 2500 AAC jumpers to provide the 3000 amp rating. This will increase the maximum loading on the autotransformers from 398 MVA to 470 MVA.

Need Date: 2018

Project Name: **Miller - Boyles 230 kV TL Upgrade to 125° C Operation**

West Region Projects

Description:	Upgrade the Miller - Boyles 230 kV TL to 125 ^o C operation
Supporting Statement:	For the loss of the Miller - Clay 500 kV TL at summer peak conditions with a unit off, the Miller - Boyles 230 kV TL will reach 92% of thermal capacity by the summer of 2016. By 2017, the loading is 93% of thermal capacity.
Need Date:	2018
Project Name:	Magella - Oxmoor 115 kV TL Upgrade
Description:	Magella – Oxmoor 115 kV TL reconductor
Supporting Statement:	With the outage of either or both the Leeds – South Jefferson 230 kV TL or the South Jefferson 230/115 kV autotransformer at summer peak conditions with a unit off, the expected loading will be 98% of rating.
Need Date:	2018
Project Name:	Valleydale #1 – Chace Lake 115 kV Transmission Line
Description:	Upgrade the Valleydale #1 – Chace Lake 115 kV TL to 125 ^o C
Supporting Statement:	The loss of North Helena – Valleydale 34 115 kV TL produces a loading on the South Jefferson – Bluelake Tap 115 kV TL of 1060 amps (100% of 1063 amps) during 2016 Summer Peak Conditions with Gaston 5 off
Need Date:	2018
Project Name:	Columbus First Ave – Phenix City DS 115kV TL
Description:	Reconductor Columbus First Ave – Phenix City DS with 795 26/7 ACSR
Supporting Statement:	Overloads of the Columbus First Ave – Phenix City DS 115 kV TL have been discovered in past studies under the loss of the Fuller Rd - Goat Rock 230 kV during shoulder conditions in 2016 and beyond.
Need Date:	2018
Project Name:	Livingston – Mannington Wood Floors Tap 115kV T.L
Description:	Livingston – Mannington Wood Floors Tap 115kV T.L. reconductor with 795 ACSR
Supporting Statement:	The thermal issues on this line are due to the loss of the Demopolis – CEMEX 115kV T.L. with the Watson #5 offline.
Need Date:	2018
Project Name:	South Tuscaloosa – Stokes 115kV T.L.
Description:	South Tuscaloosa – Stokes 115kV T.L. reconductor with 1033 ACSS
Supporting Statement:	Reconductor of the South Tuscaloosa – Stokes 115kV T.L. with 1033 45/7 ACSS. This was proposed to address the thermal loading caused by the loss of the Greene County – Birdeye 115kV T.L. with Gorgas 10 offline.
Need Date:	2019 - delay from 2017
Project Name:	Westgate – Rucker Blvd 115 kV T.L.
Description:	Upgrade 2.4mi of the Westgate – Rucker Blvd for 100 ^o C operation

West Region Projects

Supporting Statement: The loss of the Pinckard–Ft Rucker (South) 115kV TL and Crist #7 off, results in the Westgate – Rucker Blvd 115 kV T.L. exceeding 100% of its thermal limit starting in 2019.

POWERSOUTH

Need Date: 2009

Project Name: **CAES 115kV Substation Conversion**

Description: Convert the existing CAES 115kV ring bus to a 12 terminal breaker-n-half bus. Re-route existing generator taps and transmission lines into new terminating structures. Upgrade buswork and breakers/switches to 2000 amp.

Supporting Statement: This work is to allow the connection of 2 additional CT's (McIntosh 4&5 360 MW summer total) to be connected to the 115kV transmission system. These units were previously shown at the Gantt CT farm as future units.

Need Date: 2010

Project Name: **Clio Area Project**

Description: Survey, Acquire and Construct Judson-Baker Hill Jct 115 kV TL 14.0 miles with 795 26/7 ACSR. Thermal uprate the Brundidge-Clio 115kV line to 151 MVA.

Supporting Statement: Overloads are seen in Contract 2008 cases under several contingencies including Judson Tap-WF George out. This is a project to uprate aging lines to handle more loading under contingency conditions thereby increasing the reliability of the bulk electric system.

Need Date: 2010

Project Name: **Baldwin County Project**

Description: Convert existing Elsanor-Miflin Jct. to dual circuit 115kV with 795 ACSR/AW (11 miles). Survey, acquire, construct Miflin Jct.-Florida Ave 115kV line 795 ACSR/AW. Construct Miflin Sw. Station. Thermal uprage of Miflin Jct-Wolf Bay. 30 MVAR Cap banks at Florida Ave and Gulf shores.

Supporting Statement: High load growth area (Orange Bch) being served radially. This is a project to strengthen the system to respond to single contingency conditions.

Need Date: 2011

Project Name: **Generation Plans Next 10 Years**

Description: 360/448 MW (summer/winter) peaking self build at McIntosh

Supporting Statement: See CAES substation conversion description

Need Date: 2012

Project Name: **South Walton Co. Study**

Description: Joint study between PowerSouth and Gulf and So. Co. Transmission.

West Region Projects

Supporting Statement: This is a project to increase the strength of the bulk electric system in the South Walton County area of PowerSouth and Gulf's system.

SMEPA

Need Date: 2009

Project Name: **Cole Road Transformer Replacement**

Description: Replace 2 Cole Road 161/69kV, 50MVA transformers with 100MVA units

Supporting Statement: Transformer overloads during the outage of the adjacent Unit, High load growth area

Need Date: 2010

Project Name: **Polkville 161kV Source**

Description: Tap 161kV Line 172 (Homewood to Magee) with the White Oak Switching Station, Construct 6.75 miles new 161kV Transmission Line, Build 161/69kV Polkville Substation

Supporting Statement: Outage of 69kV Line 94 (Homewood to Morton) causes 69kV overloads and under voltages, Addition of Industrial load on loop has added to problems and reduced available 69kV transmission capacity

Need Date: 2010

Project Name: **Purvis Bulk Transformer Replacement**

Description: Install 2-400MVA, 230/161kV Transformers, Relocate 168MVA units to Waynesboro

Supporting Statement: Transformers limit export capability with MPCo during outage of one unit, additional export capability needed in 2011

Need Date: 2011

Project Name: **Silver Creek 161/115kV Interconnection**

Description: Tap 161kV Line 168A (Miss Hub to Columbia) with Jeff Davis SS, Build 14.5 miles 161kV Transmission line (7.0 double circuit provisions) from Jeff Davis SS to Prentiss to Silve Creek, Build 115/161kV Substation at Silver Creek Generation Station (Use two existing 150MVA units),

Supporting Statement: Loss of SMEPA/Entergy Magee Interface results is 0MW of transfer capability with Entergy necessary to serve load in Entergy Area, Adds additional 300MVA interconnection with Entergy

Need Date: 2012

Project Name: **South Hoy 161kV Source**

West Region Projects

Description: Build South Hoy 161/69kV Substation, Build 24 miles new 161kV Transmission from Plant Moselle to South Hoy

Supporting Statement: Outage of 69kV Line 15 (Moselle to West Laurel) results in 69kV under voltages

Need Date: 2013

Project Name: **Prentiss 161/69kV Substation**

Description: Tap Silver Creek Interconnection at Prentiss and build Prentiss 161/69kV Substation

Supporting Statement: Outage of 69kV Line 56 (Gwinville to Gwinville Junction) results in 69kV under voltages, Project postpones several 69kV Improvement projects by removing flow on 69kV Transmission system between Columbia and Prentiss

Need Date: 2014

Project Name: **North West Perry 161/69kV Substation**

Description: Tap 161kV Line 162 (Moselle to Hintonville) at intersection with Ellisville to Macedonia 69kV line, and Build NW Perry 161/69kV Substation

Supporting Statement: Outage of 69kV Line 25 (Moselle to Petal) results in 69kV under voltages and overloads, high load growth area

Need Date: 2016

Project Name: **Homewood to Missionary 161kV Line**

Description: Add 161kV circuit to 18.42 miles (Homewood to Bay Springs) of existing double circuit provisioned 69kV lines, Construct 19.37 miles of new 161kV Transmission from Bay Springs to Missionary, Add additional bay to Homewood and Missionary Substations

Supporting Statement: Adds second 161kV source to Homewood and Missionary, Provides opportunity to inject Sylvarena 69kV generation onto 161kV grid with minimal improvements, Removes loading from Homewood and Missionary 161/69kV Transformers

Need Date: 2017

Project Name: **East Waynesboro 230/69kV Substation**

Description: Tap 230kV PowerSouth Interconnection Line 230 (Waynesboro to Chatom) and Build E.Waynesboro 230/69kV substation, Tap 69kV Line 23 (Clara to Buckatunna) and loop into new substation, Rebuild and Update several 69kV transmission lines in area

Supporting Statement: 69kV contingencies in area cause 69kV under voltages and overloads

Need Date: 2018

Project Name: **Station Creek Transformer Replacement**

West Region Projects

Description: Replace 161/69kV, 50MVA transformer with 100MVA unit

Supporting Statement: 69kV contingencies result in overload of single unit, high VAR loading on transformer

Need Date: 2018

Project Name: **Lumberton-Wiggins-Benndale 161kV Conversion Project**

Description: Rebuild 69kV transmission Lines 37 (Wiggins to Big Level), 37C (Wiggins to Stillmore), 71A (Benndale GT to Benndale) at 161kV; Convert Lumberton-Wiggins-Benndale loop to 161kV operation and upgrade delivery points to 161kV along loop

Supporting Statement: 69kV outages along Lumberton to Benndale loop result in low voltage and line overloads, Flow on Lumberton transformers reduced postponing improvement, Project is a 4 Stage process (Years 2009, 2014, 2015, 2018) with staged improvements based on contingency evaluation of system

EAST REGION PROJECTS

Need Date: 2008

Project Name: **MEAG AUSTIN DRIVE - KLONDIKE 230 KV LINE RECONDUCTOR**

Description: (MEAG) : Reconductor the Austin Drive - Snapfinger 230 kV line (2.7 miles) with 1351 ACSR sagged for 100 C operation.

Supporting Statement: Loss of the Klondike - Norcross 500-kV line, (at shoulder load periods with Bowen #4 off), loads the Austin Drive - Snapfinger section of the Austin Dr.- Klondike 230-kV line to 110% of its maximum rating. Also, the same line contingency, in the "contract" case w/Bowen #4 off, loads the Austin Dr.- Snapfinger line section to 101% of its maximum rating.

Need Date: 2008

Project Name: **GRADY - MORROW 230 KV REACTOR PROJECT**

Description: Install a 2% reactor in the Grady - Morrow 230 KV line at Morrow

Supporting Statement: Occuring at Shoulder loads in 2008 with Bowen unit # 4 off, loading on the Hill Street - Wabash - Boulevard 230 kV lines exceed their rated capacity after losing the Klondike - Norcross 500 kV line.

Need Date: 2008

Project Name: **CORNELIA 115KV CAPACITOR BANK ADDITION**

Description: Add a second 30 MVAR capacitor bank to the Cornelia substation.

Supporting Statement: Voltage support is needed during contingency conditions. During the shoulder case conditions in 2008, a loss of the Alto - Clermont Jct. segment of the Clermont Jct. - Cornelia 115 kV line will cause voltages to drop more than 5% of their corresponding precontingency levels at following nonregulated substations: Alto, Reigel Textile and Fieldale

Need Date: 2008

Project Name: **NORTH LAGRANGE 115 KV CAPACITOR PROJECT(GTC)**

Description: Install a 2 - step, 19.2 MVAR per step, 38.4 MVAR total, 115 kV capacitor bank.

Supporting Statement: In 2010, during the summer peak hour with 3600 MW sales to Florida and Yates #3 off, the loss of the Lagrange end of the Lagrange - Yates 115 kV line results in the 115 kV bus voltage at Lagrange #3 to drop to 89.3% with a voltage drop of 11.3%.

Need Date: 2008

Project Name: **MOON ROAD / BAY CREEK 115-KV CAPACITOR BANK**

Description: 1. Install a 2-stage, 60 MVAR 115kV capacitor bank at Moon Road.
2. Install a 2-stage, 60 MVAR 115kV capacitor bank at Bay Creek.

Supporting Statement: Base voltage at Lawrenceville #2, Plantation Road, and Lawrenceville #3 is approximately 95% in 2010 in Hot Weather cases.

Need Date: 2008

EAST REGION PROJECTS

Project Name: **N. AMERICUS - N. TIFTON 115 KV LINE UPGRADE PROJECT**

Description: On the N. Americus - N. Tifton 115 kV line, rebuild 21.5 miles with 795 ACSR to operate at 100C from E. Americus Jct. to Crisp #2 (Warwick).

Supporting Statement: In 2008, under peak loading conditions with contract sales to Florida and the Crisp Hydro unit out of service, the loss of the Pitts 230/115 kV transformer causes the E. Americus Jct. - Crisp #2 section of the N. Americus - N. Tifton 115 kV line to load to 67.2 MVA or 107% of its 50 C rating (63 MVA).

Need Date: 2008

Project Name: **EMORY - MORELAND AVE. 115-KV UPGRADE PROJECT**

Description: Upgrade approximately 3.6 miles of 50 degree C, 636 ACSR, 115-kV conductor for 100 degree C operation, from Emory to Moreland Ave.

Supporting Statement: The Emory - Moreland Avenue 115-kV line was constructed using 636 ACSR conductor with a 50 degree C rating of 96 MVA. Load flow analysis indicates that by 2008, this line could overload for loss of Emory - Scottdale due to load expansion at Emory and the CDC.

Need Date: 2008

Project Name: **HOMELAND 230/115 KV**

Description: Construct the Homeland-Kettle Creek 230 kV line (36 miles, 1351.5 ACSR). Construct the Homeland 230/115 kV Substation at the present Saint George tap of the Kettle Creek-Kingsland 115 kV line, one mile NW of Homeland, Ga. Install two 230 kV breakers at Kettle Creek.

Supporting Statement: After December 2008, FP&L will no longer offer backup service for Saint George and Macedonia loads. These two subs and Folkston, Browntown and Scrubby Bluff cannot be served out of Kettle Creek for loss of the Kingsland end of the Kettle Creek-Kingsland 115 kV line. Also, there are almost no days of the year when load is low enough to do maintenance on the Duval-Kingsland 230 kV line without voltage collapse and loss of all Kingsland-area load for a single contingency (loss of Colerain-Thalman 230 kV line). The reverse is also true.

Need Date: 2008

Project Name: **MCDONOUGH TRANSMISSION IMPROVEMENT PROJECT PART 1**

Description: (A) Creates a McDonough 115 kV ring bus,
(B) Provides two high capacity Atkinson - McDonough 115 kV lines
(C) terminates two West Marietta 115 kV lines at McDonough's 115 kV bus
(D) Rebuilds the Atkinson main bus for higher capacity
(E) Replace the existing 230/115 KV transformer #4 with a 400 MVA, 230/115 kV transformer (to be operated normally open) and retire the 230/115 kV #3 transformer

Phase 2 - TEAMS 11178 will:

(A) Atkinson - Northwest line is transformed into a 6 wire configuration.
(B) Serve Bolton radially from Atkinson
(C) Install a second 230/115 kV transformer at Boulevard.

EAST REGION PROJECTS

Supporting Statement: This project reconfigures and rebuilds facilities at McDonough / Atkinson to create a strong 115 kV area source – eliminating numerous system problems, which eliminates several projects whose total cost exceeds \$65 million. The list of benefits is:

- (1) Eliminates excessive loading on the Northwest - Northside Drive 115 kV line
- (2) Eliminates excessive loading on the North Marietta - Smyrna 115 kV lines - triggered by loss of 230 kV service to Smyrna
- (3) Eliminates contingency caused excessive loading on the West Marietta - Atkinson 115 kV lines.
- (4) Eliminates contingency caused excessive loading on the Douglasville - West Marietta 115 kV line
- (5) the creation of a strong area 115 kV source results in enhanced FIDVR support

Need Date: 2008

Project Name: **GREENWOOD PARK AREA 115-KV CAPACITOR ADDITION**

Description: Add a two stage, 48 MVAR, 115-kV capacitor bank, (24 MVAR's per stage), and all associated equipment, at the Greenwood Park substation,

Supporting Statement: By the summer of 2008, support will be necessary to maintain an adequate voltage level on the Dailey Mill and Greenwood Park 115-kV busses during contingency operating conditions. Also, by the summer of 2009, voltage levels will fall below 95% with no transmission contingencies on the system.

Need Date: 2008

Project Name: **MCDONOUGH TRANSMISSION IMPROVEMENT PROJECT PART 2**

Description: (A) Atkinson - Northwest line is reconfigured into a single 6 wire .
(B) Serve Bolton radially from Atkinson
(C) Installs a second 230/115 kV transformer at Boulevard.

Supporting Statement: Part 1 project reconfigures and rebuilds facilities at McDonough / Atkinson to make Atkinson a strong 115 kV area source. Part 2 improves the transmission facilities between Atkinson and Northwest and installs a second 230/115 kV transformer at Boulevard. The completion of Parts 1 & 2 eliminates or delays several projects whose total cost exceeds \$65 million. The list of benefits is:

- (1) Eliminates excessive loading on the Northwest - Northside Drive
- (2) Eliminates excessive loading on the North Marietta - Smyrna 115 kV lines
- (3) Eliminates excessive loading on the West Marietta - Atkinson 115 kV lines.
- (4) Eliminates excessive loading on the Douglasville - West Marietta 115 kV line

Need Date: 2008

Project Name: **MURRAY LAKE 115 KV LINE UPGRADE PROJECT**

Description: Upgrade the 2.36 mile long 4/0 ACSR 115 kV line from its current 50C rating to 100 C from the Murray Lake tap off of the Morrow - Grady 115 kV line - to the Murray Lake Substation.

EAST REGION PROJECTS

Supporting Statement: Murray Lake is a radial 115 KV load with a back up 115 kV line from a separate source. The "hot weather" load forecast of 56 MVA loads the 336 ACSR's derated capacity of 52 by 108%. The back up line is 4/0 ACSR and is rated for 47 MVA (rate B). Upgrading the 4/0 ACSR to 92 MVA capacity (100C rating) and making it the primary source solves the thermal problem. The 336 ACSR's 50C rating of 63 makes it a good back up source.

Need Date: 2008

Project Name: **DAWSON CROSSING - NELSON 2ND 115KV LINE**

Description: 1. GTC - Construct a 115kV line from Dawson Crossing - Juno(approx. 9.0 miles) to create a second Dawson Crossing to Nelson 115kV Line.
2. Dawson Crossing 230/115kV Substation -- Install a 115kV PCB and other terminal equipment and relays as necessary to terminate the second 115kV line to Nelson(2009).
3. COD - Nelson 230/115/46kV Substation - Modify terminal equipment and relays as necessary to terminate the second 115kV line from Dawson Crossing.

Supporting Statement: In 2008, power flow analysis indicated that for the loss of the Dawson Crossing 230/115kV transformer, the Etowah to Reavis Mountain section of the Dawson Crossing - Nelson 115kV line will load to 104% of its 124MVA rating. In addition, for the loss of the Nelson - Big Canoe 115kV line section, voltages at Big Canoe and Juno to drop to 92%. This problem occurs when the Nelson - Big Canoe section of line is out, the "normally open" point between Cane Creek and Mohawk Industries will have to be closed to maintain service to Cane Creek, Juno and Big Canoe. This project will delay the need to reconductor approximately 14 miles of 115kV line from Dawson Crossing to Reavis Mountain.

Need Date: 2008

Project Name: **EFFINGHAM COUNTY GENERATOR SYSTEM IMPROVEMENTS PROJECT**

Description: 1. At Ludowici Primary, replace the 4/0 cu transfer bus with 1590 AAC; replace the 600 A switches (#051715, 051717, 051719, & 051745) with 1200 A switches.
2. Reconductor the Rayonier - Ludowici Primary section (9.0 miles) of the Jesup - Ludowici Primary 115 kV T/L from 336 ACSR 100 C to 795 ACSR 100 C.
3. Reconductor the Hinesville Primary - Horse Creek section (4.1 miles) of the Hinesville Primary - Ludowici Primary 115 Kv T/L from 477 ACSR 100 C to 795 ACSR 100 C.
4. Upgrade the Long Reach - Riceboro section (9.2 miles) of the Dorchester - Ludowici Primary 115-kv line from 636 ACSR 50 C to 636 ACSR 100 C.
5. Install a 2% reactor on the Statesboro Primary - McIntosh 230 kV T/L (at Statesboro Primary).

Supporting Statement: GTC requests GPC to complete the transmission improvements necessary for firm network service for the 500 MW Progress Ventures Effingham County, LLC TSR (OASIS #136970).

Need Date: 2008

Project Name: **BONAIRE 230/115-KV TRANSFORMER REPLACEMENT**

EAST REGION PROJECTS

Description: GTC: Replace both 280 MVA, 230/115-kV transformers at Bonaire with 400 MVA, 230/115-kV transformers.

Supporting Statement: Loss of a Bonaire 230/115-kV transformer will load the remaining transformer to 101% of its 320 MVA bonus rating, 116% of its 280 MVA nameplate rating.

Need Date: 2008

Project Name: **CLIFTONDALE PROJECT**

Description: GTC _ Construct a new 230/25 kV substation named Cliftondale located near the intersection of Douglasville Fairburn Rd and Ridge Road.
GTC _ Construct a new 4 miles long 230 KV line from a tap off of the Villa Rica - East Point 230 KV line at the Camp Creek site to Cliftondale. The tap line will be constructed of 1351 ACSR conductor @ 100 C.
GPC _ Provide a 230 kV switching structure near the Camp Creek substation - 1) Loop the East Point - Villa Rica 230 kV line into this structure
2) terminate the new Cliftondale 230 kV tap line on a switch.

Supporting Statement: This project connects Cliftondale (new GTC) substation to the transmission system. Located in South Fulton County the Cliftondale substation will serve an emerging load comprised of new communities locating in South Fulton.

Need Date: 2008

Project Name: **NON-CONDUCTOR 230-KV REPLACEMENTS AT KLONDIKE & MINOLA DR.**

Description: Replace 1200 amp, 230-kV trap @ Klondike and 1200 amp switch at Minola Dr. with 1600 amp equipment.

Supporting Statement: Loss of the Klondike - Norcross 500-kV line, (with Bowen #4 off), loads the Klondike - Minola Dr. section of the Austin Dr.- Klondike 230-kV line to 103% of its rating due to 1200 amp line termination equipment at the Klondike & Minola Dr. substations.

Need Date: 2008

Project Name: **ATHENS - CENTER PRIMARY 115 KV (BLACK) UPGRADE**

Description: Upgrade the Athens - Center 115kV Blk line from Center to the Louisiana Pacific Tap (927.1 ACAR; approximately 0.47 miles in length) to 75C.

Supporting Statement: In 2008, loss of the Athena 230/115 kV autotransformer will cause the Center - Louisiana Pacific line segment (50C 927.1 ACAR) of the Athens - Center Primary (Black) 115 kV line to load to 101% of its 114 MVA contingency rating.

Loss of the Athens – Center Primary (Black) 115 kV line due to overload will increase loading on the Athens – Center Primary (White) 115 kV over its contingency rating. Loss of the Athens – Center primary (White) 115 kV will trigger a cascade trip out of the 115 kV lines in the Athens area. The total MVA lost will exceed 500 MVA.

Need Date: 2008

Project Name: **LUDOWICI - RICEBORO 115-KV UPGRADE**

Description: Upgrade the Ludowici - Long Reach section, 9.2 miles of 636 ACSR, of the Ludowici - Riceboro 115-kV line to 100C.

EAST REGION PROJECTS

Supporting Statement: Beginning in 2006, loss of the Dorchester - Cay Creek line section of the Dorchester - Riceboro 115-kV line will load the Ludowici - Long Reach 115-kV line section to 105% of its 96 MVA conductor rating and the Long Reach - Riceboro 115-kV line section to 100% of its 96 MVA conductor rating. Until 2008, networking the McManus - Riceboro 115-kV line will reduce the contingency line flow to less than 100%. Project need and timing driven by increased load at Interstate Paper.

Need Date: 2008

Project Name: **OLA 115-KV CAPACITOR ADDITION**

Description: Add a two stage, 60 MVAR, 115-kV capacitor bank, (30 MVAR's per stage), and all associated equipment, at GTC's, Ola switching station.

Supporting Statement: By the summer of 2008, voltage support will be necessary to maintain adequate voltage levels on six, (6), 115-kV busses, between McDonough and Porterdale, during an outage of the Porterdale end of the Ola - Porterdale 115-kV line. In addition, by hot weather of 2009, the same contingency, as well as the loss of the McDonough end of the McDonough - Ola 115-kV line, will cause overload conditions to occur on the McDonough - Ola - Porterdale circuits.

Also, after the 2010 Ola 230-kV project is in service, VAR support will be necessary to maintain an adequate voltage level at the new Jackson Creek, substation, for the loss of the Klondike - Jackson Creek 230-kV line section.

Need Date: 2008

Project Name: **RICEBORO 115-KV CAPACITOR INCREASE**

Description: GTC -- Increase the 13.6 MVAR + 15 MVAR, 115-kV capacitor to 2x30 MVAR

Supporting Statement: By 2010, loss of the Dorchester - Cay Creek 115-kV line section will produced the following voltage drops:

Cay Creek 115-kV	102%	--->	92.8%
Riceboro 115-kV	101%	--->	93.0%
Interstate Paper 115-kV	100%	--->	92.8%

Need Date: 2008

Project Name: **KLONDIKE - JACKSON CREEK 230KV LINE**

Description: Construct a 230-kV line from Klondike to GTC's new load station, Jackson Creek, (GTC to construct line), and terminate the new line on the 230-kV bus in the Klondike station, (GPC). This line section to become part of GTC's, Klondike - Ola 230-kV circuit proposed for 2010.

Supporting Statement: GTC requesting GPC to terminate the new 230kV line at Klondike to support the new Jackson Creek substation project.

Need Date: 2008

Project Name: **FIRST AVE. (COLUMBUS) - GOAT ROCK 230 KV LINE UPGRADE**

Description: Upgrade 9.25 miles of 795 ACSR, 230 kV line to operate at 100C.

EAST REGION PROJECTS

Supporting Statement: During the process of doing field work to relocate some lines for a road widening project near Columbus, it was determined that the First Avenue - Goat Rock 230 kV line was sagged at a lower temperature than indicated in the transmission data base. After doing temperature and loading calculations, it was determined that the line is sagged for 50°C operation, not 100°C as thought previously.

Need Date: 2008

Project Name: **WINDER PRIMARY SVC**

Description: Install a 260 MVAR, Static VAR Compensator (SVC) adjacent to the Winder Primary Substation.

This will be a turnkey project with Mitsubishi Electric installing the SVC on a site prepared by GTC.

GPC will make the necessary substation modifications at Winder Primary to terminate the SVC.

Supporting Statement: Transmission studies show the need for additional transmission reinforcement by Summer 2008 to appropriately manage the exposure to FIDVR in North Georgia. One effective strategy to manage exposure to FIDVR is through the placement of dynamic Mvars. The Metro Atlanta SVS will provide these dynamic Mvars.

Need Date: 2008

Project Name: **THOMASVILLE 230 & 115 KV BUS TIE BREAKERS**

Description: Split the 230 and 115 kV buses and install bus-tie breakers. Install additional relaying and controls. Upgrade affected switches and make other improvements as directed by MEAG.

Supporting Statement: Extreme Events - a 115 kV bus differential drops 160 MW of load in 2008. A 230 kV bus differential causes voltage at load buses with a combined 209 MW to fall below 85%.

Need Date: 2008

Project Name: **FRANKLIN #3 NETWORK IMPROVEMENT PROJECT**

Description: Reconductor the section of 115 kV line between Columbus First Avenue -- Brookhaven Boulevard (~2.3 miles) with 795 Kcmil ACSS Drake/TW-HS285 , sagged for 130 Degree C operation , providing 1200 Amp Ampacity

Supporting Statement: Southern Power has signed an NRIS Interconnection agreement. This project provides the network improvements to support this agreement.

Need Date: 2008

Project Name: **ALBANY - MITCHELL 115 KV UPGRADE**

Description: Upgrade the 336 ACSR section (2.06 miles at the Mitchell end) for 100C operation. No land acquisition or substation work.

Supporting Statement: Line crew noticed that the line conductors looked low. It appears that incorrect data was used when calculating the line's sag. A survey and temp sense test is being done. In the meantime, the line is derated to 50°C operation.

Need Date: 2009

Project Name: **OLIVER DAM 115 KV SWITCHING STATION SERIES REACTOR PROJECT**

EAST REGION PROJECTS

Description: Purchase and install a 2%, 1200 ampere, 115-kV current limiting, series reactor on each phase of the N. Columbus - Oliver Dam Switching Station 115-kV line.

Supporting Statement: In 2009, under shoulder loading conditions, loss of the Goat Rock 230/115 kV transformer causes the Columbus 1st Avenue - North Columbus 115 kV line segment to load to 111% of its rating (149MVA). In 2009, there are 3 additional contingencies that will cause the Columbus 1st Avenue - North Columbus 115 kV line segment to exceed its design rating.

Need Date: 2009

Project Name: **MORROW - YATES 115KV LINE UPGRADE, (MORROW TO FIFE SECTION)**

Description: Upgrade 13 miles of existing 477 ACSR, 50° C conductor in the Morrow -Yates 115kV line, between Morrow and Fife, to 100° C.

Supporting Statement: Loss of the Yates end of the Morrow - Yates 115kV line, will overload the Morrow - Fife section, due to its 50° C rating of 79 MVA.

Need Date: 2009

Project Name: **BARNESVILLE PRIMARY 115 KV CAPACITOR PROJECT**

Description: Install 1- 2 X 30MVAR (60 MVAR total), 115 kV capacitor bank at Barnesville Primary.

Supporting Statement: In 2010, during the summer peak and Branch #4 off, the loss of the Barnesville end of the Barnesville Primary end of the Barnesville - Forsythe 115 kV line results in the 115 kV bus voltage at Barnesville to drop to 92.9%.

Need Date: 2009

Project Name: **AVALON - BIO RECONDUCTOR PROJECT**

Description: Reconductor the Bio - Reed Creek 115 kV transmission line from Bio to Airline (approximately 6.1 mi long) with 1033 ACSR conductor sagged for 100 C operation.

At the Bio substation replace 115 kV 600 A breaker disconnect switches (123207 and 123209) with 1200 A switches.

Change N.O. point on the Avalon - Bio and Bio - Reed Creek 115 kV line segments (i.e. open between N. Airline and Hartwell (RLB #907513) and close in the bus-tie (RLB #21803) at the Airline substation).

Install a 30 MVAR capacitor bank at Airline with associated equipment for voltage support. Also, replace 600 A switches and 4/0 Cu jumpers at Airline.

Supporting Statement: As of 2009, segments of the Avalon - Bio 115 kV line will severely overload for a loss of any segment of the Bio - Center 230 kV line. The worst contingency is a loss of the Bio - Vanna 230 kV line segment for which the Bio - Monroe Auto 115kV line segment loads to 112% of its 188 MVA rating (Rate B), while the Monroe Auto - Hartwell 115 kV line segment loads to 110% of its 188 MVA rating (Rate B).

Need Date: 2009

Project Name: **2009 BASE REACTIVE POWER SUPPORT**

EAST REGION PROJECTS

Description: Install capacitors to improve the overall voltage profile in Georgia in 2009.

- Snellville Primary 230kV (150 MVar).
- Lawrenceville 115 kV (60 MVar - 2nd capacitor bank; total: 58.5 MVar + 60 MVar).

Supporting Statement: This project is continuation of an attempt to levelize and to improve the voltage profile in the Georgia ITS by optimally installing a number of shunt capacitors in the system. A 210 MVar of shunt reactive support is proposed for allocation in 2009.

Need Date: 2009

Project Name: **GTC: EAST SOCIAL CIRCLE 230/115 KV BANK PROJECT**

Description: GTC - Replace the existing 230/115 kV, 300 MVA transformer bank with a 400 MVA autobank.

Supporting Statement: As of 2009, the East Social Circle 230/115 kV, 300 MVA, transformer bank will overload for a number of single element outages. In 2009, the total number of these outages is 15. The worst contingency is a loss of the East Social Circle - Walnut Grove 230 kV line segment of the East Social Circle - Snellville Primary 230 kV line. This contingency causes the East Social Circle 230/115 kV transformer bank to load up to 124% of its 300 MVA nominal rating.

Need Date: 2009

Project Name: **MORROW - YATES 115-KV TAP LINE UPGRADE (OWENS CORNING TAP)**

Description: Upgrade the 336 acsr, Owens Corning 115-kV tap, off of the Morrow - Yates 115-kV line, for 100 degree C operation, (approximately 3.5 miles).

Supporting Statement: By 2009, the Owens Corning, Ono and Fairburn #2 loads are expected to exceed the 63 MVA capacity of the 336 ACSR, 50 degree C tap off of the Morrow - Yates 115-kV line. The loads are normally served radial from Line Creek and backed up by the tap line.

Need Date: 2009

Project Name: **GAINESVILLE #1 -- MCEVER ROAD 115 KV RECONDUCTOR**

Description: Rebuild the Gainesville #1 - McEver Rd 115 kV line with 1033 ACSR conductor constructed for 100 C operation.

Supporting Statement: The Gainesville - McEver Rd 115 kV line is about 5.8 mi long. In 2009, the Gainesville #1 - McEver Road 115 kV line will overload for loss of the different segments of the McEver - Gainesville #2 115 kV line. Loss of the Chicopee - Gainesville #2-2 line segment of the McEver - Gainesville #2 115 kV line will load the Gainesville #1- Linwood line segment loads up to 118% of its 114 MVA contingency rating and the West Gainesville - Linwood segment up to 107% of its 114 MVA contingency rating. The other critical contingency is a loss of the Oakwood - Chicopee segment of the McEver - Gainesville #2 115 kV line.

Need Date: 2009

Project Name: **THOMASTON-YATES 115-KV LINE REBUILD**

Description: Reconductor the Yates-Mountain Creek section (7.5 miles) with 1033 ACSR to operate at 100C.

EAST REGION PROJECTS

Supporting Statement: In 2009, peak conditions, loss of the Yates - Shenandoah 115 kv line segment and subsequent switching to pick up the load, the Yates end of the Thomaston - Yates 115 kv line will load to 105% of its contingency rating (155 MVA).

Need Date: 2009

Project Name: **CALHOUN LOOP 115KV LINE RECONDUCTOR**

Description: Reconductor 2.47 miles of 336 ACSR with 795 ACSR from the NGEMC-Fuller junction to the Calhoun #3 Junction on the Calhoun #3 tap off of the Oostanaula - Pinson 115-kV line.

Supporting Statement: In 2009, under peak loading condition, with the loss of the Calhoun #2 tap, the normal open switch between Calhoun #2 and Calhoun #3 will have to be closed to continue serving the load at Calhoun #2. Under the above condition the, the 2.47 mile section of 336 ACSR from the NGEMC-Fuller junction to the Calhoun #3 junction will load to 102% of its 124MVA rating.

Need Date: 2009

Project Name: **BOWEN-VILLA RICA CONVERSION & BOWEN 230 KV RECONFIG. PROJECT**

Description: Reconfigure the Plant Bowen 230 kV bus and convert the Bowen -- Villa Rica 500 kV line to 230 kV operation. The 230kV bus reconfiguration will also support the installation of the McConnell Road 230 kV line in 2010 and the conversion of Unit #1 to 230 kV high side operation in 2010.

Supporting Statement: The Plant Bowen 230 kV bus is being reconfigured to support the installation of the McConnell Road 230 kV line. In addition the reconfiguration of the 230 kV bus will support the conversion of the Bowen -- Villa Rica 500 kV line to 230 kV operation. This reconfiguration will also support the conversion of unit one to 230 kV high side operation in 2010. All of these projects result in enhanced dynamic voltage response required for appropriate management of FIDVR exposure.

Need Date: 2009

Project Name: **GTC - NEBO - NEW GEORGIA 115KV LINE**

Description: Build appx. 5 miles 115kv line to connect New Georgia to Nebo substations. This will create the McConnell - Villa Rica 115kV network line via an open point at East Dallas.

Supporting Statement: In 2009 the McConnell Road-Portland 115kV line overloads on multiple segments for loss of either remote end.

As an interim solution for 2007 and 2008, a normally open point was created at East Dallas to mitigate line overloads. Some load can be shifted during contingencies.

Need Date: 2009

Project Name: **BARTLETTS FERRY - GOAT ROCK 115 KV RECONDUCTOR PROJECT**

Description: Reconductor both of the Bartletts Ferry - Goat Rock 115 kV lines with 1033 ACSR.

EAST REGION PROJECTS

Supporting Statement: In 2009, under shoulder loading conditions and loss of the MEAG Wansley CC, the loss of one of the Bartletts Ferry - Goat Rock 115 kV lines will cause the other Bartletts Ferry - Goat Rock 115 kV line to load to 122% of its 124 MVA rating.

Need Date: 2009

Project Name: **DEPTFORD - WHITEMARSH 115 KV LINE RECONDUCTOR**

Description: On new ROW, build a new Deptford - Whitemarsh 115 kV line using 795 ACSR while keeping the existing line in service. Once the new line is in service, remove the old line.

Supporting Statement: By 2009, normal loading during Hot weather will load the 4/0 copper conductor to 109% of its 85 MVA, 104° F rating (101% of its 91 MVA, 95° F rating).

Need Date: 2010

Project Name: **THOMSON 500/230-KV PROJECT**

Description: GPC:
Expand the 500-kV ring bus at Warthen and terminate the Thomson Primary 500-kV line.
Construct a 500-kV switchyard and expand the 230-kV switchyard at Thomson Primary.
Install a 1344 MVA, 500/230-kV transformer at Thomson Primary.
Replace the 140 MVA, 230/115-kV transformer at Thomson Primary with a 300 MVA transformer.
Build 23 miles of 230-kV line on new ROW from Thomson Primary to Dum Jon.
Install a 230-kV breaker at Dum Jon to terminate the Thomson Primary line.
Replace the 125 MVA, 230/115-kV transformer at Evans Primary with a 300 MVA transformer.

GTC:

Construct 35 miles of 500-kV line from Warthen to Thomson Primary.

Supporting Statement: By 2010, loss of the Goshen - Peach Orchard section of the Dum Jon - Goshen 230-kV line will load the Dum Jon - West Augusta 115-kv line to 136% of its 249 MVA rating. An outage of the Goshen 230-kV #1 bus will load the Goshen - Vogtle 230-kV Black line to 102% of its 866 MVA conductor rating and the Goshen 230/115-kv #2 transformer to 118% of its 280 MVA nameplate rating.

Need Date: 2010

Project Name: **KLONDIKE 230-KV REACTOR PROJECT**

Description: Install a 3-phase set of 4000amp, 230-kV, series reactors, (two-1%, 2000amp reactors per phase in parallel for a total of 0.5% @ 4000amp-per phase), between the autobank and 230-kV bus leading to the bus tie breakers, (314 & 324)

Supporting Statement: In 2010, during shoulder load conditions with a major generating unit out of service, loss of the Klondike - Norcross 500-kV line causes the Klondike 500/230-kV autobank to overload its 1644 MVA bonus rating by 4% , (126% of nameplate).

Need Date: 2010

Project Name: **EAST SOCIAL CIRCLE - MONROE 115 KV LINE RECONDCT. - PHASE I**

EAST REGION PROJECTS

Description: Reconductor the 636 ACSR conductor (approximately 2.1 miles in length) between East Social Circle and Social Circle Jct. with 1351 ACSR conductor.

Supporting Statement: As of 2010, the Social Circle Jct. - East Social Circle segment of the East Social Circle - Monroe 115 kV line will overload under certain single element contingencies out of which the most critical contingency is a loss of the Bay Creek 230/115 kV transformer bank. Other critical single element contingency includes loss of the Winder 230/115 kV transformer bank and loss of the Bay Creek - LPM Monroe 230 Kv line.

In 2011, postcontingency loading of the East Social Circle - Social Circle Jct line segment will be 102% of its 188 MVA contingency rating.

Need Date: 2010

Project Name: **PEGAMORE 230KV SWITCHING STATION PROJECT**

Description: Construct a new 230kV switching station (Pegamore 230kV SS) on the newly converted Bowen – Villa Rica 230kV line at Huntsville Junction, and install three 230kV breakers to terminate the Bowen, Villa Rica, and McConnell Road 230kV Lines. Construct a new 230kV line using existing ROW, from Pegamore to Huntsville (GPC), and from Huntsville to the McConnell Road 230/115kV substation (GTC). Install a 230kV breaker at McConnell substation and terminate the Pegamore line. Convert the Huntsville, Battlefield, and Cedarcrest substations to 230kV operation (GTC)

Supporting Statement: In summer 2008 loss of the McConnell Rd. 230/115kV transformer, the Big Shanty - McConnell Rd. 230kV line or the McConnell Rd. - Hwy. 120 115kV line segment will overload the Portland - Huntsville jct. 115kV line segment to as much as 119% of its 477 ACSR (155 MVA) rating.

This project will alleviate the thermal overload and provide approximately 100 MVAR's of reactive support in the area. This line will also provide for the future reconfiguration of the 230kV bus at Plant Bowen and allow for moving a unit from the 500kV to the 230kV bus. The reconfiguration will provide additional FIDVR support.

Need Date: 2010

Project Name: **DORCHESTER 115-KV CAPACITOR BANK**

Description: Install a 2x30 MVAR, 115-kV capacitor bank.

Supporting Statement: Loss of the Little Ogeechee - Richmond Hill section of the Hinesville - Little Ogeechee 115-kV line drops the 115-kv bus voltages at Daniel Siding, Burnt Church and Sterling Church to the 91.5% - 92.5% range, a 7.2% - 7.6% drop. The 115-kV bus voltage at Richmond Hill drops to 91.6%, a 8.1% drop.

Need Date: 2010

Project Name: **MCINTOSH - WEST MCINTOSH 230-KV RECONDUCTOR**

Description: Reconductor the McIntosh - West McIntosh 230-kV Black & White lines with 2-1351 ACSS sagged for 160 C operation.

EAST REGION PROJECTS

Supporting Statement: By 2010 with Effingham CC generation running at 400 MW and McIntosh CTs off, loss of the McIntosh - West McIntosh 230-kV Black line and McIntosh CC 10 loads the McIntosh - West McIntosh 230-kV White line to 101% of its 1144 MVA conductor rating (2-1272 ACSR).

By 2011 with Effingham CC generation running at 400 MW and McIntosh CTs off, loss of the McIntosh - West McIntosh 230-kV White line and McIntosh CC 11 loads the McIntosh - West McIntosh 230-kV Black line to 100% of its 1204 MVA conductor rating (2-1351 ACSR).

Need Date: 2010

Project Name: **UNION POINT - WARRENTON 115-KV RECONDUCTOR**

Description: Rebuild the Union Point - Warrenton 115-kV line (26.7 miles of 336 ACSR) with 1351 ACSR conductor at 230-kV specs.

Supporting Statement: By 2010, with the Thomson 500/230-kV Project, loss of the East Social Circle - Rutledge 115-kV line section will load the line to 124% of its 124 MVA conductor rating.

Need Date: 2010

Project Name: **SUMMER GROVE 115 KV CAPACITOR PROJECT (GTC)**

Description: GTC - Install a 2 - step, 19.2 MVAR per step, 38.4 MVAR total, 115 kV capacitor bank.

Supporting Statement: x

Need Date: 2010

Project Name: **BRUNSWICK - EAST BEACH 115 KV RECONDUCTORING (PHASE I)**

Description: Reconductor 1.73 miles of 559.5 ACAR, between structure #37 and Stonewall Street, with 100°C-sagged 795 ACSR.

Supporting Statement: With the Brunswick-Saint Simons 115 kV line out, the Brunswick-East Beach line cannot carry all of the load south of Brunswick.

Need Date: 2010

Project Name: **MCDONOUGH 115-KV LINE BREAKER INSTALLATION**

Description: Install a 115-kV line breaker in the Greenwood Park/Hampton tap line bay at the McDonough substation. Also, change the Normally Open point to be between Dailey Mill and Greenwood Park instead of between Greenwood Park and McDonough.

Supporting Statement: Serving the Greenwood Park 115-kV substation normally from McDonough, (after the 230/115-kV autobank is installed at GTC's Ola substation in 2010), will reduce 115-kV line exposure on Greenwood Park, enhance the voltage profile on the Hampton tap line and eliminate the need to switch the Greenwood Park load off of the tap for several different contingency situations involving the O'Hara - S.Griffin 115-kV circuit.

Need Date: 2010

Project Name: **LITTLE OGEECHEE 230-KV CAPACITOR**

EAST REGION PROJECTS

Description: Install a 162 MVAR, 230-kV capacitor bank in the Little Ogeechee (SAV) 230/115-kV substation.

Supporting Statement: By 2009, there is a steady decline in the normal 230-kV voltages in the Savannah area. McIntosh/West McIntosh is the main power/voltage source for the Savannah/Hinesville area. From McIntosh to Little Ogeechee to Dorchester is essentially a radial system with a 3% voltage drop from McIntosh to Little Ogeechee/Dorchester.

Need Date: 2010

Project Name: **TIGER CREEK GENERATION TRANSMISSION IMP. PROJECT(PHASE 2)**

Description: 1. Reconductor the Arkwright - Englehard Minerals Jct section, 26 miles, from Str. 1 - Sw. 137843 to Englehard Gordon Minerals with 795 ACSR conductor. 2010
2. At Eatonton Primary, install 230 kV, 3% series reactor in the Branch - East Social Circle line. 2010

Supporting Statement: Make improvements necessary for firm transmission service for the 600 MW Progress Ventures Tiger Creek generation for serving GPC native load starting in 2009.
In 2010, with Tiger Creek at full output, loss of the Branch - W. Milledgeville 230 kV line will cause the Arkwright - Gordon #2 115 kV line to exceed its design rating (91 MVA). Loss of the Branch - Eatonton 230 kV line causes the Branch - East Social Circle line to exceed its design rating (602 MVA).

Need Date: 2010

Project Name: **PLANT BOWEN CONVERSION OF UNIT ONE TO 230 KV**

Description: Convert Bowen Unit #1 to 230kV operation by installing a new GSU and connecting to the re-configured 230kV bus (see TEAMS project 11326)

Supporting Statement: The Plant Bowen 230 kV bus is being reconfigured to support the conversion of the Bowen - Villa Rica 500kV line to 230kV Operation in 2009. This reconfiguration will also support the conversion of Unit #1 to 230 kV high side operation in 2010. The conversion of Bowen Unit #1 to 230kV operation will provide approximately 450 dynamic MVAR's. Both of these projects result in enhanced dynamic voltage response required for the appropriate management of FIDVR exposure.

Need Date: 2010

Project Name: **GTC -- OLA 230-KV PROJ., PHASE-II (OLA - JACKSON CK. LINE)**

Description: Create a 230-kV circuit from Klondike to Ola by way of two new GTC load stations, Jackson Creek and East Lake, by constructing a 1351 acsr line from Jackson Creek to East Lake and converting the existing East Lake - Ola 115-kV line to 230-kV operation. Also, install a 400 MVA, 230/115-kV autobank at OLA and three 115-kV breakers to terminate the lines to McDonough, Porterdale and Island Shoals. (GTC to construct)

Supporting Statement: By 2010, loss of the 115-kV feed into McDonough, from Stockbridge, will overload the McDonough - Ola - Porterdale and McDonough - S.Griffin 115-kV lines. Other contingencies overload McDonough - Stockbridge, McDonough - S.Griffin, Jonesboro - Stockbridge and the Stockbridge autobank.

Need Date: 2010

EAST REGION PROJECTS

Project Name: **STATESBORO - WADLEY 115KV UPGRADE**

Description: Upgrade the Swainsboro - Nunez tap line section, 2.6 miles, of the Statesboro - Wadley 115-kV line to 100 C. (2010)
Upgrade the Meter City - Stillmore line section, 8.0 miles, of the Statesboro - Wadley 115-kV line to 100 C. (2010)

Supporting Statement: By 2010, loss of the Statesboro end of the Statesboro - Wadley 115-kV line, Statesboro - Metter, will load the Swainsboro - Nunez tap section to 102% of its 79 MVA, 75 C conductor rating.

By 2012, loss of the Wadley end of the Statesboro - Wadley 115-kV line, Wadley Primary - Wadley, will load the Metter City - Stillmore section to 102% of its 79 MVA, 75 C conductor rating.

The Wadley - Swainsboro and Statesboro - Metter - Metter City sections have been upgraded to 100 C.

Need Date: 2010

Project Name: **MCDONOUGH 4&5 NETWORK IMPV (LASSITER-N MAR 115 KV UPG)**

Description: Reconductor the North Marietta - Marietta #5 section (approximately 1.2 miles of 636 ACSR) with conductor capable of carrying 1500 amperes. Replace termination equipment at North Marietta.

Supporting Statement: By 2012, McDonough generation will increase from 520 MW to 2520 MW. This project is one of several that are needed to prevent contingency overloading of various facilities associated with delivery of the generation from Units 4 and 5.

Need Date: 2010

Project Name: **MCDONOUGH 4&5 NETWORK IMPV (JACK MCDONOUGH - SMYRNA 230 KV)**

Description: Acquire land and construct the Jack McDonough - Smyrna 230 kV line via Cumberland (convert from 115 kV) and GTC Galleria (new) substations. Add a 5-element GIS 230 kV ring bus at Smyrna and replace the 300-MVA 230/115 kV transformer with two 400-MVA transformers.

Supporting Statement: By 2012, McDonough generation will increase from 520 MW to 2520 MW. Loss of the McDonough - Peachtree 230 kV line, which will normally carry 950 MW, will cause severe overloading of the facilities surrounding McDonough, including the Adamsville - Jack McDonough and East Point - Jack McDonough 230 kV lines, the two Northwest 230/115 kV transformers, and the Northside Drive - Spring Street 115 kV line. The new Jack McDonough - Smyrna 230 kV line will solve these thermal loading problems and provide a second transmission source into Smyrna, increasing reliability in the dense Smyrna / Cobb County load center.

Need Date: 2010

Project Name: **BRUNSWICK - ST SIMONS 115 KV RECONDUCTORING**

Description: Reconductor the Brunswick-Stonewall Street section (1.27 miles of 75C 477 ACSR on SSP and 1.35 miles of 100C 477 ACSR on CSP) using at least 795 ACSR sagged for 100C operation. Replace three 600-A switches at Brunswick with 1200-A switches.

EAST REGION PROJECTS

Supporting Statement: With the Brunswick-East Beach 115 kV line out, the Brunswick-Saint Simons line cannot carry all of the load south of Brunswick.

Need Date: 2011

Project Name: **CONYERS - CORNISH MTN. 115KV LINE RECONDUCTOR**

Description: Reconductor the Conyers - Cornish Mtn. 115 kV line (9.5 miles of 636.0 ACSR) with 100C-sagged, 230 kV-constructed 1351 ACSR.

Supporting Statement: If GTC taps this line to serve their new Iris Drive substation in 2011 as currently planned, loss of either end will overload the other end with no operating procedure available. Loss of the Conyers 230/115 kV transformer will load the Cornish Mountain-Sigman Road section to 114% of its rating.

Need Date: 2011

Project Name: **MCDONOUGH 4&5 NETWK IMPV (DAVIS ST - WEST END 115 KV RECOND)**

Description: Rebuild the Davis Street - West End 115 kV line (2.7 miles of 1033 AAC) using 170C 795 ACSS.

Supporting Statement: By 2012, McDonough generation will increase from 520 MW to 2520 MW. This project of one of several that are needed prevent contingency overloading of various facilities associated with delivery of the generation from Units 4 and 5.

Need Date: 2011

Project Name: **BETHABARA 230/115KV SUBSTATION PROJECT**

Description: GTC - Build a new 230/115kV substation Bethabara.
Build a new 230 kV switching station Clarksboro.
Build a new 115 kV switching station Jefferson Road.
Build a new 230kV line from Bethabara to Clarksboro.
Build a new 115kV line segment from Bethabara to the Georgia Square substation.

GPC - Loop the Athens - Winder 115 kV line into the 115 kV Jefferson Road Switching Station and add and/or modify relaying at the Athens and Winder as necessary.

Supporting Statement: This project will reduce contingency loadings on a number of transmission facilities in the Athens area. In 2011, critical single-element contingencies include loss of either of the transformer banks in the Athens area (i.e., 230/115 kV transformer banks at Athens, Center, and East Watkinsville) or the Winder Primary - Richardson Jct. section of the Winder Primary - Athens 115 kV transmission line.

Need Date: 2011

Project Name: **LLOYD SHOALS / PORTERDALE AREA IMPROVEMENT PROJECT (PHASE-1)**

Description: Convert the Jackson Lake 115/25-kV substation , (Snapping Shoals EMC #6), to 230-kV, (H.S), - (GTC)
Loop the Eatonton - Porterdales 230-kV line into the converted station - (GPC)

EAST REGION PROJECTS

Supporting Statement: Several contingencies will overload the Porterdale to S. Covington section of the Lloyd Shoals - Porterdale 115-kV line, by 2011, including loss of the S.Griffin end of the Lloyd Shoals - S.Griffin line. In addition, by 2011, voltage levels at S.Covington and Jackson Lake will drop below acceptable levels for loss of either end of the Lloyd Shoals - Porterdale 115-kV line.

Need Date: 2011

Project Name: **MCDONOUGH 4&5 NETWK IMPV (N MAR - SMYRNA B&W 115 KV RECONDS)**

Description: Rebuild approximately 2.7 miles of 657 ACAR 115 kV line from Smyrna to the Marietta #9 tap with 1033 Composite Conductor @ 200 C 115 kV construction. From that point rebuilt the Marietta #9 tap line using 1033 Composite @ 200 C, a distance of 0.72 miles

Supporting Statement: The Smyrna - North Marietta 115 kV (white & black) lines have thermal problems for different reasons. These problems develop with Plant McDonough's increased power generation along with the second 230/115 kV transformer at Smyrna. Smyrna becomes a stronger source more power flows along the North Marietta – Smyrna (white & black) 115 KV lines.

Windy Hill, Terrell Mill, and Winterthur are served radially from Smyrna. When this line is open at Smyrna the back up source is a tap of off the North Marietta – Smyrna (white) line. In this condition, the load on the line exceeds the lines 149 MVA thermal limit. This happens at peak load and normal generation.

Losing the Smyrna – North Marietta 115 kV (white) line loads the black line to 115% of the 149 MVA thermal limit. This happens at shoulder load and Bowen unit #4 off line.

Need Date: 2011

Project Name: **DECATUR - MORELAND AVE 115-KV UPGRADE**

Description: Upgrade approximately 1.6 miles of 50C-sagged 636 ACSR conductor from Decatur to Kirkland for 100C operation.

Supporting Statement: By 2011 (coincident with additional load at Emory), loss of the Grady - Moreland Ave. or Emory - Scottdale 115-kV line will cause the Decatur - Moreland Ave line to exceed its 50C rating of 96 MVA.

Need Date: 2011

Project Name: **HAMPTON SECOND, 115-KV, 45 MVAR, CAPACITOR BANK INSTALLATION**

Description: Install a second, 115-kV, 45 MVAR capacitor bank at the Hampton 115/25/12-kV substation.

Supporting Statement: A second 45 MVAR capacitor bank will be necessary, at the Hampton substation, to maintain an acceptable 115-kV voltage level when the O'Hara to S.Griffin line is outaged from the O'hara side.

Need Date: 2011

Project Name: **MCDONOUGH 4&5 NETWORK IMPV (ATK-NSD & NSD-NW 115 KV RECONDS)**

EAST REGION PROJECTS

Description: Rebuild and reconfigure the Atkinson - Northside Drive and Northside Drive - Northwest 115 kV lines to increase capacity between Northside Drive and Northwest.

Supporting Statement: By 2012, McDonough generation will increase from 520 MW to 2520 MW. This project is one of several that are needed to prevent contingency overloading of various facilities associated with delivery of the generation from Units 4 and 5.

Need Date: 2011

Project Name: **USMC TAP 115KV RECONNECTION PROJECT**

Description: Disconnect the USMC Supply Depot tap line from the Albany-P&G 115 kV line and connect it to the Albany-Radium Springs (GTC) 115 kV line. Install an RLB switch on the tap line near the main line. Install a two-stage, 22.5 MVAR/stage capacitor bank at P&G.

Supporting Statement: Loss of either end of the Albany-P&G-Mitchell 115 kV line overloads the other end and causes a 8%+ voltage drop at P&G until Cooper Tire load is switched to another source.

Need Date: 2011

Project Name: **DEPTFORD - KRAFT 230-KV PROJECT**

Description: Build a 230-kV circuit from Plant Kraft to Deptford with new construction and by rebuilding the 46-kV circuit from Millhaven to River Street to Deptford to 230-kV. Convert River Street to 230-kV and connect to the Deptford - Kraft 230-kV line. Install a 400 MVA, 230/115-kV transformer at Deptford. Convert Remlers Corner 46/13.8-kV substation to 115-kV and connect to the Deptford - Magnolia 115-kV line.

Supporting Statement: By 2011, loss of a Deptford - Kraft 115-kV line will load the other line to 103% of its 216 MVA, conductor/cable rating. Loss of both lines will load the Millhaven 115/46-kV transformer to 122% of its 112 MVA nameplate rating and the Boulevard - 52nd Street line to 116% of its 181 MVA conductor rating.

Need Date: 2011

Project Name: **KRAFT - MCINTOSH 230-KV BLACK/WHITE LINE RECONDUCTOR**

Description: Rebuild the Kraft - McIntosh 230-kV Black & White lines (double circuit towers) with 2-795 ACSR conductor, (16 miles).

Supporting Statement: By 2011, loss of a Kraft - McIntosh 230-kV line will load the remaining Kraft - McIntosh 230-kV line to 101% of its 509 MVA conductor rating.

Need Date: 2011

Project Name: **GTC: BURNT CHURCH 115-KV CAPACITOR**

Description: GTC -- Add a 2x15 MVAR, 115-kV capacitor bank.

EAST REGION PROJECTS

Supporting Statement: By 2011, loss of the Little Ogeechee - Richmond Hill tap 115-kV line section will produce the following voltage drops:

Richmond Hill 115-kV	99.0%	--->	93.9%
Daniel Siding 115-kV	99.0%	--->	94.1%
Burnt Church 115-kV	97.6%	--->	92.6%
Keller 115-kV	97.1%	--->	92.0%

Need Date: 2011

Project Name: **SHARON SPRINGS 230/115-KV SUBSTATION**

Description: 1. GTC -- Cumming - Sharon Springs 230kV line. Purchase ROW and construct 230 kV line. (~6.6 miles)
2. GTC -- Sharon Springs 230/115kV Substation. Install a 230/115kV, 300 MVA transformer with two (2) 115kV line breakers. Terminate 115kV lines to Hopewell and Suwanee.
3. Cumming 230/115kV Substation. -- Install a 230kV breaker and terminate the Sharon Springs 230kV line.

Supporting Statement: In 2011, the Suwanee - Old Atlanta Road segment of the Hopewell - Suwanee 115kV line will load to 105% of its 207 MVA rating for the loss of the Hopewell - Brandywine segment and the Hopewell - Brandywine section loads to 104% of its 207 MVA rating for the loss of the Suwanee - Old Atlanta Road section. By 2012 the Brandywine - Highway 141 segment loads beyond its rating. By 2014, the Blankets Creek - Holly Springs 115kV tie line will load to 109% of its 301 MVA rating for the loss of the Hopewell 230/115kV transformer.

Need Date: 2011

Project Name: **KATHLEEN - PERRY 115-KV LINE IMPROVEMENT**

Description: Reconductor the Kathleen - Perry 115-kv line (13.5 miles) with 795 ACSR conductor.

Supporting Statement: By 2011, under contract sales conditions, loss of the Bonaire - Hwy 96 115-kv line section loads the Cagle 115 kV, 350 AAC switch jumpers to 103% of their 114 MVA conductor rating.

Need Date: 2011

Project Name: **GAINESVILLE #2 230/115 KV BANK RE-RATES**

Description: Re-rate both Gainesville #2 230/115 kV autobanks.

Supporting Statement:

Need Date: 2011

Project Name: **MCDONOUGH 4&5 NETWK IMPV (GRADY-MORELAND AVE 115 KV RECOND)**

Description: Reconductor the Grady - Moreland Avenue (approximately 3.5 miles of 636 ACSR) with conductor capable of 1500 amps.

Supporting Statement: By 2012, McDonough generation will increase from 520 MW to 2520 MW. This project of one of several that are needed prevent contingency overloading of various facilities associated with delivery of the generation from Units 4 and 5.

Need Date: 2011

EAST REGION PROJECTS

Project Name: **BREMEN - POSSUM BRANCH 115 KV LINE RECONDUCTOR**

Description: Reconductor 5 miles of 115 kV line with 1033 ACSR from Bremen to Mt Zion.

Supporting Statement: In 2011, under peak conditions and Yates #3 off line, loss of the Hickory Level - Sandhill segment of the Hickory Level - Possum Branch 115 kV line causes the Bremen - Mt. Zion section of the Bremen - Possum Branch 115 kV line to load to 106% of its 100C rating, 188 MVA.

Need Date: 2011

Project Name: **DOUGLASVL - POST ROAD & EAST PT - CAMP CK 115 KV LINE RECOND**

Description: Reconductor the 115 KV line from Douglasville to near the Camp Creek Junction, approximately 4.5 miles, of 397 ACSR using conductor capable of at least 1200 amps.

Supporting Statement: Loss of the Post Road end of the Douglasville - Post Road 115 kV line overloads the Douglasville end. Also, the East Point - Ben Hill Jct. 115 kV line section will overload if Anneewakkee is shifted to this line after loss of the normal source (Douglasville - Post Road).

Need Date: 2011

Project Name: **PROVIDE FOR LOOP SERVICE TO WALTON #6 115 KV SUBSTATION**

Description: Tap the Ponce de Leon - Snellville 115 KV line and install jumpers at Walton EMC #6.

Supporting Statement: The underground 115 KV line cannot carry the entire substation load.

Need Date: 2012

Project Name: **CLERMONT JUNCTION - SOUTH DAHLONEGA 230KV LINE**

Description: Build a 20 mile of 230 kV line, 100C 1351 ACSR from South Dahlonega to Clermont Junction. This will complete the Clermont Junction - Dawson Crossing 230kV line.

Supporting Statement: This project will provide a transmission source into the Middlefork area and prevent overloads on its underlying 115 kV system.

Need Date: 2012

Project Name: **MCDONOUGH 6 NETWORK IMPV (DAVIS ST-NORTHWEST 115 KV RECOND)**

Description: Reconductor the Davis Street - Northwest 115 kV line (approximately 2.6 miles of 1033 AAC) with conductor capable of at least 1500 amperes.

Supporting Statement: By 2012, McDonough generation will increase from 520 MW to 2520 MW. This project of one of several that are needed prevent contingency overloading of various facilities associated with delivery of the generation from Unit 6.

Need Date: 2012

Project Name: **FIFE CAPACITOR ADDITION**

Description: Add a two stage, 30 MVAR per stage, (60 MVAR total), 115-kV capacitor bank to the Fife 115-kV bus.

EAST REGION PROJECTS

Supporting Statement: By 2012, loss of the Yates end of the Morrow -Yates 115-kV line could cause voltage levels to drop below 105-kV, from a starting level of over 111-kV, at the Owens Corning 115-kV bus #2. This voltage variation violates an ITS Planning Standard guideline for a non-regulated transmission bus.

Need Date: 2012

Project Name: **LAWRENCEVILLE - MOON ROAD 115-KV RECONDUCTOR**

Description: Reconductor 2.98 miles of 636ACSR conductor on the Lawrenceville - Moon Road 115-kV line from Lawrenceville - Lawrenceville City #3 using 1351 ACSR conductor.

Supporting Statement: Studies indicates that this section of line will load to 104 % of its 188 MVA rating in 2012 with the loss of the Bay Creek 230/115kV autobank or the Bay Creek - Moon Road 115kV line.

Need Date: 2012

Project Name: **LAKE OCONEE 115-KV NETWORK LINE**

Description: GPC:
Install two additional 115-kv line breakers in the Greensboro 115/12-kV substation on the Madison Primary and Union Point 115-kV lines.

GTC:
Reconductor 7.53 miles of 4/0 ACSR conductor with 636 ACSR conductor on the Eatonton - Lick Creek 115-kV line segment.

Supporting Statement: The Warrenton - Union Point 115-kv line will load to its 124 MVA conductor rating under normal conditions and exceed its 124 MVA conductor rating for multiple contingencies.

Need Date: 2012

Project Name: **NORCROSS - OCEE 230KV LINE RECONDUCTOR**

Description: 1. Norcross - Ocee 230kv Line
Reconductor 3.21 miles of 1033 ACSR, 230-kV line from Norcross - Berkeley Lake using Bundled (2) 1351 ACSR conductor at 100 degree C.
2. Berkeley Lake 230/25-kV Substation
Replace 1590 AAC jumpers with a jumpers capable of carrying 1700 A.

Supporting Statement: The Norcross - Ocee 230-kV line was originally constructed in 1966 using 1033 ACSR conductor with a 100 degree C rating of 509 MVA. Studies indicates that the section of this line from Norcross - Berkely Lake will reach its rating by 2012. The contingencies that causes this section of line to load to 101% of its 100 degree C rating is the loss of the Alpharetta end of the Alpharetta - Ocee 230kV line.

Need Date: 2012

Project Name: **NORCROSS - SUWANEE 115-KV LINE PROJECT**

Description: Norcross - Suwanee 115-kV Line
Rebuild 1.49 miles of 2-4/0CU and .15 mile of 795 ACSR with 1622 ACSR/TW from the Old Atlanta Road junction to the Sugarloaf tap.

EAST REGION PROJECTS

Supporting Statement: In 2012, the Sugarloaf tap - Old Atlanta Road junction section of the Norcross - Suwanee 115-kV line loads to 103% of its 181 MVA rating for the loss of the Norcross end of this line. The Old Atlanta Road junction to Suwanee section of this line is constructed using 1622 ACSR/TW.

Need Date: 2012

Project Name: **DORCHESTER 230-KV PROJECT**

Description: Re-conductor the Daniel Siding - Little Ogeechee section of the Hinesville Primary - Little Ogeechee 115-kV line with 2-636 ACSR conductor. Install a 2nd 300 MVA, 230/115-kV transformer in the Dorchester 230/115-kV substation.

Supporting Statement: Loss of the Dorchester 230-kV source will load the Little Ogeechee - Richmond Hill section of the Hinesville - Little Ogeechee 115-kV line to 103% of its 255 MVA conductor rating

Need Date: 2012

Project Name: **SOUTH COWETA - YATES 115 KV LINE RECONDUCTOR**

Description: Reconductor 18 miles of 477 ACSR, 115 kV line with 795 ACSR.

Supporting Statement: In 2011, under peak conditions and McDonough #4 off line, loss of the Yates end of the S. Coweta - Yates 115 kV line causes the South Coweta - Sharpesburg section of the S. Coweta - Yates 115 kv line to load to 105% of its 100C rating, 155 MVA.

Need Date: 2012

Project Name: **MELDRIM 230/115-KV TRANSFORMER PROJECT**

Description: Construct a 230-kv bus at Meldrim and install a 230/115-kv, 300 MVA transformer. Loop the Blanford - Little Ogeechee 230-kv Black/White lines through Meldrim.

Supporting Statement: By 2012, loss of the McIntosh - Treutlen 115-kv line section loads the Dean Forest - Meldrim 115-kv line to 101% of its 155 MVA rating. By 2014, loss of the McIntosh - Treutlen 115-kv line section drops the 115-kv bus voltage at Treutlin to 93%.

Need Date: 2012

Project Name: **GOSHEN - WAYNESBORO 115-KV RE-CONDUCTOR**

Description: MEAG - Re-conductor the Goshen - Waynesboro 115-kV line, 18.7 miles, with 1033 ACSR.

Supporting Statement: Loss of the Wilson - Waynesboro 230-kV line (2016 Gross w/ Hatch #1 off) will load the Goshen - Waynesboro 115-kV line to 112% of its 124 MVA conductor rating.

Need Date: 2012

Project Name: **MCDONOUGH 6 NETWORK IMPV (INSIDE DR-SPRING ST 115 KV RECOND)**

Description: Reconductor the Northside Drive - Spring Street 115 kV line (approximately 1.2 miles of 1033 AAC) with conductor capable of carrying 1500 amperes. Reuse the existing structures. No substation work required at this time.

EAST REGION PROJECTS

Supporting Statement: By 2012, McDonough generation will increase from 520 MW to 2520 MW. This project of one of several that are needed prevent contingency overloading of various facilities associated with delivery of the generation from Unit 6.

Need Date: 2012

Project Name: **LITTLE OGEECHEE - NEW DUTCHTOWN - TRUMAN PARKWAY 115-KV**

Description: Build the New Dutchtown 115/13.8-kV substation.
Build the Little Ogeechee - New Dutchtown 115-kV line (9.0 miles) by 6-1-2010 and the New Dutchtown - Truman Parkway 115-kV line (5.7 miles) by 6-1-2012.

Supporting Statement: By 2012, loss of the Little Ogeechee - Ferguson 115-kV line will load the Little Ogeechee - Grove Point 115-kV line to 108% of its 181 MVA conductor rating. By 2014, loss of the Little Ogeechee - Grove Point 115-kV line will load the Little Ogeechee - Ferguson 115-kV line to 104% of its 181 MVA conductor rating.

This is a joint Transmission/Area Planning project.
Presently, over 180 MW of load is served via three 115/46-kV sources with 46-kV lines rated at 67 MVA. Loss of the White Bluff 115/46-kV transformer and picking the load up from the Ferguson 115/46-kV transformer will load the Ferguson 115/46-kV transformer to 117% of its 112 MVA nameplate rating and the Ferguson - Oakhurst 46-kV line to 177% of its 67 MVA rating. Contingency analysis was done at the 80% load level.

The Little Ogeechee - New Dutchtown - Oakhurst - Olgethorpe Mall - Truman Parkway 115-kV line is part of the 46-kV improvement plan for the area. Conversion of these three substations will shift 91 MVA of load from the over-stressed 46-kV system to the 115-kV system.

Need Date: 2012

Project Name: **STATESBORO - JIMPS 115KV RADIAL LINE**

Description: Re-conductor the Statesboro - Langston section of the Claxton - Statesboro 115-kV line with 795 ACSR.

Supporting Statement: By 2012, loss of the Vidalia - Loop Road 115-kV line section will load the Statesboro - Langston section of the Claxton - Statesboro 115-kV line to 101% of its 124 MVA conductor rating. (Gross-Kraft 3)

By 2014, loss of the Statesboro - Langston section of the Claxton - Statesboro 115-kV line will drop the voltage at Langston from 100.1% to 90.8% and the voltage at Jimps to 91% from 98.3%.
(Contract - Kraft 3)

Need Date: 2012

Project Name: **JESUP - LUDOWICI PRIMARY 115-KV RE-CONDUCTOR**

Description: Re-conductor the Rayonier - North Jesup - Jesup section (7.5 miles of 336 ACSR) of the Jesup - Ludowici Primary 115-kV line with 795 ACSR conductor.

Supporting Statement: Loss of the McCall Road - Thalmann 500-kV line (2012 Gross Hatch #2 off) will load the Rayonier - North Jesup - Jesup sections of the Jesup - Ludowici Primary 115-kV line to more than 100% of its 124 MVA conductor rating.

EAST REGION PROJECTS

Need Date: 2012

Project Name: **MCDONOUGH 6 NETWORK IMPV (REMOVE PEACHTREE 115 KV)**

Description: At Peachtree, convert all load transformers to 230 kV highside, remove the 230/115 kV transformer (Bank A) and add two 230 kV bus tie breakers in series. Tie the Boulevard and Rottenwood Creek 115 kV lines together outside the substation.

Supporting Statement: By 2012, McDonough generation will increase from 520 MW to 2520 MW. This project of one of several that are needed prevent contingency overloading of various facilities associated with delivery of the generation from Unit 6.

Need Date: 2012

Project Name: **MCDONOUGH 6 NETWK IMPV (JACK MCDONOUGH-NW B&W 230 KV UPG)**

Description: This projects upgrades the two existing 230 kV lines from 50C rating to a 75 C rating increasing their capacity from 306 to 481 MVA.

Supporting Statement: By 2012, McDonough generation will increase from 520 MW to 2520 MW. This project of one of several that are needed prevent contingency overloading of various facilities associated with delivery of the generation from Unit 6.

Need Date: 2013

Project Name: **OHARA - RIVERDALE 115KV LINE RECONDUCTOR**

Description: Reconductor 1.6 miles of 636 ACSR w/1033 ACSR from O'hara to the Corinth Rd. substation, on the Riverdale - O'hara 115-kV line. Also, change the normally open point to be between the Tara Tap and Valley Hill, (instead of between the Tara Tap & the Tara substation).

Supporting Statement: By 2013, an outage of the Line Creek autobank, (or 230-kV line), causes the O'hara to King St. section, of the Riverdale - O'hara 115-kV line, to overload its 100°C, 188MVA rating.

Need Date: 2013

Project Name: **DOUGLASVILLE 230/115 KV TRANSFORMER BANK PROJECT**

Description: GTC - Replace Douglasville 230/115 kV transformer "A" (280 MVA nameplate) with a 400-MVA transformer. Replace lowside bank breaker, switch, jumpers, buswork as needed to match the new transformer rating

Supporting Statement: Loss of the Post Road - Mason Creek 115 kV line section loads the existing lowside equipment (1590 AAC jumpers, bus) to 102% of its rating, and the transformer to 99% of its bonus rating, by 2013.

Need Date: 2013

Project Name: **CHATSWORTH 230/25KV SUBSTATION**

Description: Convert the existing substation to 230kV highside operation.

Supporting Statement: In 2013, a loss of the East Dalton - Gravitt 115kV line segment causes low voltage at Gravitt (94.6%) and Chatsworth (95.2%). The change in voltage at Gravitt is 5.7% under contingency during the shoulder case with Bowen 4 offline.

EAST REGION PROJECTS

Need Date: 2013

Project Name: **NORCROSS - LAWRENCEVILLE 230KV LINE RECONDUCTOR**

Description: Reconductor the remaining 1033 ACSR conductor on the Norcross - Lawrenceville 230-kV line between Boggs Road and Lawrenceville.

Supporting Statement: During 2003 the section of this line between Norcross and Boggs Road was reconducted to 1351 SSAC at 160 degree C. Studies indicates that the remaining section of the Norcross - Lawrenceville 230kV line between Lawrenceville and Boggs Road can overload with the loss of the South Hall 500/230-kV transformer and all the Buford Dam Hydro Generation off line.

Need Date: 2013

Project Name: **MCEVER ROAD - SHOAL CREEK 115KV UPGRADE**

Description: Upgrade the 50C 2-4/0 copper segments of the line to 75C operation (approximately 12 miles).

Supporting Statement: In 2013, the McEver Rd - College Square segment of the McEver Rd - Shoal Creek 115 kV line will overload for a loss of the Shoal Creek - Gwinnet WFP section of the same line, while the Gaines Ferry - Lakeside WTP section will overload for a loss of the South Hall 500/230 kV transformer bank.

Need Date: 2013

Project Name: **HOPEWELL - MCGRAU FORD SECOND 230-KV LINE**

Description: GPC - Construct a second 230-kV line between McGrau Ford and Hopewell.
GTC - At Hopewell, terminate the new McGrau Ford 230kV line

Supporting Statement: In 2013, after the reactor is removed, the Hopewell - Mcgrau Ford 230kV line will load beyond its capacity with the loss of the Bowen - Mosteler Spring 500kV line. The reactor need to be removed to serve the load growth on the 230kV system in the area between Hopewell and Ocee.

Need Date: 2013

Project Name: **ORANGE 115KV CAPACITOR**

Description: Install a 2-stage, 60 MVAR 115kV capacitor bank.

Loss of the Holly Springs - New Light section of the Hopewell - Holly Springs 115-kV will result in 93.0% voltage on the line. The voltage deviation is 6.6%.

Supporting Statement: Loss of the Holly Springs - New Light section of the Hopewell - Holly Springs 115-kV will result in 93% voltage on the line.

Need Date: 2013

Project Name: **2008 BASE REACTIVE POWER SUPPORT**

Description: Install capacitors to improve the overall voltage profile in Georgia in 2008 at the following locations:

- Northpark 230kV (120 MVAR), and
- South Augusta 115 kV (60 MVAR - 2nd capacitor bank; total: 2x60 MVAR).

EAST REGION PROJECTS

Supporting Statement: This project is continuation of an attempt to levelize and to improve the voltage profile in the Georgia ITS by optimally installing a number of shunt capacitors in the system. A 180 MVA of shunt reactive support is proposed for allocation in 2008.

Need Date: 2013

Project Name: **HOLLY SPRINGS - HOPEWELL 115KV LINE RECONDUCTOR**

Description: Reconductor 3.32 miles of 636 ACSR conductor from Hopewell - Birmingham on the Holly Springs - Hopewell 115-kV lines using 2-795 ACSR conductor.

Supporting Statement: The Holly Springs - Hopewell 115-kV line is 21.0 miles in length and is constructed using 636 ACSR and & 762 ACSR/TW. Studies indicates that in 2013 the 636 ACSR section of line between Hopewell and Birmingham will load to 102% of its 188 MVA rating with the loss of the Holly Springs to New Light section of this line.

Need Date: 2013

Project Name: **DU - NELSON 230/115KV SUBSTATION**

Description: Add a third 140 MVA 230/115kV autotransformers in parallel with the existing 230/115kV autotransformers.

Supporting Statement: The existing autotransformers have name plate ratings of 140 MVA . By 2013 a loss of bank #1 will cause bank #2 to load 6 MVA over its contingency rating of 180 MVA (103%).

Need Date: 2013

Project Name: **SOUTH CLEVELAND 230/115 KV PROJECT**

Description: Build a new 230/115kV substation near South Cleveland. Build a new 230kV line from Clermont Jct. 230/115 kV to South Cleveland.

Supporting Statement: By 2013, loss of the Clermont Jct. 230/115 kV transformer bank will cause the different segments of the Clermont Jct. - Gainesville #1 115 kV line and Dahlenega - Dawson Crossing 115 kV line to exceed their 182 MVA and 124 MVA contingency rating, respectively.

Need Date: 2013

Project Name: **GAINESVILLE #2 230/115 KV AUTOBANK REPLACEMENTS**

Description: Replace the existing 230/115 kV, 280MVA transformer banks at Gainesville #2 with 400 MVA autobanks and low-side bank breakers.

Supporting Statement: As of 2013, Gainesville #2-1 230/115 kV, 280 MVA, transformer bank will exceed its potential 330 MVA bonus ratings by 2% for a loss of Gainesville #2-2 - South Hall 230 kV line. This transformer bank will also overload for a loss of the Gainesville #2-2 230/115 kV transformer bank.

As of 2013, Gainesville #2-2 230/115 kV, 280 MVA, transformer bank will almost reach its potential 339 MVA bonus ratings (99%) for a loss of Gainesville #2-1 230/115 kV transformer bank or Gainesville #2-1 - South Hall 230 kV line and for a loss of Gainesville #2-1 230/115 kV transformer bank.

Need Date: 2013

EAST REGION PROJECTS

Project Name: **GTC: HIGHWAY-54 230/115-KV TFM. ADDITION - (GTC ONLY)**

Description: Install a 230/115-kV transformer at the Highway 54 substation. Also, install 115-kV circuit breakers and terminate two new 115-kV lines from Tyrone and Harp Rd., a distance of approximately 4.0 and 4.5 miles respectively. Add approximately 1.5 miles of 115-kV conductor to loop the Tyrone substation into the Line Creek - S.Coweta line. Install three 115-kV circuit breakers at Tyrone and at Harp Rd.

Supporting Statement: By 2013, loss of one end of the O'Hara - S.Coweta 115-kV line will overload the other end. The same situation will occur on the Line Creek - S.Coweta 115-kV line.

Need Date: 2013

Project Name: **N. AMERICUS - N. TIFTON 115 KV LINE UPGRADE**

Description: On the N. Americus - N. Tifton 115 kV line, upgrade 2.9 miles of 336 ACSR to operate at 100C from Sylvester Jct. to Ashburn Jct.

Supporting Statement: In 2013, under contract sales, the loss of the N. Americus - E. Americus Jct. section of the N. Americus - N. Tifton 115 kV line causes the Sylvester Jct. - Ashburn Jct. to load to 101% of its 63 MVA design rating.

Need Date: 2013

Project Name: **YATES - NEWMAN #3 115-KV (RADIAL) LINE RECONDUCTOR PROJECT**

Description: Upgrade 6.4 miles of 477 ACSR, 115 kV line to operate at 100C from Yates to Roscoe Jct.

Supporting Statement: By summer 2013, during the summer "Hot Weather" case, the Yates to Roscoe Jct. 115kV line section will load to 105% of the Rate A rating of 119 MVA.

Need Date: 2013

Project Name: **JCT57A 230/115-KV PROJECT**

Description: At the Griffin Road tap, JCT 57A, acquire necessary land for a 230/115-kV substation. Construct a 230/115-kV substation using a 300 MVA, 230/115-kV transformer. Terminate the Dorsett 230-kV radial line.

Supporting Statement: By 2013, several 115 kV lines in the south Macon area will exceed their design ratings under contingency.

Need Date: 2013

Project Name: **DEAL BRANCH - STATESBORO PRIMARY 115-KV BLACK RECONDUCTOR**

Description: Re-conductor the Statesboro Primary - Fair Road section (1.5 miles) of the Deal Branch - Statesboro Primary 115-kV Black line with 636 ACSR conductor.

Supporting Statement: By 2015, loss of the Statesboro Primary - North Statesboro 115-kV section of the Deal Branch - Statesboro Primary 115-kV White line will load the Statesboro Primary - Fair Road section of the Deal Branch - Statesboro Primary 115-kV Black line to 103% of its 124 MVA conductor rating (C15v2V1).

Need Date: 2013

Project Name: **WILMINGTON ISLAND - WHITEMARSH 115-KV RECONDUCTOR**

EAST REGION PROJECTS

Description: Re-build the Wilmington Island - Whitemarsh 115-kV line section, 3.6 miles, with 795 ACSR conductor.

Supporting Statement: By 2013, normal hot weather loading will reach 101% of the Rate A, 85 MVA conductor rating.

Need Date: 2013

Project Name: **UNION POINT PRIMARY 115 KV CAPACITOR BANK**

Description: Install a 2nd 30 MVAR capacitor bank with the associated equipment. The size of the existing capacitor bank is 33 MVAR.

Supporting Statement: Voltage support is needed during post-contingency conditions.

Loss of the East Social Circle - Rutledge line segment of the East Social Circle - Union Point Primary 115 kV line will cause unacceptable voltage drops (> 5% for unregulated buses and > 8% for regulated buses) and/or unacceptable post-contingency voltages (< 90%) at almost all substations fed from this line as of 2009.

Need Date: 2013

Project Name: **ARKWRIGHT 115 KV SWITCHING STATION BUS REPLACEMENT**

Description: Replace the 115 kV, 350 Cu bus at Arkwright 115 kV Switching Station with 3000 amp equivalent.

Supporting Statement: In 2013, at peak load and Mitchell #3 off, loss of the Rumble Road end of the Forrest Rd. - Rumble Rd. 115 kV line causes the 115 kV bus at Arkwright 115 kV switching station to load to 132% of its contingency rating (145 MVA)

Need Date: 2013

Project Name: **ARKWRIGHT-LLOYD SHOALS 115 KV LINE UPGRADE**

Description: Upgrade 37 miles of 397ACSR and 336 ACSR 115 kV line to operate at 100C from Arkwright to Lloyd Shoals.

Supporting Statement: In 2013, under shoulder loading conditions with Bowen #4 off line, loss of the Klondike - Scherer 500 kv line causes the Arkwright - Lloyd Shoals 115 kv line to load to 105% of its 75C rating, 100 MVA.

Need Date: 2013

Project Name: **WEST BRUNSWICK - ALTAMAHA 115 KV LINE**

Description: Acquire ROW and construct 8 miles of 795 ACSR CSP 115 kV line from West Brunswick to Altamaha. Split the Altamaha bus with a normally-open RLB switch, with the load fed from McManus. Operate normally-open between Magnolia Bluff and Sapelo River (switch 974611 at Sapelo). Close switch 513771. Terminate on a new breaker at West Brunswick and on a new BLD switch at Altamaha.

Supporting Statement: Voltages are poor when all loads along the McManus-Riceboro 115 kV line are served from Riceboro.

Need Date: 2013

Project Name: **ATHENS AREA 115 KV LINE RECONDUCTOR PROJECT**

EAST REGION PROJECTS

Description: Reconnector the 336 ACSR line segments line from Georgia Square Jct to Mars Hill Jct (approximately 0.5 mi) and from Mars Hill Jct. to Mars Hill (approximately 2.3 mi) with 636 ACSR. Replace switches and jumpers as necessary.

Supporting Statement: As of 2013, loss of the East Watkinsville - Watkinsville 115 kV segment of the Bethabara - East Watkinsville 115 kV line will cause Mars Hill Jct. - Mars Hill and Mars Hill Jct. - Georgia Square Jct. 115 kV sections of the Bethabara - East Watkinsville 115 kV line to load up to 103% of their 124 MVA contingency rating.

Need Date: 2013

Project Name: **2013 BASE REACTIVE POWER SUPPORT**

Description: Install capacitors to improve the overall voltage profile in Georgia in 2010:

- Fife 115 kV 30 MVar and
- Deptford 115 kV 2x60 MVar (Note: Replace the existing 36 MVar + 45 MVar).

Supporting Statement: This project is continuation of an attempt to levelize and to improve the voltage profile in the Georgia ITS by optimally installing a number of shunt capacitors in the system. A 69 MVar of new shunt reactive support is proposed for allocation in 2010.

Need Date: 2013

Project Name: **GTC - EAST WATKINSVILLE 230/115 KV TRANSFORMER REPLACEMENT**

Description: GTC - Replace the existing 298 MVar transformer bank with a 400 MVar transformer bank.

Supporting Statement: In 2013, E. Watkinsville 230/115 kV transformer bank will load up to 114% of its 298 MVA nominal rating for a loss of the East Watkinsville - Barnett Shoals 230 kV segment of the Athena - East Watkinsville 230 kV line.

Need Date: 2014

Project Name: **SOUTH METRO ATLANTA PROJECT PHASE 3**

Description: Rebuild the existing O'hara - Bonanza - Hampton -McDonough 115-kV line with double circuit, 1351 acsr conductor at 230-kV specs. to create a new 230-kV circuit from O'Hara to McDonough, (construct the Hampton to McDonough line section first for a 2013 completion) and add a 230/115 kV, 400 MVA autobank at McDonough - (GPC) Serve the Greenwood Park and Dailey Mill loads, at 115-kV, from McDonough.

Also, construct a 115-kV line between the Peeksville and Ingram substations, approximately 6.5 miles - (GTC) and add three breakers at the Locust Grove substation to terminate lines from McDonough, S.Griffin and Ola, - (GPC)

EAST REGION PROJECTS

Supporting Statement: Loss of the Klondike end of the Klondike - Ola 230-kV line will overload the Ola - Porterdale 115-kV line. The operating procedure to shift the Greenwood Park load off of McDonough and onto the O'Hara - S. Griffin 115-kV line, will no longer be an option around the 2013 time frame. Also, by 2014, loss of the Jonesboro - Stockbridge 230-kV line, (or the Stockbridge autobank), will overload the Jonesboro - Stockbridge 115-kV line. Conversely, loss of the Jonesboro end of the Jonesboro - Stockbridge 115-kV line will overload the Stockbridge autobank. In addition, loss of the S.Griffin end of the McDonough - S.Griffin 115-kV line will overload the opposite end from McDonough to Locust Grove.

Need Date: 2014

Project Name: **GORDON - NORTH DUBLIN 230KV LINE**

Description: GPC - Build the Gordon - N Dublin 230 kV line, 32 miles, using 1351 ACSR conductor. Terminate the line at Gordon.
GTC - At North Dublin, terminate the new Gordon 230-kv line.

Supporting Statement: A Static Var System (SVS) will be installed at North Dublin by 6/1/2005. Depending on load growth, the SVS is expected to support the Dublin area until the 2014. At which time the Gordon - North Dublin 230-kv line will be needed in addition to the SVS to support the local voltage profile under contingency situations.

GPC Operations is currently operating the Gordon - North Dublin 115-kv line normally open.

Need Date: 2014

Project Name: **EAST WALTON 500/230KV PROJECT - PHASE I**

Description: GTC - Construct a 500 kV line from the new Rockville 500 kV Switching Station to the new East Walton 500/230/115 kV substation. Construct 230kV lines from East Walton to the new Jack's Creek Switching Station, from East Walton to the new Bostwick Switching Station, and from Bethatbara to East Walton (White).

GPC - Construct a new Rockville 500 kV Switching Station. Construct a new 230kV line from East Walton to Bethabara (Black).

MEAG - Construct a 230 kV line from the LPM Monroe to Cornish Mountain.

Supporting Statement: This project is required to support the expected generation expansion plan in the Wallace Dam area. With the projected generation in service, loss of the Klondike - Scherer 500 kV line will overload the Klondike - O'Hara 500 kV line.

Need Date: 2014

Project Name: **EAST POINT 230/115 KV TRANSFORMER REPLACEMENT PROJECT**

Description: Replact the existing 280 mva, 230/115 kV transformers with 400 mva 230/115 kV transformers

Supporting Statement: There are two 230/115 kV transformers at East Point which have a rerated capacity of 298 MVA. Losing one of the two transformes results in the overload of the remaining transformer - worst case in 106% of the 298 rerated capacity.

Need Date: 2014

EAST REGION PROJECTS

Project Name: **ATHENA - EAST WATKINSVILLE 115KV PROJECT**

Description: Reconductor 1.84 miles of 336 ACSR to 1033 ACSR from East Athens to STR 108/31 on the East Watkinsville to East Athens line segment.

Replace the 600A Switch 021061 at East Athens with a 1200A Switch and increase the jumpers to carry at least 1259A @ 95F ambient.

Supporting Statement: As of 2014, loss of the E. Watkinsville - Barnett Shoals 230 kV line segment of the Athena - E. Watkinsville 230 kV line will cause the East Athens - East Watkinsville line segment to overload.

Need Date: 2014

Project Name: **MOUNTAIN VIEW PROJECT**

Description: Convert JCPENNEY Substation to 230 kV operation and add two 230/115 kV autotransformers. Loop the Morrow - Union City 230 kV line into JCPENNDY by building 2.2 miles of new 230 kV line. Create a new high capacity (1351 ACSR) JCPENNEY - Hartsfield-Jackson 115 kV line. Reconfigure system to tie (1) JCPENNEY to Hartsfield_Jackson to Delta to Mountain View (2) Mountain View to Hapeville (3) JCPENNEY to Mountain View (4) East Point - JCPENNEY (white) (5) East Point - JCPENNEY (black) (5) Morrow - JCPENNEY (white) and (6) Morrow - JCPENNEY (black).

Supporting Statement: Loss of the Morrow - Mountain View 115 kV line causes the East Point - Mountain View 115 kV line to load to 118 % of the lines 397 ACSR 100 C rating of 140 MVA. Also, losing the East Point - Mountain View 115 kV line causes Morrow - Mountain View 115 kV line to load to 105% of the lines 762 ACSR 100 C rating of 207. These thermal problems are solved by providing another source, JC Penny 230/115 kV substation, and looping the East Point – Morrow and East Point – Mountain View 115 kV lines as well as the Mountain View - Morrow line 115 kV line into it.

Need Date: 2014

Project Name: **EAST CARROLLTON 230/115 KV SUBSTATION PROJECT**

Description: Construct the E. Carrollton 230/115 kV substation looping the Hickory Level - Yellowdirt 230 kV line and the Possum Branch - Yates 115 kV line.
GPC - Reconductor 1.5 miles of 477, 115 kv line with 1351 ACSR, 115 kv line from Holox - E. Carrollton - Southwire - Carrollton #2 Jct.

Supporting Statement: In 2014, loss of the Hickory Level - Sand Hill section of the Hickory Level - Possum Branch 115 kV line causes the Mt. Zion - Jonesville Jct. section of the Bremen - Possum Branch 115 kV line to load to 101% of its 100C rating (188 MVA). Loss of either the Bremen or Hickory Level 230/115 kV transformers will cause the other transformer to exceed its rating (400 MVA)

Need Date: 2014

Project Name: **DOUGLASVILLE - W MARIETTA 115 KV LINE REBUILD PROJECT**

Description: Reconductor approximately 2.3 miles of existing 477 ACSR, 115 kV line from Douglasville to Lithia Springs using 795 ACSR conductor rated at 100 degrees C.

Supporting Statement: The Douglasville - Austell section of the Douglasville to West Marietta 115 kV line loads to 105% of its 477 ACSR 100C rating (155 MVA) caused by the loss of the West Marietta end of the line.

EAST REGION PROJECTS

Need Date: 2014

Project Name: **SOUTH CLEVELAND 115 KV CAPACITOR INCREASE**

Description: Increase the size of the 2 capacitor banks from 15 MVAR each to 30 MVAR each.

Supporting Statement: Voltage support is needed during contingency conditions.

Need Date: 2014

Project Name: **EAST WATKINSVILLE 115KV CAPACITOR**

Description: GTC - Install a new 60 MVAR 115kV capacitor bank at the East Watkinsville Substation.

Supporting Statement: Voltage support is needed during contingency conditions in the Athens area. The list of the critical single element contingencies includes loss of the E. Watkinsville 230/115 kV transformer bank, the Athens 2 - W. Athens line segment of the Athens 2 - E. Watkinsville 115 kV line, and the Athena - N. Athens line segment of the Athena - E. Watkinsville 115 kV line

Need Date: 2014

Project Name: **LINE CREEK 115-KV CAPACITOR ADDITION**

Description: Add a second stage, 30MVAR, 115-kV capacitor, to the existing single-stage capacitor bank, at the Line Creek 230/115-kV substation.

Supporting Statement: By 2014, loss of the 230/115-kV auto transformer, at Line Creek, could cause voltage levels to drop around 109-kV, from a starting level of nearly 115-kV, at the Owens Corning 115-kV bus #1. This voltage variation violates an ITS Planning Standard guideline for a non-regulated transmission bus.

Need Date: 2014

Project Name: **VACAR INTERFACE PROJECT**

Description: Build a new 230 kV line (2-1351 ACSR @ 100C) from Hartwell area to Athena 230 kV (approximately 40 miles long).

Supporting Statement: Loss of the Norcross-Oconee 500kV line will overload the Lexington - Russell Dam 230kV line section. This overload is a limit to the VACAR interface.

Need Date: 2014

Project Name: **NORTH GEORGIA DYNAMIC VOLTAGE & REACTIVE SUPPORT PROJECT**

Description: Install a Static Var System in North Georgia (locations to be determined)

Supporting Statement: North Georgia is rapidly growing and has very limited generation support. Recent studies have shown that a normally cleared three-phase fault in the North Georgia area will cause the voltages in this area to fall below 80% of nominal for several seconds. This condition could cause uncontrolled, widespread loss of load. The solution will require dynamic reactive support to maintain an acceptable voltage to address the NERC Category "B" fault induced delayed voltage recovery issues in Northeast Georgia.

Need Date: 2014

Project Name: **BURNT HICKORY 115-KV LOOP**

EAST REGION PROJECTS

Description: Install a 115-kV PCB at Cartersville and construct 1.3 miles of 795 A 115-kV line along existing right of way to take the Burnt Hickory Loop off the Bowen - Cartersville 115-kV Line.

Supporting Statement: By 2014, a loss of the Bowen - Cartersville 115kV line will cause low voltages at Browns Farm (93.4%), Burnt Hickory (92.3%), Cartersville # 12 (91.2%) and Cartersville # 5 (91.7%). A loss of the Cartersville - South Acworth 115kV Line will cause low voltage at Cartersville #1 (93.3%) and Cartersville # 4 (93.6%). This project will construct a radial 115kV line out of Cartersville Primary that will be used to serve the Burnt Hickory 115kV loop and provide additional switching capability for System Operations.

Need Date: 2014

Project Name: **BUCKHEAD AREA 230 KV CAPACITOR PROJECT**

Description: Install a 230 kV, 120 MVAR, single-stage capacitor bank

Supporting Statement: By 2014, the total substation load on the single 230 kV line running from Bull Sluice to Boulevard is 450 MW and 210 MVAR. This project is intended to displace the import of reactive power into the metro area as well as support the local bus voltage.

Need Date: 2014

Project Name: **AUSTIN DRIVE - MORROW 115-KV REBUILD PROJECT PHASE-2**

Description: Reconductor the River Road - Rainbow Dr. - Austin Dr. sections of the Austin Drive - Morrow 115 kV line, (7.1 miles of 336 ACSR; 5/16" steel OHGW), with 795 ACSR conductor rated for 100 C operation and 3/8" steel OHGW.

Supporting Statement: By the year 2015, loss of the Morrow end of the Austin Dr. - Morrow 115-kV circuit, will cause an overload on the Austin Dr. to Rainbow Dr. section. Also, an outage of the Austin Dr. 230/115-kV transformer will overload the River Road to Rainbow Dr. section.

Need Date: 2014

Project Name: **BARNEYVILLE - DOUGLAS 115 KV LINE UPGRADE**

Description: Upgrade the Nashville #1-Nashville #2 section for 100°C operation.

Supporting Statement: Loss of the North Tifton end of the North Tifton-Pine Grove 115 kV line causes the Barneyville-Douglas 115 kV line (Nashville #1-Nashville #2 section) to load to 101% in 2012.

Need Date: 2014

Project Name: **BONAIRE - EASTMAN PRIMARY 115-KV LINE UPGRADE**

Description: On the Bonaire - Eastman Primary 115-kV line, upgrade the Cochran tap, 1.5 miles of 336 ACSR, to 100 C.

Supporting Statement: Serving Hawkinsville and Industrial Boulevard from Cochran Primary during peak load conditions loads the Cochran Primary tap line to 102% of its 63 MVA conductor rating.

Need Date: 2014

Project Name: **CLIFTONDALE 230KV NETWORK AREA PROJECT**

EAST REGION PROJECTS

Description: Extend the Clifftondale 230 kv tap line to the Line Creek Substation creating a Camp Creek - Line Creek 230 kV line. This project converts Ono to 230 kV, rebuilds the Ono tap line to 230 kV, terminates the Ono 230 KV line at Line Creek , expands Line Creek to terminate 3- 230 kV lines on breakers, expands Camp Creek to terminate 3 - 230 KV line on breakers , extends the 230 KV line from Ono to Clifftondale, loops the East Point - Villa Rica 230 kV line into Camp Creek , and loops the Yates - Union City 230 kV line into Line Creek.

Supporting Statement: There are two 230 kV lines between Union City and East Point. Losing the white line causes the loading on the black line to 101% of the lines 1590 ACSR, 100C rating of 656 MVA. These lines are also susceptible to loss of the Villa Rica 500/230 KV transformer.

Need Date: 2014

Project Name: **MEAG: PALMYRA - SLAPPEY DRIVE 115 KV LINE RECONDUCTORING**

Description: Reconductor 2.5 miles of 100°C-sagged 477 ACSR, from Slappey Drive to the Albany #2 Jct, with 795 ACSR.

Supporting Statement:

Need Date: 2014

Project Name: **MOON ROAD -SNELLVILLE 115KV RECONDUCTOR**

Description: Reconductor 3.69 miles of 115-kV, 636 ACSR line using a conductor rated for at least 1400 A. The section of line to be reconducted is from Snellville - Five Forks on the Moon Road - Snellville 115kV line. Five Forks 115/25kV Substation. Replace the 750 AAC main bus and the 636 ACSR jumpers.

Supporting Statement: The Moon Road - Snellville 115-kV line is constructed with 636 ACSR and is rated for 188 MVA. Loss of Bay Creek - Moon Road 115kV line at Bay Creek will cause the Snellville - Five Forks section of the Moon Road - Snellville 115kV line to load to 102% of its 188MVA rating.

Need Date: 2014

Project Name: **ARKWRIGHT - S. MACON 115 KV (BLACK) RECONDUCTOR**

Description: Reconductor 1.6 miles of 115 kV line with 795 ACSR from S. Macon to Ocmulgee Jct. section of the Arkwright - S. Macon 115 kV (Black) 115 kV line.

Supporting Statement: In 2011, under contract sales conditions, loss of the S. Macon end of the Forrest Rd. - S. Macon 115 kV line causes the South Macon end of the Arkwright - S. Macon (Black) 115 kV line to load to 102% of its contingency rating (124 MVA)

Need Date: 2014

Project Name: **ADAMSVILLE - DOUGLASVILLE 230 KV LINE RECONDUCTOR PROJECT**

Description: Reconductor about 1.5 miles of sections of 1033 AAC conductor in the 4 mile long line between Adamsville and Bakers Ferry.

Supporting Statement: Loading on Adamsville - Bakers Ferry section of the Adamsville - Douglasville 230 line exceeds the lines 397 MVA capacity after losing the Douglasville - Villa Rica 230 kV line.

Need Date: 2014

EAST REGION PROJECTS

Project Name: **LLOYD SHOALS - SOUTH GRIFFIN 115KV RECONDUCTOR**

Description: Reconductor the section of the Subject Transmission Line from South Griffin Substation to Jackson Substation (18.62 miles). Remove 3 # 3/0 copper conductor and install 3-795 ACSR Conductor, sagged for 100 Degree C operation, in its place. Also, replace 1-3/8" OHGW with a new 3/8" OHGW. Include update on profile from Land. Replace hardware and poles as necessary.

Supporting Statement: This conductor has reached the end of its useful life. This copper conductor is stressed to its maximum design temperatures.

Need Date: 2014

Project Name: **DOUGLASVILLE-W. MARIETTA 115KV UPGRADE**

Description: Upgrade the 2.0 mile long line segment from West Mableton to the West Mableton tap off of the Douglasville - West Marietta 115 kV line and modify West Mableton's termination to be consistent with increased thermal capacity of the tap line.

Supporting Statement: By 2016 the combined substation load of West Mableton, Mableton, and Fountaine Road will match the 79 MVA rating of West Mableton's 477 ACSR @ 50 C tap line off of the Douglasville - West Marietta 115 kV line. This means that when Mableton and Fountaine Road are served radially from West Mableton the tap line will experience thermal problems. Upgrading the line to 100C increases its capacity to 155 MVA.

Need Date: 2014

Project Name: **MCCONNELL AREA TRANSMISSION IMPROVEMENT PROJECT**

Description: Rebuild the transmission line from McConnell Road to Due West a distance of 4.7 miles replacing the existing 636 ACSR conductor with 1033 composite conductor.

Supporting Statement: The McConnell Road – Due West 115 kV line loads to 103% of the 636 ACSR's 100C rating of 188 MVA when Bowen #4 is off and the South Acworth end of the South Acworth – McConnell Road line is open. This project rebuilds the line with 1033 ACCR/TW @ 200C giving it a rating of 388 MVA doubling the existing capacity.

Need Date: 2014

Project Name: **EAST SOCIAL CIRCLE - MONROE 115 KV - PHASE II**

Description: Reconductor the 2-336 ACSR conductor (5.93 miles in length) of the East Social Circle - Monroe 115 kV line with a 1351 ACSR conductor.

Supporting Statement: In 2014, loss of the Bay Creek 230/115 kV transformer bank loads Monroe - Social Circle Jct. line segment of the East Social Circle - Monroe 115 kV line to 104% of its contingency rating 248 MVA.

Need Date: 2014

Project Name: **ARKWRIGHT - N. MACON 115KV RECONDUCTOR**

Description: Reconductor 2.4 miles of 115 kV line with 795 ACSR from Riverside Dr. to Macon Water Works on the Arkwright - N. Macon 115 kV line.

EAST REGION PROJECTS

Supporting Statement: In 2013, during the summer peak hour with contract sales to Florida and no units off, closing in the Macon Water Works to Ocmulgee St. 115 kV line segment and serving down to Ocmulgee St. from Arkwright causes the Riverside Drive - Macon Water Works line segment, constructed with 3/0 Cu, to load to 101% of its design rating (49 MVA).

Need Date: 2014

Project Name: **EAST DALTON - TUNNEL HILL 115KV LINE THERMAL UPGRADE**

Description: Upgrade the 50 Deg.C, 336acsr conductor on the E.Dalton - Tunnel Hill 115-kV line between Ringgold and NGEMC/Whitfield for 100 Deg.C operation, (a distance of approximately 10 miles).

Supporting Statement: Ringgold-Varnell section of the East Dalton - Tunnel Hill 115kV Line overloads to 116% of the 63MVA line rating in 2014; also the Varnell-NGA-Whitfield segment overloads to 106% .

Need Date: 2014

Project Name: **DOUGLASVILLE - HICKORY LEVEL (FAIRPLAY TAP) UPGRADE**

Description: GTC For Reference Upgrade 5.1 miles of 336 ACSR, 115 kV line to operate at 100C from Fairplay Jct to Fairplay 115/12 kV substation off the Douglasville - Hickory Level 115 kv line.

Supporting Statement:

Need Date: 2014

Project Name: **BUZZARD ROOST 230/115 KV PROJECT**

Description: Install a 230/115 kV transformer at Buzzard Roost and connect to the Douglasville - Greenbriar - East Point at Factory Shoals and open between Gordon Road and Gordo Road tap. This networks Buzzard Roost to Douglasville.

Supporting Statement: Losing the Douglasville - Groover Lake 115 kV line causes a thermal problem along 10.2 miles from East Point to Hightower Tap. The introduction of a 230/115 kV source in the center of Douglasville - Gordon Road (99% of the load) allows the Gordon Road - Greenbriar - East Point to be opened eliminating the problem.

Need Date: 2014

Project Name: **BLANKETS CREEK - HOLLY SPRINGS 115KV LINE**

Description: Construct a second Blankets Creek - Holly Springs 115kV line and install a 115kV breaker at Blankets Creek and Holly Springs

Supporting Statement: The Blankets Creek - Holly Springs 115kV tie was constructed using 1351 ACSR conductor with a rating of 301 MVA. In 2014 with the loss of the Hopewell 230/115kV transformer this 115kV tie will load to 109% of its rating. Also, with the loss of this 115kV tie the Nelson - Holly Springs 115kV line will load to 108% of its rating.

Need Date: 2014

Project Name: **LAWRENCEVILLE - NORCROSS 115KV RECONDUCTOR**

EAST REGION PROJECTS

Description: Reconductor approximately 5.85 miles of 636 ACSR conductor with 1351ACSR conductor from Northwoods to Norcross City #3 on th Lawrenceville - Norcross 115kV line.

Supporting Statement: Studies indicates that in 2014, the Northwoods to Norcross City #3 section of the Lawrenceville - Norsross 115kV line will load to 107 % of its 188 MVA rating for the loss of the Lawrenceville - Norcross 230kV line.

Need Date: 2014

Project Name: **ATKINSON - NORTHSIDE DRIVE 115 KV LINE IMPROVEMENT**

Description: Reconductor the existing Atkinson - Northside Drive line from Atkinson to Chattahoochee with 795 ASSC for 1500 amps.

Supporting Statement: Lose of the 115kV line between Northside Drive and Northwest loads the 1033 ACAR's to 102% of its 199 MVA maximum capability.

Need Date: 2014

Project Name: **SWEETBOTTOM 230KV JUMPER REPLACEMENT**

Description: Replace the 1590 AAC jumpers at Sweetbottom with 2000 AAC jumpers.

Supporting Statement: Studies indicates that in 2014, the loss of the Lawrenceville - Norcross 230kV line at Norcross will load the 1590 AAC jumpers at Sweetbottom to 108% of its 596 MVA rating.

Need Date: 2014

Project Name: **VILLA RICA - WEST MARIETTA 230 KV LINE IMPROVEMENT PROJECT**

Description: At Villa Rica replace the jumpers on the West Marietta 230 kV line with ones capable of at least 2000 amps. At West Marietta replace the 1590 AAC jumpers on the Villa Rica 230 kV line with jumpers capable of at least 2000 amps.

Supporting Statement: Jumpers at Villa Rica, Cedar Mountain, and West Marietta limit the Villa Rica - West Marietta 230 kV line to 497 MVA replacing the jumpers enables the line to be rated for 602 MVA, the conductors's capacity.

Need Date: 2014

Project Name: **TIGER CREEK GENERATION TRANSMISSION IMP. PROJECT PHASE 3**

Description: At S. Macon, replace the existing 230/115 kV transformers with a 400 MVA transformers and associated substation equipment.

Supporting Statement: Make improvements necessary for firm transmission service for the 600 MW Progress Ventures Tiger Creek generation for serving GPC native load.

Need Date: 2015

Project Name: **DACULA 115-KV CAPACITOR BANK**

Description: Install a 115kV, 30 MVAR capacitor Bank at the Dacula Substation.

Supporting Statement: The loss of the Lawrenceville - Winder 115kV line in Winder will result in low voltage in the Dacula area. The pre-contingency to post-contingency voltage variation is 5% or greater.

Need Date: 2015

EAST REGION PROJECTS

Project Name: **COLERAIN 230 KV CAPACITOR BANK**

Description: Install a 2-step, 60 MVAR per step capacitor bank.

Supporting Statement: Loss of the Duval-Thalman 500 kV line causes 21 buses to fall below 95%, including 3 non-regulated buses that drop more than 5%.

Need Date: 2015

Project Name: **NORTHWEST GEORGIA 500 KV EXPANSION PLAN PHASE II**

Description: Acquire 40 miles of right of way and construct a 500kV line from Alabama to Mostellar Springs. Construct Mostellar Springs 500kV Switching Station.

Supporting Statement: This project provides transmission improvements associated with anticipated generation requirements. THIS PROJECT IS UNDER STUDY!

Need Date: 2015

Project Name: **FAULT INDUCED VOLTAGE STABILTY PROJECT**

Description: This project provides for faster relaying, faster breakers and dynamic VARs that can mitigate the voltage depressions to acceptable time limits. Specific substations that need upgrades are to be determined.

Supporting Statement: Three phase faults on the transmission system may cause "fault induced voltage depressions" that last for many seconds at high load levels.

Need Date: 2015

Project Name: **OFFERMAN THIRD 230/115 KV TRANSFORMER**

Description: Install a third 140-MVA 230/115 kV transformer, lowside bank breaker, and associated metering, relaying and controls.

Supporting Statement: Loss of one transformer loads the other to 107%-109% in 2015 (2007-series contract case)

Need Date: 2015

Project Name: **GORDON - SANDERSVILLE #1 115-KV LINE UPGRADE**

Description: Upgrade the Deestep - Robin Spring (7.6 miles) section of the Gordon - Sandersville 115-kv line to 100C.

Supporting Statement: By 2015, loss of the Branch - Gordon 230 kv line will load the following section as follows:
Deepstep - Robin Spring --> 101% of 63 MVA rating .
The Robin Spring - Sandersville #1 section was upgraded to 100C in 1996.

Need Date: 2015

Project Name: **BRUNSWICK - EAST BEACH 115 KV UPGRADE PHASE II**

Description: Upgrade 1.6 miles of 50C-sagged 247 AAC conductor, between Frederica Jct and Sea Island, for 75C operation.

Supporting Statement: This section loads to 100% of its 104°F rating in the 2015 hot weather case with no contingency.

Need Date: 2015

EAST REGION PROJECTS

Project Name: **CRISP COUNTY AREA IMPROVEMENTS - PHASE II**

Description: Construct a 12-mile, 115 kV line using 636 ACSR from Crisp #2 (Warwick) to Crisp #8, and add 3 - 115 kV breakers at Warwick creating the N. Americus - Crisp #2,N. Tifton - Crisp #2 and Crisp #2 - Pitts 115 kV lines.

Supporting Statement: Loss of Pitts to Crisp #1 will result in unacceptable low voltages in several substations in Crisp County area. Loss of Crisp #4 to the Crisp #8 tap point will result in unserved load. Creating a new breakered 115 kV network line from Pitts to Warwick will break the 58 mile long N. Americus to N. Tifton line and providing better reliability and service to this area.

Need Date: 2015

Project Name: **MCINTOSH 230/115-KV TRANSFORMER PROJECT**

Description: Install a 300 MVA, 230/115-kV transformer in parallel to the existing 280 MVA 230/115-kV transformer.

Supporting Statement: By 2015, base loading on the McIntosh 230/115-kV transformer will be 100% of its 280 MVA nameplate and 94% of its 319 MVA bonus rating.

Need Date: 2015

Project Name: **GAINESVILLE #2 - MCEVER RD. 115 KV RECONDUCTOR**

Description: Rebuild the Gainesville #2 - McEver Rd 115 kV line (approximately 5.3 miles long) with 1033 ACSR conductor constructed for 100 C operation.

Supporting Statement: As of 2015, a loss of the Gainesville #1 - Linwood line segment will overload the Chicopee - Gainesville #2-2 line segment (5% in 2015) over its 188 MVA contingency rating. As of 2016, the other segment of the same line, the Chicopee - Oakwood, wil overload (9% in 2016) for a loss of the same line segment (i.e., Gainesville #1 - Linwood).

Need Date: 2015

Project Name: **HOPEWELL - WOODSTOCK 115 KV TRANSMISSION IMPROVEMENT PROJECT**

Description: Build a second 115 kV line from Hopewell to Birmingham (Ga) approximately 3.3 miles long. Removing Birmingham's load from the spring of substation between Holly Springs and Hopewell

Supporting Statement: The substation loads served between Holly Springs and Hopewell will exceed the capacity of the TL from Holly Springs and Newlight. This projects builds a second line from Hopewell and Birmingham removing Birminghams load (66 MVA) from the Hopewell - Holly Springs line. Thus eliminating the thermal and voltage problem associated with losing between Hopewell and Birmingham. Instead of forcing five heavily loaded substatons to be served radially out of Holly Springs to Newlight, the system need only serve four whose total load does not exceed the lines capacity.

Need Date: 2015

Project Name: **DEAL BRANCH - SYLVANIA 115-KV UPGRADE**

Description: Upgrade the Deal Branch - ITT Grinnel - Clito section, 1.7 miles, of the Statesboro Primary - Sylvania 115-kV line to 100 C.

EAST REGION PROJECTS

Supporting Statement: By 2015, loss of the Millen Primary - Millen City section of the Millen Primary - Sylvania 115-kV line will load the Deal Branch - ITT Grinnel - Clito section, 1.7 miles, of the Statesboro Primary - Sylvania 115-kV line to 101% of its 63 MVA conductor rating.

Need Date: 2016

Project Name: **MIDDLEFORK 500/230-KV PROJECT**

Description: Install a 500/230 kV transformer at Middlefork and loop the South Hall-Oconee 500kV line.

Supporting Statement: This project is South Hall generation dependent project. Studies indicate that addition of 800 MW of new generation near South Hall on 500 kV system will cause thermal problems in the area.

Need Date: 2016

Project Name: **ROSWELL 230/115-KV TRANSFORMER PROJECT**

Description: Construct a 230-kV line from Parkaire to the Roswell substation, (approximately 4.5 miles) . Install a 230/115-kV transformer and low side bank breaker at Roswell. Terminate the new 230-kV line from Roswell and split the 230-kV bus with a bus-tie breaker

Supporting Statement: By 2016, the loss of the North Marietta - Roswell 115-kV line at North Marietta will load the Lassiter Road - Roswell 115kV line to 110% of its 174 MVA rating. By 2017, this same contingency will load the Parkaire -Roswell 115kV line to 102% of its 248 MVA rating and the Parkaire 230/115-kV transformer(298 MVA rating) to 101%.

Need Date: 2016

Project Name: **LAWRENCEVILLE - WINDER 115-KV LINE**

Description: Reconductor approximately 7.06 miles of 636 ACSR conductor with 1351 ACSR conductor from Winder to Dacula.

Supporting Statement: Supporting Statement:
The Lawrenceville - Winder 115-kV line consists of 17 miles of 636 ACSR conductor at 100 degree C with a rating of 188 MVA. In 2016, the Winder to Dacula section of this line will load beyond its 188 MVA rating with the loss of the Lawrenceville - Winder 230kV line.

Need Date: 2016

Project Name: **LAWRENCEVILLE - LAWRENCEVILLE #4 115-KV TAP**

Description: GPC - Reconductor 1.10 miles of 115-kV, 336 ACSR conductor using a conductor capable of carrying at least 1000 amps from Lawrenceville to North Lawrenceville. MEAG- Lawrenceville Primary - Replace the 750 AAC jumpers with 1590 AAC jumpers.

EAST REGION PROJECTS

Supporting Statement: The Lawrenceville #4 substation is served on a tap off the Bay Creek - Moon Road 115kV line. The alternate source of feed to Lawrenceville #4 is from the Lawrenceville Primary substation by way of the Blaze Recycling junction. In 2016, if the Lawrenceville #4 tap is lost, the normal open point between Lawrenceville #4 and Blaze Recycling will be closed in order to serve this load from Lawrenceville Primary. The section of 336 ACSR conductor between Lawrenceville and North Lawrenceville will then load to its 124 MVA rating.

Need Date: 2016

Project Name: **MEAG LAFAYETTE - LAFAYETTE #3 115KV LINE**

Description: Install a 115kV breaker at LaFayette and construct 2.1 miles of 115kV, 795 ACSR line from LaFayette to LaFayette #3.

Supporting Statement: In 2016 opening the Lafayette - Lafayette #3 line segment causes low voltages at: Riegel Textile (94.7%), Lafayette #3 (93.5%), and NGEMC Roper (93.4%).

Need Date: 2016

Project Name: **CENTER - COMMERCE 115KV LINE RECONDUCTOR**

Description: Reconductor the Center - Commerce 115kV line from Center to the J.M.Huber substation with 795 ACSR conductor sagged to 100C operation. Replace switches and jumpers as needed.

Supporting Statement: In 2016, loss of the Middle Fork 230/115kV transformer causes the Center - Nicholas line segment to exceed the conductor 124 MVA contingency rating by 10%. In 2017, the same contingency will cause 3% overload of the J.M. Huber - Nicholas line segment.

Need Date: 2016

Project Name: **LAWRENCEVILLE - WINDER 230KV LINE RECONDUCTOR**

Description: Rebuild the Lawrenceville - Winder 230kV line (15.31 miles) using 1351 ACSS conductor with a 170 degree C rating of 833 MVA.

Supporting Statement: Load projections indicate that by 2016 this line will overload its 509 MVA rating with the loss of the Norcross - South Hall 500kV Line.

Need Date: 2016

Project Name: **COVINGTON #3 - EAST SOCIAL CIRCLE 115 KV LINE RECONDUCTOR**

Description: Reconductor 636 ACSR section(s) of the Covington #3 - East Social Circle 115 kV line between Social Circle and East Social Circle (approximately 2.6 miles) with 1033 ACSR. Replace 750 AAC jumpers at Social Circle with 1590 AAC jumpers.

Supporting Statement: The East Social Circle - Social Circle line segment of the Covington #3 - East Social Circle 115 kV line will exceed by 2% over its contingency rating of 187 MVA for a loss of the Branch - Eatonton 230 kV line.

Need Date: 2016

Project Name: **SOUTH HALL - SUWANEE 230KV**

EAST REGION PROJECTS

Description: Build South Hall - Suwanee 230kV Line. Construct 19 miles of 230KV line from South Hall - Suwanee using 1622 ACSR/TW conductor. Loop this line thru the Rock Quarry 230kV Substation. GTC will convert the Rock Quarry Substation to 230kV high side. Rock Quarry 115kV to 230KV conversion. Request GTC to convert this substation to 230kV high side. South Hall 500/230KV substation Install a 230KV PCB to terminate the Suwanee 230KV Line. Suwanee 230/115kV substation. Install a 230KV PCB to terminate the 230kV line to South Hall.

Supporting Statement: The construction of the South Hall - Suwanee 230kV line is related to the South Hall Generation. The conversion of the Rock Quarry substation to 230KV high Side will relieve the overloaded condition on the North AWRF - Shoal Creek 115kV line. The overload on the North AWRF - Shoal Creek 115kV line occurs with the loss of either end of this line.

Need Date: 2016

Project Name: **ARKWRIGHT 230/115 KV PROJECT**

Description: Add a 230/115 kV transformer and 230 kV buswork at the Arkwright switching station and construct 33 miles of 230 kV, bundled 795 ACSR line from Arkwright to W. Milledgeville.

Supporting Statement: Multiple 115-kV and 230-kV line overloads and low voltages in the Macon area during peak load conditions with no CT generation running in the Macon area.

Need Date: 2016

Project Name: **OHARA 500/230 KV TRANSFORMER CAPACITY INCREASE**

Description: This project adds a second 2000 MVA, 500/230 kV transformer at the O'Hara substation.

Supporting Statement: The loss of the 500/230 kV transformer at O'Hara causes Union City's 500/230 kV transformer to load 113% of its 1344 MVA name plate rating, matching its 1518 MVA bonus rating.

Need Date: 2016

Project Name: **SLAPPEY DRIVE 230/115 KV PROJECT**

Description: Convert the Mitchell-Slappey Drive 115 kV line to 230 kV operation. Rebuild 0.4 miles of 336 ACSR WHF line at the Mitchell end using 1351 ACSR on SHF structures. At Mitchell, reterminate the line on a new 230 kV breaker and remove 115 kV breaker 168. At Slappey Drive, acquire additional land and expand the substation. Install a 400-MVA, 230/115 kV transformer and lowside bank breaker. Construct 5.0 miles of new 636 ACSR 115 kV line from Slappey Drive to Gillionville. Terminate on a new 115 kV breaker at Slappey Drive. This creates the second Palmyra-Slappey Drive 115 kV line.

Supporting Statement: Existing transmission is inadequate to serve the 300 MVA of 115 kV load between Albany, Palmyra and Slappey Drive (not counting the load at those sustations themselves). Loss of the Mitchell 230/115 kV autobank overloads the 400-MVA Albany autobank (no bonus rating) beginning in 2016. Loss of the Albany 230/115 kV autobank overloads the 400-MVA Mitchell autobank (no bonus rating) beginning in 2015. Various 115 kV line sections are also overloaded by 2016.

Need Date: 2016

EAST REGION PROJECTS

Project Name: **MCCONNELL-VILLA RICA 115KV LINE RECONDUCTOR**

Description: Reconductor 4.07 miles on the McConnell Road - Highway 120 segment of the McConnell Road - Villa Rica 115kV line, from 636ACSR to 1351ACSR.

Supporting Statement: Beginning in 2016, the 636ACSR on McConnell Road - Highway 120 overloads to 103% for loss of the Villa Rica - New Georgia segment with a critical unit off.

Need Date: 2016

Project Name: **BLANDFORD - MCINTOSH 230-KV BLACK/WHITE RECONDUCTOR**

Description: Re-conductor the Blandford - McIntosh 230-kV Black/White lines (8.6 miles) with 2-795 ACSR conductor.

Supporting Statement: By 2016, loss of one of the Blandford - McIntosh 230-kV lines will load the other line to 102% of its 509 MVA conductor rating.

Need Date: 2016

Project Name: **PLANT VOGTLE NETWORK IMPROVEMENT PROJECT**

Description: Construct a 500 kV line from Plant Vogtle to the new Thomson Primary 500/230kV substation.

Supporting Statement: To support the expansion of Plant Vogtle, a new 500 kV line will be required from Plant Vogtle to Thomson Primary to address transmission thermal and generator stability issues.

Need Date: 2016

Project Name: **EMORY 115-KV CAPACITOR ADDITION**

Description: Install a 115-kV, 45mvar capacitor bank in the Emory substation.

Supporting Statement: By 2016, contingency voltage levels, in the Emory area, will be close to the minimum acceptable levels.

Need Date: 2016

Project Name: **WOODSTOCK 230/115 KV BANK #2 PROJECT**

Description: At Woodstock install a second 230/115 KV BANK

Supporting Statement: The South Ackworth, Woodstock area is running out of 230/115 KV transformer capacity. By 2016, losing the Woodstock transformer causes thermal and voltage problems in the area. A second transformer at Woodstock would fix this problem.

Need Date: 2016

Project Name: **MORROW - UNION CITY 230 KV LINE CAPACITY IMPROVEMENT PROJECT**

Description: Replace the line traps, line switches and jumpers, as necessary, at Union City and Morrow on the Union City - Morrow 230 KV, (black & white), lines to improve capacity.

Supporting Statement: Loss of the O'Hara 500/230-kV autobank will overload the Morrow - Union City 230-kV black & white lines due to 1200 amp line termination equipment at the Morrow and Union City substations. These improvements will increase the capacity of the line from 497 MVA to 602 MVA.

EAST REGION PROJECTS

Need Date: 2016

Project Name: **NORCROSS - DERING CIRCLE 230 KV LINE IMPROVEMENT**

Description: This project replaces the line traps between Norcross and Dering Circle. These traps limit the lines capacity to 497 MVA where the lines capacity is 602.

Supporting Statement: This project replaces the line traps between Norcross and Dering Circle. These traps limit the lines capacity to 497 MVA where the lines capacity is 602.

Need Date: 2016

Project Name: **MILLEDGEVILLE - W. MILLEDGEVILLE 115 KV LINE RECONDUCTOR**

Description: Reconductor 5.2 miles of 115 kV line with 636 ACSS/TW to operate at 160C from Fishing Creek to W. Milledgeville.

Supporting Statement: With contract sales to Florida and a critical unit off, loss of the Branch - Gordon 230 kV lines causes the Fishing Creek to W. Milledgeville section of the Milledgeville - W. Milledgeville 115 kV line to load to 102% of its emergency rating (188 MVA)

Need Date: 2016

Project Name: **THOMASTON - YATES 115 KV LINE RECONDUCTOR - PHASE 2**

Description: Reconductor 2.2 miles of 115 kV line with 1033 ASCR from Thomaston to N. Thomaston

Supporting Statement: In 2016 gross sales and a critical unit off, the loss of the Yates end of the Thomaston - Yates 115 kV line causes the Thomaston - N. Thomaston section of the Thomaston - Yates 115 kV line to load to 101% of its emergency rating (155 MVA)

Need Date: 2016

Project Name: **EAST SOCIAL CIRCLE - SNELLVILLE 230KV RECONDUCTOR**

Description: Reonductor approximately 11.76 miles of 1351 ACSR conductor with a conductor rated for 2000 amps on the East Social Circle - Snellville 230kV line form East Social Circle to Walnut Grove.

Supporting Statement: Planning studies identified numerous contingencies that result in overload on the East Social Circle - Snellville 230kV line by 2016. The worst contingency will be the loss of the Klondike - Norcross 500kV line.

Need Date: 2016

Project Name: **EATONTON - PORTERDALE 230KV LINE REACTOR**

Description: Install a 2%, 230 kV reactor in the Eatonton - Porterdale 230 kV line at Eatonton

Supporting Statement: In 2016, loss of the Eatonton - E. Social Circle 230 kV line causes the Eatonton - Porterdale 230 kv line to exceed its design rating (602 MVA).

Need Date: 2016

Project Name: **LLOYD SHOALS / PORTERDALE UPGRADE PROJECT**

EAST REGION PROJECTS

Description: Upgrade, to 100 Deg. C, 2.3 miles of 397 ACSR conductor from Porterdale to the S. Covington Jct.on the Lloyd Shoals - Porterdale 115-kV line - (GPC)
Also, add a 2-stage, 20 MVAR per stage, (40 MVAR total), 115-kV capacitor bank at S.Covington.

Supporting Statement: By 2016, loss of the Arkwright end of the Arkwright to Lloyd Shoals 115-kv line will overload the Porterdale to S.Covington line section. Voltage support will also be necessary during the contingency.

Need Date: 2016

Project Name: **GTC - FAIRVIEW 115-KV CAPACITOR ADDITION**

Description: Add a two-stage, 115-kV capacitor bank, (30 MVARs per stage), at the Fairview substation

Supporting Statement: Transmission voltage levels drop below acceptable levels under contingency operation

Need Date: 2016

Project Name: **OLA 230-KV CAPACITOR ADDITION**

Description: Add a two-stage, 230-kV capacitor bank, (60 MVARs per stage), at the Ola substation

Supporting Statement: Transmission voltage levels drop below acceptable levels under contingency operation

Need Date: 2017

Project Name: **MIDDLEFORK - TOCCOA 115KV RECONDUCTOR**

Description: Reconductor the Middlefork - Toccoa 115kV line with 1351 ACSR (approximately 11 miles). Replace jumpers and switches as needed.

Supporting Statement: Loss of the Avalon - Eastanollee 115kV line segment causes the Middlefork-Toccoa 115kV line to load up to 102% of its 182 MVA rating.

Need Date: 2017

Project Name: **DOUGLAS - LAKE BEATRICE 115KV LINE UPGRADE**

Description: Upgrade 3.3 miles of 336 ACSR, from Douglas to Bushnell, for 100°C operation.

Supporting Statement: Loss of the Stump Creek end of the Lake Beatrice-Stump Creek 115kV line loads the Douglas end of the Douglas-Lake Beatrice 115kV line to 103% of its 50°C rating beginning in 2017.

Need Date: 2017

Project Name: **BONAIRE - SOUTH MACON 115-KV LINE UPGRADE**

Description: Upgrade the Bonaire - South Macon 115-kv line from Bonaire to the Jefferson tap, 16.2 miles of 397 ACSR WHF, to 100C. No substation work required.

Supporting Statement: Loss of the Bonaire - South Macon 230-kv line during contract soles conditions with Branch #4 off will load the Bonaire end of the Bonaire - S. Macon 115 kV line, 16.2 miles, 107% of 71 MVA conductor rating.

Need Date: 2017

EAST REGION PROJECTS

Project Name: **ROBERTS ROAD 230 KV CONVERSION PROJECT**

Description: Convert the existing 115/25 kV substation to a 230/25 kV Substation

Supporting Statement: The total load between South Acworth and North Marietta is served by a single 115 kV line. The load exceeds 210 MVA and the line is rated for 207 MVA. Roberts Road serves over 70 MVA. Moving this to the 230 kV system significantly relieves the 115 kV system.

Need Date: 2017

Project Name: **ARKWRIGHT - S. MACON (WHITE) 115 KV RECONDUCTOR**

Description: Reconductor 2.4 miles of 115 kV line with 795 ACSR from Arkwright to Town Creek Jct on the Arkwright - S. Macon (White) 115 kV line.

Supporting Statement: Under contract sales conditions, loss of the S. Macon end of the Forrest Rd. - S. Macon 115 kV line causes the Arkwright - Towncreek Jct. 115 kv line segment to load to 102% of its contingency rating. (124 MVA)

Need Date: 2017

Project Name: **BOLTON STREET - DEPTFORD 115-KV RECONDUCTOR**

Description: Re-conductor the Deptford - Bolton Street 115-kV line; 3.0 miles of SSP, 927 ACAR; with 1033 ACSR.

Supporting Statement: By 2017, loss of the Deptford - Remlers Corner 115-kV line will load the Deptford - Bolton Street 115-kV line to 101% of its 181 MVA conductor rating.

Need Date: 2017

Project Name: **CLARKSBORO - WINDER PRIMARY 230 KV RECONDUCTOR**

Description: Reconductor the Clarksboro - Winder 230 kV line with 1351 ACSR.

Supporting Statement: In 2017, a loss of the Middle Fork - South Hall 500 kV line will cause the Clarksboo - Winder Primary 230 kV line to exceed its contingency rating of 433 MVA.

Need Date: 2017

Project Name: **KLONDIKE - SCHERER 500-KV SERIES REACTOR PROJECT**

Description: Install a 3-phase set of 4000amp, 500-kV, series reactors, in the Scherer 500-kV line termination

Supporting Statement: In 2017, during shoulder load conditions with a major generating unit out of service, loss of the O'Hara - Scherer 500-kV line causes the Klondike - Scherer 500-kV line to exceed its maximum rating of 3429 MVA.

Need Date: 2017

Project Name: **ARKWRIGHT - S. MACON (WHITE) 115 KV RECONDUCTOR**

Description: Reconductor 2.4 miles of 115 kV line with 795 ACSR from Arkwright to Town Creek Jct on the Arkwright - S. Macon (White) 115 kV line.

Supporting Statement: Under contract sales conditions, loss of the S. Macon end of the Forrest Rd. - S. Macon 115 kV line causes the Arkwright - Towncreek Jct. 115 kv line segment to load to 102% of its contingency rating. (124 MVA)

EAST REGION PROJECTS

Need Date: 2017

Project Name: **BOLTON STREET - DEPTFORD 115-KV RECONDUCTOR**

Description: Re-conductor the Deptford - Bolton Street 115-kV line; 3.0 miles of SSP, 927 ACAR; with 1033 ACSR.

Supporting Statement: By 2017, loss of the Deptford - Remlers Corner 115-kV line will load the Deptford - Bolton Street 115-kV line to 101% of its 181 MVA conductor rating.

Need Date: 2017

Project Name: **GTC - CLARKSBORO - WINDER PRIMARY 230 KV RECONDUCTOR**

Description: GTC - Reconductor the Clarksboro - Winder 230 kV line with 1351 ACSR.

Supporting Statement: In 2017, a loss of the Middle Fork - South Hall 500 kV line will cause the Clarksboo - Winder Primary 230 kV line to exceed its contingency rating of 433 MVA.

Need Date: 2017

Project Name: **KLONDIKE - SCHERER 500-KV SERIES REACTOR PROJECT**

Description: Install a 3-phase set of 4000amp, 500-kV, series reactors, (two-1/2%, 2000amp reactors per phase in parallel for a total of 0.25% @ 4000amp-per phase), in the Scherer 500-kV line termination

Supporting Statement: In 2017, during shoulder load conditions with a major generating unit out of service, loss of the O'Hara - Scherer 500-kV line causes the Klondike - Scherer 500-kV line to exceed its maximum rating of 3429 MVA.
