SERTP Southeastern Regional Transmission Planning

December 2016

Regional Transmission Plan & Input Assumptions Overview

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I. SERTP Overview

About the SERTP

The Southeastern Regional Transmission Planning (SERTP) is a collaboration of ten (10) transmission planning entities in a fourteen (14) state area that coordinates regional transmission planning activities and provides an open and transparent transmission planning forum to engage with stakeholders regarding transmission plans in the region. The SERTP region was initially developed by six (6) sponsors to provide an open and transparent regional transmission planning process and to otherwise comply with the Federal Energy Regulatory Commission's (FERC) Order 890, which was issued in 2007. The SERTP region expanded to its current size and scope due to the like-minded transmission planning philosophies of the current ten (10) collaborating SERTP sponsors. This commonality in transmission planning approaches has facilitated the SERTP region's implementation of FERC's Order 1000, issued in 2011, to establish regional and interregional transmission planning and cost allocation requirements. The SERTP region includes four (4) FERC jurisdictional investor-owned utilities and six (6) non-jurisdictional, non-profit public utilities, who have a longstanding history of collaboration in transmission planning activities and who have voluntarily elected to participate in the SERTP region. The expanded SERTP region, which became effective June 1, 2014, is one of the largest regional transmission planning regions in the United States.

The SERTP Regional Transmission Plan

The SERTP provides an open and transparent transmission planning process. The sponsors' transmission modeling, expansion plans, and other materials are publicly available and provide extensive data regarding the sponsors' transmission systems. Stakeholders can utilize this data to replicate the transmission planning performed through the SERTP as well as to assess a wide range of sensitivities and scenarios of interest.

This SERTP Regional Transmission Plan & Input Assumptions Overview document, which is produced annually, is intended to provide an overview of the 2016 cycle's regional modeling, key assumptions and philosophies, and expansion planning results suitable for any interested stakeholder, as it does not include Critical Energy Infrastructure Information (CEII) materials. Materials which include CEII are also available, subject to completion of the CEII request and

certification process. Additional information is available through the SERTP website (http://www.southeasternrtp.com/).

The SERTP Sponsors

1) **Associated Electric Cooperative (AECI)**

Associated Electric Cooperative Inc.

AECI, a Generation and Transmission (G&T) rural electric cooperative, provides electric service across approximately 75,000 square miles in three states. Headquartered in Springfield, Missouri, AECI serves approximately 875,000 ultimate members through six regional G&Ts and 51 distribution cooperatives. AECI and its six regional G&Ts own over 9,800 miles of transmission lines operated at 69 through 500 kV.

2) **Dalton Utilities (Dalton)**

Dalton UTILITIES

Dalton Utilities provides electric services in Dalton, Georgia and five surrounding counties. Headquartered in Dalton, Georgia, Dalton Utilities serves approximately 18,000 customers and owns over 300 miles of transmission lines.

3) **Duke Energy (Duke)**

DUKE ENERGY.

Duke Energy provides electric service across 95,000 square miles in 6 states. Headquartered in Charlotte, NC, Duke Energy serves approximately 7.3 million customers and owns over 32,400 miles of transmission lines.

Two Duke Energy subsidiaries, Duke Energy Carolinas and Duke Energy Progress, are represented on the SERTP.

4) **Georgia Transmission Corporation (GTC)**

GTC, an electric membership corporation formed in 1997 through a restructuring of Oglethorpe Power Corporation, provides electric service to 38 retail distribution cooperative members in Georgia. Headquartered in Tucker, Georgia, GTC owns approximately 3,100 miles of transmission lines and its members serve approximately 4 million people.

5) **Louisville Gas & Electric and Kentucky Utilities (LG&E/KU)**

LG&E/KU, an investor owned utility, provides electric service across 6,100 square miles in two states. Headquartered in Louisville, KY, LG&E/KU serves approximately 940,000 customers and owns over 2,721 miles of transmission lines.

6) **Municipal Electric Authority of Georgia (MEAG)**

MEAG, a public corporation and an instrumentality of the State of Georgia, provides electric service to 48 cities and one county in Georgia. Headquartered in Atlanta, Georgia, MEAG serves approximately 310,000 customers and owns over 1,320 miles of transmission lines.

7) **Ohio Valley Electric Corporation (OVEC)**

OVEC and Indiana-Kentucky Electric Corporation (IKEC), its wholly-owned subsidiary, is a generation and transmission company, providing its generation output to the 8 investor-owned and cooperative entities who own exclusive rights to that generation. While serving no customers directly, OVEC-IKEC owns two generating stations and over 700 miles of transmission lines across three states. OVEC is headquartered in Piketon, Ohio.

8) PowerSouth Electric Cooperative (PowerSouth)

PowerSouth, a generation and transmission cooperative consisting of 16 distribution cooperatives and 4 municipal systems, provides electric service across 31,000 square miles in 2 states. Headquartered in Andalusia, Alabama, PowerSouth serves approximately 418,000 customers and owns over 2,200 miles of transmission lines.

9) Southern Company (Southern)

Southern Company, a leading U.S. producer of clean, safe, reliable, and affordable energy, includes four electric utility companies that provide electric service across 120,000 square miles in four states. Headquartered in Atlanta, Georgia, Southern Company serves approximately 4.5 million electric customers and owns over 27,000 miles of transmission lines.

10) Tennessee Valley Authority (TVA)

TVA, a federally-owned electrical utility, provides electric service across 80,000 square miles in 7 states. Headquartered in Knoxville, TN, TVA serves approximately 9 million customers and owns over 16,000 miles of transmission lines.

SERTP Region Scope

The SERTP region is located within 14 states, roughly spanning over 600 miles north to south and 1,100 miles east to west. The SERTP region is the largest transmission planning region in the Eastern Interconnect in terms of transmission line miles and is one of the largest based upon customer peak demand. The nine (9) NERC Balancing Authority Areas ("BAAs") in the SERTP region serve combined peak loads totaling more than 123,000 MWs.

Table I.1: State by State Breakdown of SERTP Sponsors

No.	SERTP States	SERTP Sponsor
1	Alabama	PowerSouth, Southern, TVA
2	Florida	PowerSouth, Southern
3	Georgia	Dalton, GTC, MEAG, Southern, TVA
4	Indiana	OVEC
5	Iowa	AECI
6	Kentucky	LG&E/KU, OVEC, TVA
7	Mississippi	Southern, TVA
8	Missouri	AECI
9	North Carolina	Duke, TVA
10	Ohio	OVEC
11	Oklahoma	AECI
12	South Carolina	Duke
13	Tennessee	TVA
14	Virginia	LG&E/KU, TVA

II. SERTP Transmission Planning Approach

Physical Transmission Delivery Service Markets

The fundamental purpose of the transmission system is to enable transmission users the opportunity to access their desired generating resource options to reliably and economically deliver power to serve their customers' loads. In the SERTP region, physical transmission delivery service markets allow transmission customers to procure long-term transmission service across the transmission system and receive dependable, firm delivery from resources to customer loads. The SERTP sponsors plan and expand the transmission system to reliably and economically satisfy the load projections, resource assumptions, public policy requirements, and transmission service commitments within the region. These transmission system delivery capacity requirements are typically driven by long-term, firm commitments and are planned with the intent that those who have made such commitments will be able to access their resources to serve load without congestion, constraint, or curtailment. In other words, the SERTP sponsors identify, evaluate, and implement efficient and cost effective transmission expansion options to provide sufficient physical capacity to enable delivery of a long-term, firm transmission customer's service without impacting other long-term, firm delivery commitments, and with the intent that the service will normally be available without interruption or curtailment. The physical transmission delivery service markets in the SERTP region not only help to provide certainty in long-term delivery costs, but also minimize delivery risks for transmission users. The resulting planned physical transmission capacity provides for a robust, reliable, and resilient transmission system which responds well under a wide range of operating uncertainties and supports routine maintenance and construction activities.

Integrated Resource Planning and Transmission Planning Interaction

Although many long-term firm transmission delivery service commitments in the SERTP region are made by individual market participants, the majority are made by Load Serving Entities ("LSEs"). LSEs typically have a legal "duty to serve" obligation to reliably and proactively meet current and future load needs, and therefore procure energy, capacity, and transmission services to accomplish this objective. LSEs in the SERTP typically conduct Integrated Resource Planning ("IRP") processes on a reliable and least-cost basis to assess future load-serving needs, consider supply-side and

demand-side options, and procure transmission delivery services. The IRP processes of LSEs, which are often state-regulated, consider a multitude of factors over a long-term horizon in their decisions to select resources and procure delivery services, including reliability, transmission impacts, economics, environmental attributes, economic growth, energy efficiency, resource diversity, applicable regulations, fuel delivery, ancillary services, and construction lead-times. Specifically, LSEs use IRP processes to identify a cost-effective mix of supply-side and demand-side capacity resources to meet future requirements. The physical transmission delivery service markets in the SERTP region enable LSEs to base their decisions on long-term, total delivered costs without exposure to congestion pricing or significant delivery risks.

As LSEs make their resource decisions, these decisions and corresponding transmission service commitments are provided to the SERTP sponsors and form the basis for transmission planning assumptions in the SERTP region. Through their commitments for long-term, firm delivery service, LSEs communicate to the SERTP sponsors the set of resources their IRP processes have selected as best situated to serve their customers' long-term needs. This process significantly reduces uncertainties related to future resources and delivery needs, and provides sufficient lead times to enable transmission facilities to be planned and constructed.

The load forecasts, demand-side management programs, resource decisions, and corresponding firm transmission commitments resulting from the IRP activities of LSEs establish the majority of delivery obligations and modeling inputs for transmission planning in the SERTP region.

Customer Needs Lead to Continually Evolving Transmission Plans

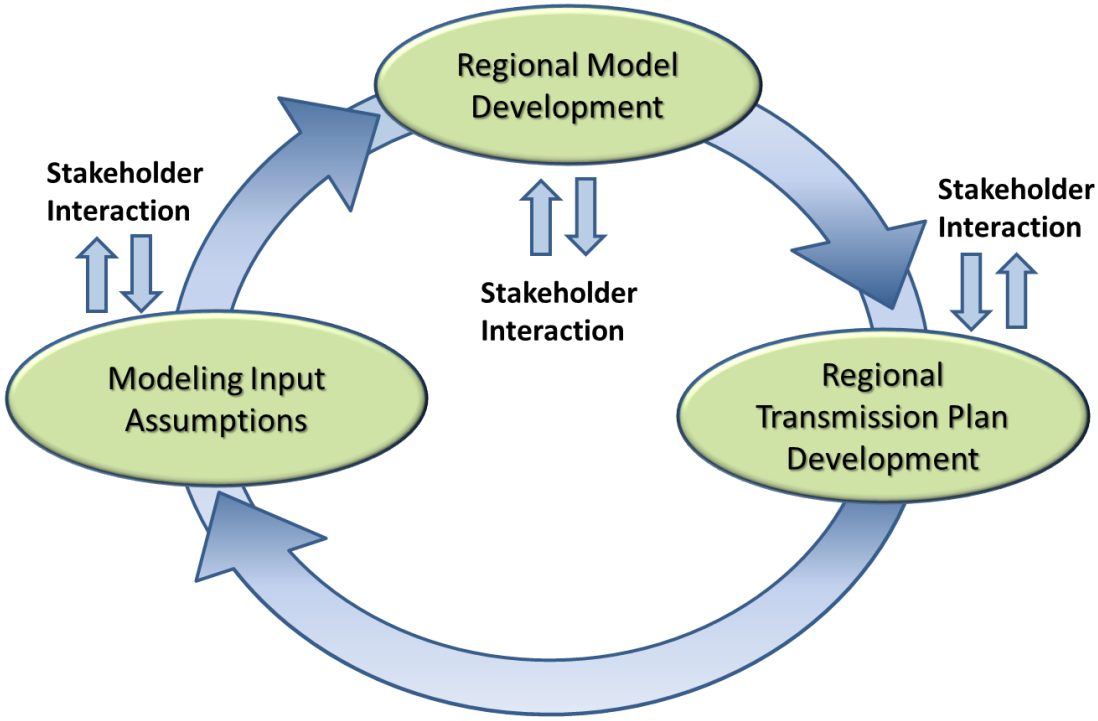
Transmission planning in the SERTP region is focused on identifying reliable, cost-effective transmission projects to meet the long-term firm transmission delivery service obligations to transmission customers, and thereby assisting in serving their forecasted load obligations from their desired resource choices. Simply put, transmission plans are driven by customer transmission delivery service needs, and these needs can be constantly changing. Each year, load forecasts change, resource decisions change, and, as a result, transmission delivery service needs change. On a recurring basis, LSEs and other transmission customers communicate their delivery needs, which the SERTP sponsors incorporate into the latest transmission planning models and analyses. Planned

transmission projects are reassessed to ensure that the proper scope and timing of the projects have been identified. Transmission projects are timed to coincide with delivery service needs; early enough to ensure physical capacity is in place to meet delivery commitments, but not so early as to incur significant carrying costs or limit flexibility if delivery needs change. Each year, planned transmission projects are often re-timed and, in some cases, eliminated.

Although the results of these planning efforts culminate annually into a regional transmission plan document, the regional transmission plan is continually re-evaluated as on-going changes in firm delivery service obligations, forecasted conditions, and identified-project alternatives arise. Therefore, the regional transmission plan is updated and improved upon on a recurring basis, often resulting in the identification of new cost-effective transmission project options, timing changes to existing transmission projects, and the potential removal of some transmission projects from the ten year plan. This planning approach provides a seamless interaction with IRP processes such that as IRP decisions are made, the expected transmission impacts considered in those IRP decisions become reflected in the regional transmission plan, unless other, more cost-effective, reliable solutions have been identified for the then-current forecasted conditions. Similarly, the decisions of other types of market participants to procure long-term, firm transmission delivery service in the SERTP region are incorporated in the development of the regional transmission plan as well. These constantly-changing customer needs drive a constantly-changing regional transmission plan.

The SERTP develops a regional plan each year, but the plan is a "snapshot", solely intended to reflect the then-current transmission plan based upon then-current forecasted assumptions and transmission delivery service needs. Transmission planning is a very iterative process, with delivery needs and associated projects constantly evolving. From the start, transmission planning in the SERTP region reflects a high degree of coordination and joint modeling between neighboring systems. If reliability constraints are identified, the SERTP sponsors work to identify cost-effective, reliable transmission projects, not only on their respective transmission systems, but also considering potential transmission projects across two or more transmission systems. Transmission plans are shared with SERTP stakeholders at regular intervals during the year and the frequent engagement with stakeholders allows for additional inputs into potential project alternatives. Diagram II.1 below illustrates the iterative nature of the SERTP process and the development of the regional transmission plan.

Diagram II.1: Iterative Regional Transmission Plan Development Process



Transmission Planning for Public Policy Requirements

In planning, constructing, operating, and maintaining the transmission system, the responsible transmission entities must meet all local, state, and federal laws/regulations applicable within their respective jurisdictions. These laws and regulations are referred to as public policy requirements ("PPRs"). The SERTP Sponsors strive to (and are required by law) to meet all PPRs applicable to planning the transmission system. Although PPRs applicable to transmission planning vary by jurisdiction, some common examples of PPRs involving transmission planning include complying with applicable State Public Service Commission requirements, complying with Nuclear Regulatory Commission requirements related to offsite power, and planning consistent with applicable North American Electric Reliability Corporation ("NERC") Reliability Standards.

Although PPRs related to generating resource decisions are typically applicable to LSEs, these too can impact the development of the transmission plan. By offering physical transmission services, SERTP sponsors help facilitate applicable entities, such as LSEs, in meeting their PPR obligations related to resource decisions. As an example, let's assume a state-enacted PPR requires LSEs within the state to add additional renewable resources to their generation mixes. An LSE, through its IRP analyses and processes, may determine that its most appropriate resource selection is to import

renewable generation from a neighboring area. Alternatively, the LSE may determine that its most appropriate option is to interconnect new renewable generation locally. In either case, the LSE can provide its resource selection decisions through long-term, delivery service commitments to the SERTP sponsors, so that the SERTP sponsors can incorporate these input assumptions into the transmission expansion planning process to accommodate the delivery of the resource selections.

SERTP Regional Planning Process Timeline

As discussed earlier, the SERTP planning process is an iterative process that continually re-evaluates the regional transmission plan based upon changes in actual and forecasted conditions. Often forecasted conditions can change, driven by inputs from native load and wholesale transmission customers such as their load-serving obligations and resource assumptions.

In light of these on-going changes, in a given planning cycle, transmission projects that may be included in the then-current regional plan are re-assessed by the SERTP Sponsors, each applying its respective planning criteria, to determine: 1) if a given project continues to be needed, 2) if the timing of the projects should be adjusted, and 3) if potential alternatives exist that may be more reliable and cost-effective to address the underlying transmission capacity requirements.

Diagrams II.2 and II.3 below illustrate the approximate timing and objectives of the SERTP process.

Diagram II.2: SERTP Process – Quarters 1 & 2

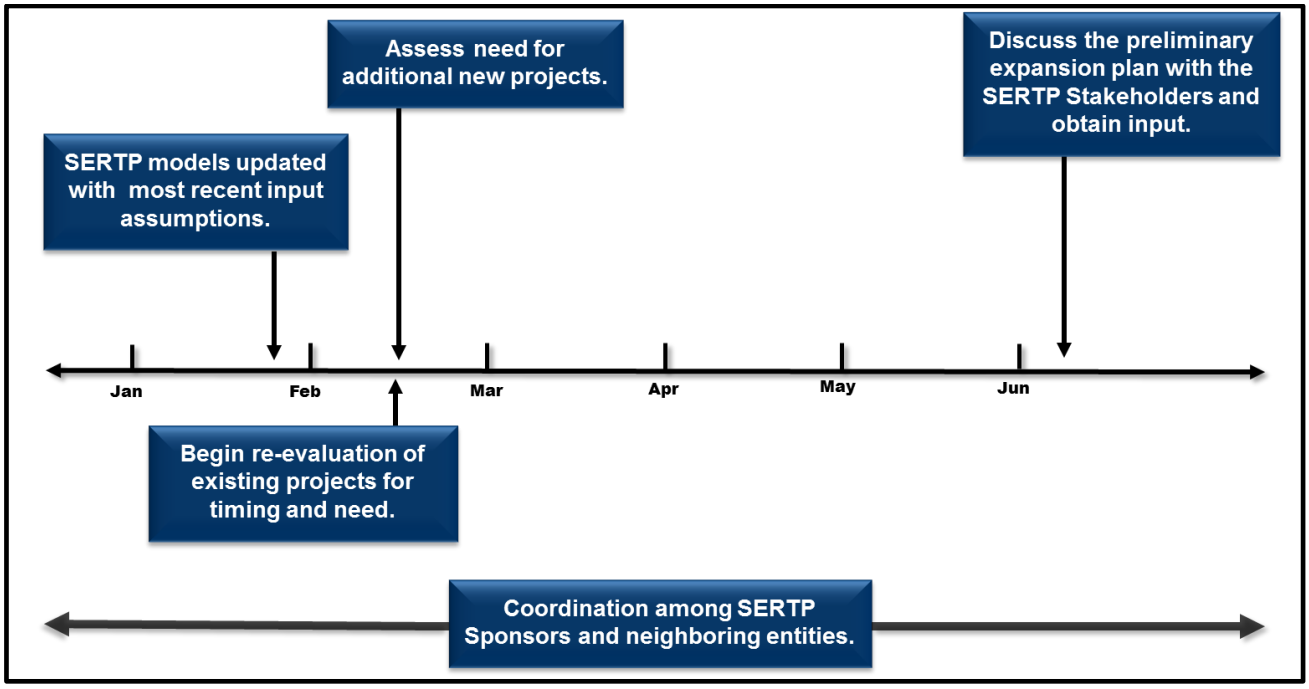
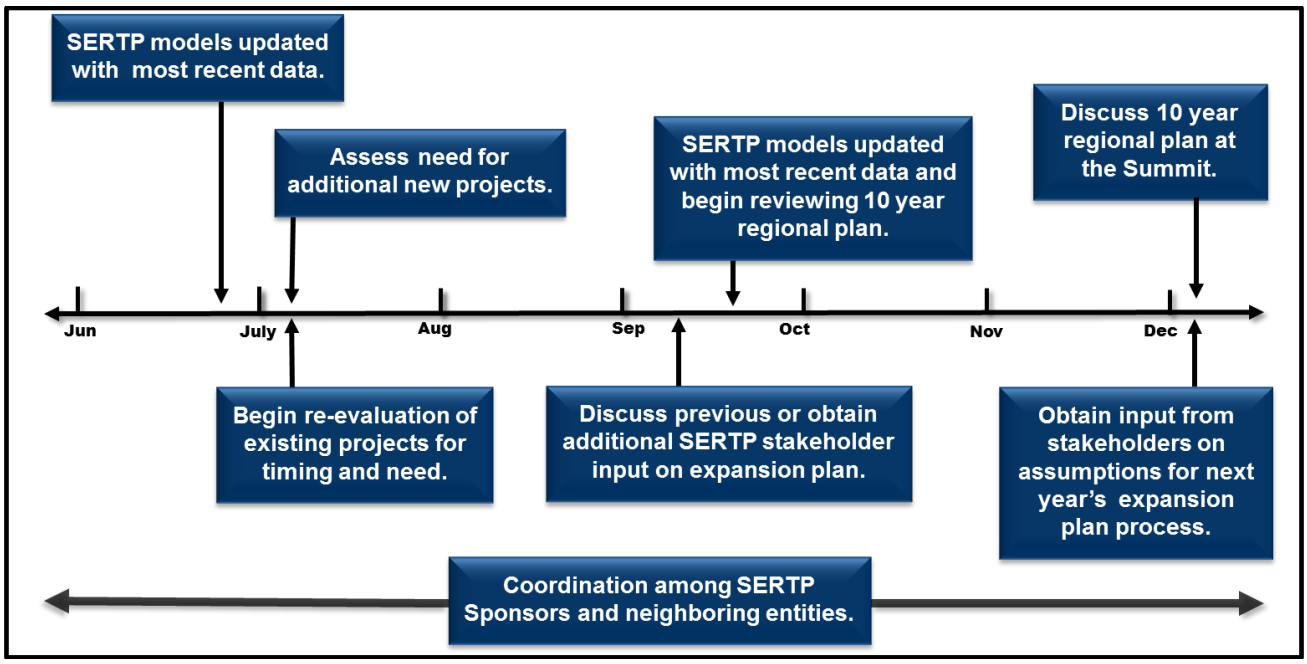


Diagram II.3: SERTP Process – Quarters 3 & 4



The SERTP Region – A Robust, Reliable, Resilient Transmission System

The SERTP Sponsors' transmission planning approach has resulted in a robust transmission system intended to enable both native load and wholesale customers the right to use the underlying physical transmission capacity in the system associated with their long-term, firm transmission commitments. In fact, the SERTP region is the largest transmission planning region in the Eastern Interconnect in terms of transmission line miles with over 90,000 line miles.

The 2016 regional transmission plan includes forecasted transmission projects to continue to reliably and cost-effectively provide for the transmission needs of the SERTP region. The planned physical transmission capacity provides for a continued robust, reliable, and resilient transmission system which responds well under a wide range of operating uncertainties and supports routine maintenance and construction activities.

Tables II.1 and II.2 below depict a snapshot of the major transmission expansion project types included in the regional transmission plan throughout the ten year planning horizon.

Table II.1 2016 SERTP Regional Transmission Plan – Transmission Project Snapshot

SERTP	Total
Transmission lines – New (Circuit Mi.)	521.8
Transmission Lines – Uprates[1] (Circuit Mi.)	1123.0
Transformers[2] – New	21
Transformers[2] – Replacements	9

[1]A transmission line uprate may be the result of reconductoring and/or increasing the operating temperature/voltage along the transmission line.
[2]The voltages shown represent the operating voltages on the high side terminals of the transformer

Table II.2 2016 SERTP Regional Transmission Plan – Transmission Project Snapshot by operating voltage

SERTP	100-120 kV	121-150 kV	151-199 kV	200-299 kV	300-399 kV	400-550 kV
Transmission lines – New (Circuit Mi.)	180.2	1.3	199.0	86.3	--	55.0
Transmission Lines – Uprates[1] (Circuit Mi.)	762.1	14.1	247.0	99.8	--	--
Transformers[2] – New	--	--	1	14	1	5
Transformers[2] – Replacements	3	--	--	6	--	--

[1]A transmission line uprate may be the result of reconductoring and/or increasing the operating temperature/voltage along the transmission line.
[2]The voltages shown represent the operating voltages on the high side terminals of the transformer

III. SERTP Regional Modeling

Regional Model Development

The SERTP annually develops regional powerflow models, which include the coordinated inputs and assumptions needed to support on-going regional transmission planning analyses. These models, which are available to SERTP stakeholders via the secure area of the SERTP website, are utilized by SERTP sponsors to perform regional transmission planning analyses and are also well suited to support SERTP stakeholders in conducting a wide range of scenarios and sensitivities that may be of interest. Table III.1 below provides a list of the 2016 series set of SERTP powerflow models. Additional models may be developed on an "ad hoc" basis based upon the requirements of the then-current planning cycle.

Table III.1: 2016 Series set of SERTP Powerflow Models

No.	Season	Year	MMWG Starting Point Case
1	Summer	2017	2017S
2		2019	2017S
3		2021	2021S
4		2022	2021S
5		2024	2021S
6		2026	2026S
7	Shoulder	2019	2017SH
8		2021	2021S
9		2024	2021S
10		2026	2026S
11	Winter	2021	2021W
12		2026	2026W

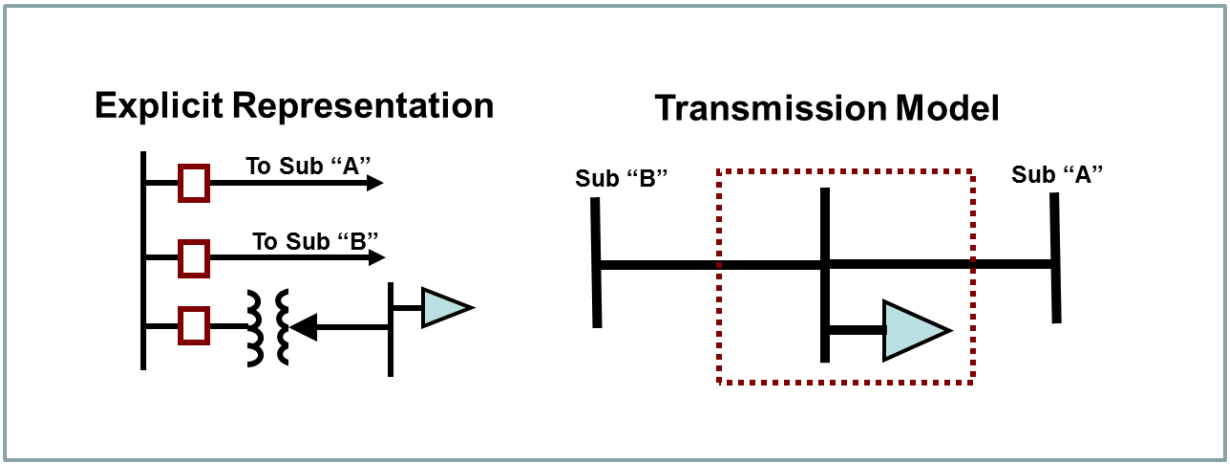
The SERTP regional powerflow models provide representations of the existing transmission topology plus forecasted topology changes throughout the ten year planning horizon. In addition, these models incorporate the input assumptions provided by LSEs and other transmission customers for use in planning the transmission system.

The powerflow models provide a comprehensive representation of the actual and forecasted transmission system so that simulations of the transmission system's ability to reliably accommodate

firm delivery service commitments can be performed. The SERTP conducts interactive stakeholder training on modeling and analysis techniques each year intended to help stakeholders better understand and utilize the abundance of information provided in these materials. More information on previous training presentations can be found on the SERTP website.

In the models, transmission lines, transformers, and substations are modeled as branches and nodes (buses). In general, radial transmission facilities only serving load with one source are typically not considered Bulk Electric System (BES) facilities and therefore, are not explicitly modeled. Diagram III.1 depicts a simple example of how an explicit substation representation might be reflected in the powerflow models.

Diagram III.1: SERTP Powerflow Model Substation Representation – Simple Example



The regional powerflow models are considered and marked as Critical Energy Infrastructure Information (CEII). The Federal Energy Regulatory Commission defines CEII as being specific engineering, vulnerability, or detailed design information about proposed or existing critical infrastructure (physical or virtual) that:

1) Relates details about the production, generation, transmission, or distribution of energy;
2) Could be useful to a person planning an attack on the critical infrastructure;
3) Is exempt from mandatory disclosure under the Freedom of Information Act; and
4) Does not simply give the general location of the critical infrastructure.

The SERTP models and other CEII materials are available to SERTP stakeholders, but are kept in the secure area of the SERTP website for the reasons discussed above. The process by which a stakeholder can obtain access to CEII can be found on the SERTP website.

Regional Modeling Input Assumptions

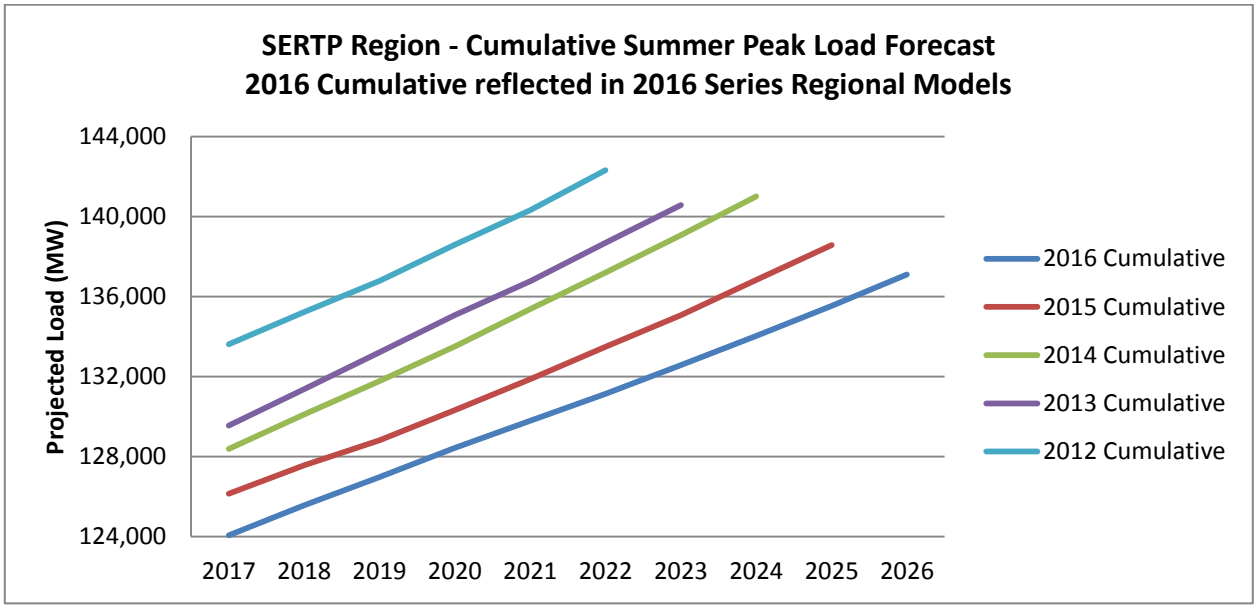
Vast amounts of data and information, such as the SERTP regional models, are available to all SERTP stakeholders, but are generally more geared towards an engineering audience. Therefore, the summaries below are intended to provide an overview of the modeling assumptions.

Section III and Appendices 1-9 include detailed information on the input assumptions reflected in the regional powerflow models and considered in the transmission planning process. The data shown is representative of the input assumptions provided by LSEs and other transmission customers for specific use in planning the transmission system during the 2016 planning cycle.

Load Forecasts

LSEs, who are responsible for identifying and securing the firm transmission delivery services necessary to meet their current and forecasted load serving requirements, annually supply the SERTP sponsors with revised load forecasts. The SERTP Sponsors incorporate the latest load forecasts from each LSE into the latest series of SERTP powerflow models. Diagram III.2 provides cumulative load forecast trends by year for the SERTP region for each of the last five years. As shown in the diagram, the 2016 series SERTP powerflow models reflect a reduced peak load forecast as compared to previous years' load forecasts.

Diagram III.2: Cumulative SERTP Load Forecast



The SERTP powerflow models provide more detailed information on the forecasted load. The 2016 series SERTP powerflow models are made available through the secure area of the SERTP website.

Energy Efficiency and Demand Side Management

The load forecasts provided by LSEs often reflect reduced load serving requirements for particular loads based upon energy efficiency ("EE") and demand side management ("DSM") options. Such options are developed as a part of each individual LSE's IRP processes on a state-by-state and program-by-program basis and therefore can vary in structure and operational characteristics.

The transmission planning process in the SERTP necessarily plans for each LSE's loads consistent with their desired treatment of such loads. While each LSE may treat their load forecasting process and assumptions differently, the following describes the typical treatment of energy efficiency and demand side resources.

LSEs proactively seek out DSM options that are economical and of interest to customers. In many cases, such DSM options are setup and implemented under the purview of state-approved programs, and therefore the LSE treats the DSM options in its load forecasting process consistent with the parameters of such programs. Energy efficiency and non-dispatchable (passive) demand side resources are typically treated as load-modifying and are reflected in a reduced load forecast provided by the LSEs and incorporated in the SERTP transmission planning models. Dispatchable (active) demand side resources are accounted for and considered as part of the resource decisions that are provided by each LSE. LSEs often do not treat these demand side resources as load-modifying when supplying load forecast assumptions into the SERTP process because of a multitude of factors, including:

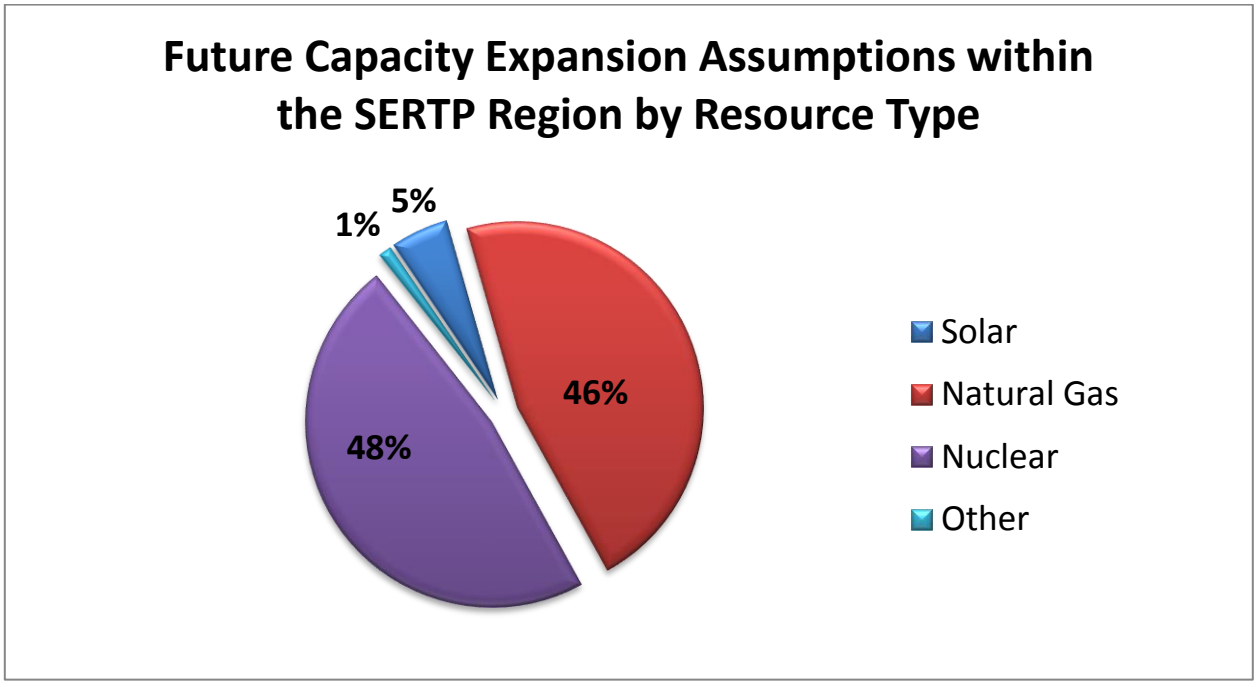
- A significant number of exposure hours can greatly exceed the amount of hours a DSM resource may be available
- Relying upon active DSM to address transmission constraints can lead to response fatigue from customers and potential withdrawal from DSM programs
- The operational characteristics of active DSM resources may be insufficient to address transient transmission needs

Generating Resources

The 2016 series SERTP powerflow databases available on the secure area of the SERTP website contain information on each of the generating resources connected within the SERTP region as well as those that are planned to be connected within the ten year planning horizon. Detailed tabular reports on such information can be run on the powerflow databases utilizing PSS/E software.

LSEs and market participants routinely make changes in their generation resource assumptions and associated transmission delivery service commitments. These changes can have many different drivers, including the selection of new resources, the retirement of generation, and the expiration of purchase power agreements. The SERTP sponsors reflect the latest generation resource assumptions, as provided by LSEs, in the then-current modeling and transmission planning analyses. Appendices 1 through 9 depict changes in the generation resource assumptions that occur in the ten (10) year transmission planning cycle, including the year(s) in which they occur for each BAA in the SERTP region. Several of the changes in the generation resource assumptions represent capacity sourced from assumed generation expansion within the SERTP region. Diagram III.3 provides a breakdown, by resource type, of these generation expansion assumptions within the SERTP region.

Diagram III.3: Future Capacity Expansion Assumptions within the SERTP Region by Resource Type



Generation assumptions within the SERTP region can also stem from long-term, firm point-to-point transmission service commitments. Additional information on long-term firm transmission service commitments considered in the 2016 SERTP process is available in Appendices 1 through 9 as well as on each SERTP Sponsor's respective OASIS site.

Interface Commitments

In addition to the firm transmission delivery service commitments made by LSEs that source and sink within their NERC BAA, firm transmission delivery service commitments may exist that source and/or sink across two NERC BAAs. These commitments are called interface commitments.

While interface commitments can stem from a number of drivers, many of these commitments are the result of LSEs opting to procure transmission capacity to receive deliveries from off-system resources to serve their loads. Other market participants may also utilize long-term, firm transmission delivery service to obtain delivery priority to access either committed or potential customers in other BAAs. The interfaces are also planned to maintain reliability margins to address uncertainties which may arise in real-time operations. Two types of reliability margins are 1) Transmission Reliability Margin ("TRM"), which is capacity preserved to provide reasonable assurance that the interconnected transmission network will be secure under the inherent uncertainty in real-time system conditions and 2) Capacity Benefit Margin ("CBM"), which is capacity preserved to enable LSEs access to generation from other interconnected systems to meet generation reliability requirements should times of emergency generation deficiencies arise.

Each SERTP Sponsor plans the transmission system to accommodate all of its long-term firm interface commitments including reliability margins. This planning, along with planning for other long-term firm commitments, has resulted in a highly integrated and robust network of ties within the SERTP region.

Appendices 1 through 9 provide detail on the interface commitments modeled in the 2016 series SERTP regional powerflow models. Additional information on the long-term firm transmission service interface commitments considered in the 2016 SERTP process is available on each SERTP Sponsor's respective OASIS sites.

IV. SERTP Regional Transmission Plan Summary

Regional Plan Summary

The regional transmission plan represents the culmination of each year's planning cycle assessment, providing a "snapshot" of the transmission capacity requirements to safely, reliably, and economically serve the load within the SERTP region based upon the current resource assumptions of LSEs and other transmission customers. As described in Sections II & III, the regional transmission plan is continually assessed and may be revised based upon changes to these input assumptions.

The 2016 SERTP regional transmission plan, found in its entirety in Section V, consists of over 150 transmission projects, totaling an estimated $2.5 billion dollars, including: over 500 miles of new transmission lines, over 1,100 miles of transmission line uprates (including upgrades, reconductors, and rebuilds), and 30 transformer additions and/or replacements. This planned physical transmission capacity provides for a continued robust, reliable, and resilient transmission system that responds well under a wide range of operating uncertainties and supports routine maintenance and construction activities. Tables II.1 and II.2 in Section II provide additional cumulative breakdowns on the regional transmission plan, while Appendices 1 through 9 depict tabular breakdowns for each BAA.

V. The SERTP Regional Transmission Plan

SERTP REGIONAL TRANSMISSION PLAN

Associated Electric Cooperative Inc.

Dalton UTILITIES

DUKE ENERGY.

GeorgiaTransmission

LG&E KU

MEAG POWER

OVEC IKEC
Ohio Valley Electric Corporation / Indiana-Kentucky Electric Corporation

PowerSouth ENERGY COOPERATIVE

Southern Company

TVA

December 5, 2016

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[1] **The projects described in this document represent the current regional transmission plan. This plan, along with the transmission projects included within it, is periodically reviewed and may be revised due to changes in assumptions. This document does not represent a commitment to build for projects listed in the future.**

In-Service Year:	2018
Project Name:	**MARIES – ROLLA NORTH WYE 161 KV T.L. & ROLLA NORTH WYE 161 KV SUBSTATION.**
Description:	Construct approximately 21 miles of 161 kV transmission line from Maries to Rolla North Wye with 795 ACSR at 100°C and install a 56 MVA 161/69 kV transformer at Rolla North Wye.
Supporting Statement:	The Maries – Rolla North Wye transmission line overloads under contingency and voltage support is needed in the Maries and Rolla North Wye area under contingency.

In-Service Year:	2025
Project Name:	**WHEATON – CASSVILLE 161 KV T.L. & STELLA 345/161 KV SUBSTATION**
Description:	Construct a 345/161 kV substation on the Brookline – Flintcreek 345 kV transmission line. Construct approximately 15 miles of 795 ACSR 161 kV transmission line at 100°C from Wheaton – Cassville, and install a 161/69 kV transformer at Cassville.
Supporting Statement:	The Neosho and Washburn 161/69 kV transformers overload under contingency.

In-Service Year:	2017
Project Name:	**ASHE STREET – PARKWOOD 100 KV T.L.**
Description:	Reconductor approximately 2.6 miles of the Ashe Street – Parkwood 100 kV transmission line with 477 ACSR at 120°C.
Supporting Statement:	The Ashe Street – Parkwood 100 kV transmission line overloads under contingency.

In-Service Year:	2017
Project Name:	**CENTRAL TIE SUBSTATION**
Description:	Replace transformer #1 with a 448 MVA 230/100/44 kV transformer at Central Tie Substation.
Supporting Statement:	The Central Tie 230/100/44 kV transformer overloads under contingency.

In-Service Year:	2017
Project Name:	**DIXON SCHOOL ROAD 230 KV SWITCHING STATION**
Description:	Install a new switching station along the Ripp SS – Riverbend 230 kV transmission line to tie in new generation.
Supporting Statement:	The station is needed for a new generation interconnection.

In-Service Year:	2017
Project Name:	**GLEN RAVEN – MEBANE TIE 100 KV T.L.**
Description:	Reconductor approximately 3 miles of the Glen Raven – Mebane 100 kV transmission line with bundled 477 ACSS and configure the Glen River – Eno 100 kV double circuit transmission line as normally open.
Supporting Statement:	The Glen Raven – Eno 100 kV double circuit transmission lines overload under contingency.

In-Service Year:	2017
Project Name:	**GREENBRIAR AREA IMPROVEMENTS**
Description:	Bundle the Shady Grove – Moonville Retail 100 kV transmission line with 477 ACSR at 120°C. Add 100 kV terminals at Greenbriar Retail making it a 100 kV switching station. Reedy River Tie will also become a breaker swap over station as part of the Greenbriar project.
Supporting Statement:	Project required to support new Lee CC project and contingency overloading of 100 kV lines in Lee area.

In-Service Year:	2017
Project Name:	**LEE STEAM STATION SWITCHYARD UPGRADE**
Description:	Upgrade the Lee Steam Station switchyard to facilitate interconnection to the new Lee Combined Cycle plant.
Supporting Statement:	The Lee Steam Station Switchyard is in need of upgrades in order to handle the increased generation from the new Lee Combined Cycle plant currently under construction.

In-Service Year:	2017
Project Name:	**NORTH GREENVILLE – TIGER 100 KV T.L.**
Description:	Rebuild approximately 11 miles of the North Greenville – Tiger 100 kV transmission line with 954 ACSR at 120°C.
Supporting Statement:	The North Greenville – Tiger 100 kV transmission line overloads under contingency.

In-Service Year:	2017
Project Name:	**OAKBORO 230/100 KV SUBSTATION**
Description:	Add a fourth 200 MVA, 230/100 kV transformer to Oakboro Substation.
Supporting Statement:	The Oakboro Substation 230/100 kV transformer overloads under contingency.

In-Service Year:	2017
Project Name:	**RIVERBEND STEAM STATION**
Description:	Add two 230/100 kV 400 MVA transformers at Riverbend Steam Station.
Supporting Statement:	Retirement of Riverbend Steam Station generation causes multiple transmission lines to overload under contingency and causes the need for additional voltage support in the Riverbend area.

In-Service Year:	2017
Project Name:	**SPRINGFIELD SWITCHING STATION**
Description:	Convert Springfield Tap into Springfield Switching Station.
Supporting Statement:	The Wylie Switching – Morning Star Tie 100 kV transmission lines overload under contingency.

In-Service Year:	2017
Project Name:	**TIGER – WEST SPARTANBURG 100 KV T.L.**
Description:	Reconductor approximately 5 miles of the Tiger – West Spartanburg 100 kV transmission line with 556 ACSR at 120°C.
Supporting Statement:	The Tiger – West Spartanburg 100 kV transmission line overloads under contingency.

In-Service Year:	2017
Project Name:	**WINECOFF 230/100 KV SUBSTATION**
Description:	Replace transformer #1 with a 448 MVA 230/100 kV transformer at Winecoff substation.
Supporting Statement:	The Winecoff 230/100 kV transformer overloads under contingency.

In-Service Year:	2018
Project Name:	**BELAIR SWITCHING STATION**
Description:	Construct a new five breaker switching station on the North Greensboro – Robbins Road 100 kV transmission line.
Supporting Statement:	The North Greensboro – Robbins Road 100 kV transmission lines overload under contingency.

In-Service Year:	2018
Project Name:	**CONCORD MAIN – HARRISBURG 100 KV T.L.**
Description:	Reconductor approximately 1 mile of the Concord Main – Harrisburg 100 kV transmission line with bundled 556 ACSR at 120°C.
Supporting Statement:	The Concord Main – Harrisburg 100 kV transmission line overloads under contingency.

In-Service Year:	2018
Project Name:	**LINCOLN CT – RIVERBEND 230 KV T.L.**
Description:	Replace switches at Riverbend Steam Station with 2000 A equipment.
Supporting Statement:	The Lincoln CT – Riverbend 230 kV transmission line overloads with a generation outage.

In-Service Year:	2018
Project Name:	**NORTH GREENSBORO SUBSTATION**
Description:	Add a fourth 448 MVA 230/100 kV transformer at North Greensboro Substation.
Supporting Statement:	The North Greensboro 230/100 kV transformer overloads under contingency.

In-Service Year:	2018
Project Name:	**PEACH VALLEY – RIVERVIEW 230 KV T.L.**
Description:	Install a 3% series reactor on the Peach Valley – Riverview 230 kV transmission line.
Supporting Statement:	The Peach Valley – Riverview 230 kV transmission line overloads under contingency.

In-Service Year:	2019
Project Name:	**MONROE – LANCASTER 100 KV T.L.**
Description:	Rebuild approximately 20 miles of the Monroe – Lancaster 100 kV transmission line with 954 ACSR at 120°C.
Supporting Statement:	The Monroe – Lancaster 200 kV transmission line overloads with a generation outage.

In-Service Year:	2019
Project Name:	**RURAL HALL SUBSTATION**
Description:	Upgrade ancillary equipment and replace tie breaker at Rural Hall with a 2000 A breaker.
Supporting Statement:	The Rural Hall substation tie breaker overloads under contingency.

In-Service Year:	2019
Project Name:	**SADLER TIE – DAN RIVER 100 KV T.L.**
Description:	Construct approximately 8.2 miles of new 100 kV transmission line between Dan River Combined Cycle station and Sadler Tie with 795 ACSS at 200°C.
Supporting Statement:	Thermal overloads occur around Dan River Steam Station and Dan River Combined Cycle Station under contingency.

In-Service Year:	2020
Project Name:	**CLIFFSIDE STEAM STATION**
Description:	Add a third 448 MVA 230/100 kV transformer at Cliffside Steam Station.
Supporting Statement:	The Cliffside Steam Station 230/100 kV transformer overloads under contingency.

In-Service Year:	2020
Project Name:	**WILKES TIE 230 KV SUBSTATION**
Description:	Install a new 230/100 kV 448 MVA transformer at Wilkes Tie.
Supporting Statement:	Thermal overloads occur near North Wilkesboro Tie. Also, additional voltage support is needed in the area.

In-Service Year:	2021
Project Name:	**PLEASANT GARDEN 500/230 KV SUBSTATION**
Description:	Replace CTs and aluminum buswork on the Pleasant Garden 500/230 kV transformer.
Supporting Statement:	The Pleasant Garden 500/230 kV transformer overloads under contingency.

In-Service Year:	2021
Project Name:	**WALNUT COVE – RURAL HALL 100 KV T.L.**
Description:	Split approximately 10 miles of the bundled six wire Walnut Cove – Rural Hall 100 kV transmission line circuit into two circuits.
Supporting Statement:	The Walnut Cove – Rural Hall 100 kV transmission line overloads under contingency.

In-Service Year:	2022
Project Name:	**CENTRAL – SHADY GROVE 230 KV T.L.**
Description:	Reconductor approximately 18 miles of the Central – Shady Grove 230 kV transmission line with bundled 954 ACSR at 120°C.
Supporting Statement:	The Central – Shady Grove 230 kV transmission line overloads under contingency.

In-Service Year:	2022
Project Name:	**STAMEY – STATESVILLE 100 KV T.L.**
Description:	Reconductor approximately 8 miles of the Stamey – Statesville 100 kV transmission line with 795 ACSR and 954 ACSR at 120°C.
Supporting Statement:	The Stamey – Statesville 100 kV transmssion line overloads under contingency.

In-Service Year:	2022
Project Name:	**WOODLAWN – AMITY 100 KV T.L.**
Description:	Replace ancillary equipment on the Woodlawn – Amity 100 kV transmission line with 3000 A equipment.
Supporting Statement:	The Woodlawn – Amity 100 kV transmission line overloads under contingency.

In-Service Year:	2023
Project Name:	**BECKERDITE – LINDEN ST 100 KV T.L.**
Description:	Reconductor approximately 16 miles of the double circuit Beckerdite – Linden St 100 kV transmission line with bundled 477 ACSR.
Supporting Statement:	The Beckerdite – Linden St 100 kV transmission line overloads under contingency.

In-Service Year:	2018
Project Name:	**RAEFORD 230 KV SUBSTATION**
Description:	Loop in the Richmond – Ft. Bragg Woodruff St. 230 kV transmission line at Raeford 230/115 kV substation and add a 300 MVA transformer.
Supporting Statement:	The Weatherspoon – Raeford 115 kV transmission line overload under contingency.

In-Service Year:	2019
Project Name:	**ASHEBORO – ASHEBORO EAST (NORTH) 115 KV T.L.**
Description:	Rebuild approximately 6.5 miles of the Asheboro – Asheboro East (North) 115 kV transmission line using 1590 ACSR. Replace disconnect switches at Asheboro 230 kV substation and both the breaker and the disconnect switches at Asheboro East 115 kV substation with equipment of at least 2000 A capability.
Supporting Statement:	The Asheboro – Asheboro East (North) 115 kV transmission line overloads under contingency.

In-Service Year:	2019
Project Name:	**SUTTON PLANT – CASTLE HAYNE 115 KV (NORTH) T.L.**
Description:	Rebuild approximately 8 miles of the Sutton Plant – Castle Hayne 115 kV North transmission line using 1272 ACSR.
Supporting Statement:	The Sutton Plant – Castle Hayne 115 kV North transmission line overloads under contingency.

In-Service Year:	2020
Project Name:	**GRANT'S CREEK – JACKSONVILLE 230 KV T.L.**
Description:	Construct approximately 12 miles of new 230 kV transmission line from Jacksonville 230 kV substation to a new 230 kV substation at Grant's Creek with bundled 6-1590 ACSR. Build the new 230 kV Grant's Creek substation with four 230 kV breakers and a new 300 MVA 230/115 kV transformer.
Supporting Statement:	The Havelock – Jacksonville 230 kV transmission line overloads under contingency and voltage support is needed in the Jacksonville area.

In-Service Year:	2020
Project Name:	**HARLOWE – NEWPORT 230 KV T.L.**
Description:	Construct a new 230 kV switching station at Newport, construct a new 230 kV substation at Harlowe, and construct approximately 10 miles of new 230 kV transmission line from Harlowe to Newport Area with 1590 ACSR.
Supporting Statement:	Voltage support is needed in Havelock – Morehead area.

In-Service Year:	2020
Project Name:	**IND103 115 KV CAPACITOR BANK**
Description:	Install one 18 MVAR capacitor bank at IND103 115 kV substation.
Supporting Statement:	Voltage support is needed in the Hartsville area.

In-Service Year:	2020
Project Name:	**PROSPECT 230 KV CAPACITOR STATION**
Description:	Construct a new capacitor bank station near Brunswick EMC Prospect 230 kV substation off the Brunswick # 2 – Whiteville 230 kV transmission line, and install one 60 MVAR capacitor bank at the new station.
Supporting Statement:	Voltage support is needed in Southport area.

In-Service Year:	2020
Project Name:	**SMITHFIELD 115 KV CAPACITOR STATION**
Description:	Construct a new capacitor bank station near Smithfield 115 kV substation and install one 18 MVAR capacitor bank at Smithfield 115 kV substation.
Supporting Statement:	Voltage support is needed in Smithfield area.

In-Service Year:	2021
Project Name:	**LOUISBURG AREA 115 KV CAPACITOR STATION**
Description:	Construct a capacitor bank station near Louisburg 115 kV substation and install one 18 MVAR capacitor bank at Smithfield 115 kV substation.
Supporting Statement:	Voltage support is needed in Louisburg area.

In-Service Year:	2022
Project Name:	**IND042 – MAXTON 115 KV RECONDUCTOR**
Description:	Reconductor approximately 3.5 miles of the IND042 – Maxton 115 kV transmission line with 795 ACSR.
Supporting Statement:	The IND042 – Maxton section of the Weatherspoon – IND042 115 kV transmission line overloads under contingency.

In-Service Year:	2024
Project Name:	**BRUNSWICK #1 – JACKSONVILLE 230 KV T.L.**
Description:	Loop the existing Brunswick Plant Unit 1 – Jacksonville 230 kV transmission line into the Folkstone 230 kV substation.
Supporting Statement:	The Castle Hayne – Folkstone 115 kV transmission line overloads under contingency.

In-Service Year:	2025
Project Name:	**DURHAM – RTP 230 KV T.L.**
Description:	Reconductor approximately 10 miles of the Durham – RTP 230 kV transmission line with bundled 6-1590 ACSR.
Supporting Statement:	The Durham – RTP 230 kV transmission line overloads under contingency.

In-Service Year:	2018
Project Name:	**VANDERBILT – WEST ASHEVILLE 115 KV T.L.**
Description:	Reconductor approximately 2.7 miles of the Vanderbilt – West Asheville 115 kV transmission line with 3-795 ACSR. Replace one 115 kV breaker, two 115 kV disconnect switches, and one 115 kV switch at Vanderbilt.
Supporting Statement:	The Vanderbilt – West Asheville 115 kV transmission line overloads under contingency.

In-Service Year:	2019
Project Name:	**ASHEVILLE SE PLANT**
Description:	Upgrade the two existing 230/115 kV transformers to 400 MVA each at Asheville SE Plant, reconductor approximately 1.2 miles of the 115 kV north and south transformer tie lines with 1590 ACSR at 100°C, replace the existing breakers with 3000A breakers, and add a 72 MVAR 230 kV capacitor bank.
Supporting Statement:	Necessary upgrades to allow for interconnection of two combined cycle units at Asheville Plant.

In-Service Year:	2019
Project Name:	**CANE RIVER 230 KV STATIC VAR COMPENSATOR (SVC)**
Description:	Install a 150 MVAR 230 kV Static Var Compensator (SVC) at Cane River Substation.
Supporting Statement:	Necessary upgrades to allow for interconnection of two combined cycle units at Asheville Plant.

In-Service Year:	2019
Project Name:	**PISGAH FOREST 230 KV SUBSTATION**
Description:	Upgrade the existing 115/100 kV transformers to 150 MVA at Pisgah Forest Substation.
Supporting Statement:	Necessary upgrades to allow for interconnection of two combined cycle units at Asheville Plant.

In-Service Year:	2022
Project Name:	**ASHEVILLE PLANT – OTEEN WEST 115 KV T.L., BALDWIN TAP**
Description:	Construct approximately 2.2 miles of new 115 kV transmission line from the Asheville Plant – Oteen West 115 kV transmission line to the Asheville Plant – Oteen East 115 kV transmission line with 795 ACSR. The Baldwin 115 kV substation will be reconnected to this new tap line.
Supporting Statement:	Voltage support is needed in Baldwin area.

In-Service Year:	2017
Project Name:	**ELIZABETHTOWN – HARDIN COUNTY 138 KV T.L.**
Description:	Construct a second Elizabethtown – Hardin Co 138 kV transmission line by overbuilding the existing Elizabethtown – Hardin Co 69 kV transmission line and install a 138 kV breaker on the Elizabethtown 138/69 kV transformer.
Supporting Statement:	The Hardin County 138/69 kV transformer overloads under contingency.

In-Service Year:	2017
Project Name:	**HARDINSBURGH – BLACK BRANCH 138 KV T.L.**
Description:	Replace the 138 kV terminal equipment rated less than 287 MVA on the Hardinsburg – Black Branch 138 kV transmission line, using equipment capable of at least 326 MVA.
Supporting Statement:	The terminal equipment on the Hardinsburg – Black Branch 138 kV transmission line becomes overloaded under contingency.

In-Service Year:	2017
Project Name:	**WEST LEXINGTON – VILEY ROAD 138 KV T.L.**
Description:	Reconductor approximately 5.19 miles of 795 ACSR conductor in the West Lexington – Viley Road section of the West Lexington – Viley Road – Haefling 138 kV transmission line, using high temperature conductor capable of at least 358 MVA.
Supporting Statement:	The West Lexington – Viley Road 138 kV transmission line overloads under contingency.

In-Service Year:	2019
Project Name:	**WEST LEXINGTON – HAEFLING 138 KV T.L.**
Description:	Reconductor 7.3 miles of 795 ACSR conductor on the West Lexington – Haefling 138 kV transmission line, using high temperature conductor capable of at least 358 MVA.
Supporting Statement:	The West Lexington to Haefling 138 kV transmission line overloads under contingency.

In-Service Year:	2020
Project Name:	**PLAINVIEW – PLAINVIEW TAP 138 KV T.L.**
Description:	Replace approximately 1.6 miles of 1272 AAC conductor of the Plainview Tap – Plainview section of the Middletown – Beargrass 138 kV transmission line with 1272 ACSR rated at 341 MVA.
Supporting Statement:	The Plainview Tap – Plainview 138 kV transmission line overloads under contingency.

In-Service Year:	2022
Project Name:	**ELIHU – ALCALDE 161 KV T.L.**
Description:	Replace the 161 kV terminal equipment rated less than 335 MVA on the Alcade – Elihu 161 kV transmission line, using equipment capable of at least 380 MVA.
Supporting Statement:	The terminal equipment on the Elihu – Alcalde 161 kV transmission line becomes overloaded under contingency.

In-Service Year:	2022
Project Name:	**HAEFLING – VILEY ROAD 138 KV T.L.**
Description:	Replace the 500 MCM Cu terminal equipment at Haefling on the Haefling – Viley Road section of the West Lexington – Viley Road – Haefling 138 kV transmission line.
Supporting Statement:	The terminal equipment on the Haefling – Viley Road 138 kV transmission line becomes overloaded under contingency.

In-Service Year:	2017
Project Name:	**LEE COUNTY 115 KV SWITCHING STATION**
Description:	Construct a 115 kV switching station to facilitate the Lee County – Fuller Road 115 kV transmission line.
Supporting Statement:	Additional voltage support is needed in the area.

In-Service Year:	2017
Project Name:	**LUVERNE – FULLER 115 KV T.L.**
Description:	Reconductor 8.5 miles of existing 115 kV transmission line with 795 ACSR conductor rated at 210 MVA.
Supporting Statement:	Provides increased reliability.

In-Service Year:	2017
Project Name:	**MCWILLIAMS – LUVERNE 115 KV T.L.**
Description:	Upgrade 28 miles of the existing McWilliams – Luverne 46 kV transmission line to 115 kV with 795 ACSR at 100°C.
Supporting Statement:	Additional voltage support needed in the Dublin, Kyzar, Brundidge, Clio, and Victoria areas under contingency.

In-Service Year:	2018
Project Name:	**BONIFAY – CHIPLEY 115 KV T.L.**
Description:	Construct 14 miles of new 115 kV transmission line from Bonifay substation to a new Chipley switching station with 795 ACSR at 100°C.
Supporting Statement:	Additional voltage support is needed at Graceville and Fountain under contingency.

In-Service Year:	2018
Project Name:	**GASKIN – SOUTHPORT 115 KV T.L.**
Description:	Construct 9 miles of new 115 kV transmission line from Gaskin Switching Station – Southport substation with 795 ACSR at 100°C.
Supporting Statement:	Improve the reliability of Gulf Coast Electric's substations by providing a looped service feed.

In-Service Year:	2018
Project Name:	**SALEM JUNCTION – BOTTOMS MILL 115 KV T.L.**
Description:	Construct 16 miles of new 115 kV transmission line from Bottom's Mill to Salem Junction with 795 ACSR at 100°C.
Supporting Statement:	Additional voltage support needed in the Dublin, Kyzar, Brundidge, Clio, and Victoria areas under contingency.

In-Service Year:	2017
Project Name:	**AMERICUS – NORTH AMERICUS (BLACK) 115 KV T.L.**
Description:	Reconductor approximately 3.2 miles along the Americus – North Americus (Black) 115 kV transmission line to 100°C 795 ACSR.
Supporting Statement:	The Americus – North Americus (Black) 115 kV transmission line overloads under contingency.

In-Service Year:	2017
Project Name:	**AULTMAN ROAD – BONAIRE PRIMARY 115 KV T.L.**
Description:	Reconductor approximately 3.7 miles of 336 ACSR, 115 kV transmission line along the Bonaire Primary – Peach Blossom section of the Bonaire Primary – Aultman Road 115 kV transmission line with 795 ACSR at 100°C.
Supporting Statement:	The Bonaire Primary – Peach Blossom 115 kV transmission line overloads under contingency.

In-Service Year:	2017
Project Name:	**BARRY – CRIST 230 KV T.L.**
Description:	Upgrade approximately 31.6 miles along the Barry – Crist 230 kV transmission line to 125°C operation.
Supporting Statement:	Provides additional maintenance flexibility.

In-Service Year:	2017
Project Name:	**BUTLER 230 KV SUBSTATION**
Description:	Install 2% series reactors at Butler on the Bonaire Primary – Butler 230 kV transmission line.
Supporting Statement:	The Bonaire Primary – Butler 230 kV transmission line overloads under contingency.

In-Service Year:	2017
Project Name:	**CORN CRIB 230/115 KV SUBSTATION**
Description:	Construct a new 230/115 kV substation with a 400 MVA transformer. Loop in the Dyer Road – Thomaston 230 kV, Dyer Road – Thomaston 115 kV, and the Dyer Road – Lagrange 115 kV transmission lines. Terminate the Dyer Road – Newnan #3 Junction 115 kV transmission line.
Supporting Statement:	The Lagrange Primary – Yates 115 kV transmission line overloads under contingency. This project also provides voltage support along the Dyer Road – Thomaston 115 kV transmission line.

In-Service Year:	2017
Project Name:	**DEAN FOREST – MILLHAVEN ANNEX 115 KV T.L.**
Description:	Construct approximately 5.3 miles of 795 ACSR 115 kV transmission line from Dean Forest to Millhaven Annex.
Supporting Statement:	Additional voltage support is needed in the Millhaven area under contingency.

In-Service Year:	2017
Project Name:	**DOTHAN – WEBB 115 KV T.L.**
Description:	Reconductor approximately 6.7 miles of 115 kV transmission line from Webb – ECI Webb – Dothan with 1351 ACSS at 160°C.
Supporting Statement:	The Dothan – Webb 115 kV transmission line overloads under contingency.

In-Service Year:	2017
Project Name:	**DUBLIN AREA IMPROVEMENTS**
Description:	Construct approximately 13 miles of 115 kV transmission line from Danville to North Dudley with 795 ACSR at 100°C. Reconductor approximately 8.5 miles along the Jeffersonville to Danville tap 115 kV transmission line with 336 ACSS at 200°C. Construct a three-breaker 115 kV switching station at the Jeffersonville tap point and upgrade approximately 15.2 miles of 115 kV transmission line from the switching station to Bonaire Primary to 100°C operation. Install three breakers at the Beckham Road substation for Vidalia, SE Paper, and Dublin 115 kV transmission lines. Upgrade the 115 kV bus at Soperton Primary.
Supporting Statement:	Additional voltage support needed in the Dublin area under contingency.

In-Service Year:	2017
Project Name:	**FIFTY SECOND STREET SUBSTATION**
Description:	Install a new 60 MVAR single stage 115 kV capacitor bank at 52nd Street Substation.
Supporting Statement:	Addition of load in the Savannah area requires additional voltage support on the 115 kV system.

In-Service Year:	2017
Project Name:	**GORGAS – JASPER TAP 161 KV T.L.**
Description:	Reconductor approximately 15 miles along the Gorgas – Taft Coal – Jasper Tap 161 kV transmission line with 795 ACSR at 100°C. Install a new 161 kV switching station at Jasper T.S. Construct approximately 0.8 miles of 161 kV transmission line from Jasper T.S. to Jasper D.S.
Supporting Statement:	The Gorgas – Taft Coal – Jasper Tap 161 kV transmission line overloads under contingency.

In-Service Year:	2017
Project Name:	**HAMPTON – MCDONOUGH 115 KV T.L.**
Description:	Reconductor approximately 7.5 miles along the McDonough – Hampton 115 kV transmission line with with 1033 ACSR.
Supporting Statement:	The Hampton – McDonough tap 115 kV transmission line overloads under contingency.

In-Service Year:	2017
Project Name:	**JASPER EAST – MISSIONARY (SMEPA) 230 KV T.L.**
Description:	Tap the Missionary – Waynesboro 161 kV transmission line at the intersection of the Enterprise – Laurel East 230 kV transmission line. Construct a four (4) breaker 230 kV ring bus in Jasper County, MS.
Supporting Statement:	Additional voltage support is needed in the area.

In-Service Year:	2017
Project Name:	**LAGRANGE PRIMARY – GLASSBRIDGE 115 KV T.L.**
Description:	Reconductor approximately 1 mile of the Lagrange 5 to Milliken (Lagrange) segment of the Lagrange Primary – Glassbridge 115 kV transmission line with 795 ACSR at 100°C operation.
Supporting Statement:	Network reliability improvement needed in the Lagrange area under contingency.

In-Service Year:	2017
Project Name:	**LOCUST FORK T.S.**
Description:	Replace the existing 115 kV, 30 MVAR capacitor bank at Locust Fork T.S. and install one 115 kV, 15 MVAR capacitor bank.
Supporting Statement:	Provides additional maintenance flexibility.

In-Service Year:	2017
Project Name:	**MADISON PARK – AUBURN UNIVERSITY (MONTGOMERY) TAP 115 KV T.L.**
Description:	Reconductor approximately 1.6 miles of 795 ACSR at 100°C from Madison Park – Auburn University (Montgomery) Tap 115 kV transmission line with 1351 ACSR at 100°C.
Supporting Statement:	Provides additional maintenance flexibility.

In-Service Year:	2017
Project Name:	**MCINTOSH – MCINTOSH CC #10 230 KV T.L.**
Description:	Reterminate McIntosh CC #10 from West McIntosh to the McIntosh 230/115 kV substation.
Supporting Statement:	The McIntosh – West McIntosh 230 kV (Black) transmission line overloads under contingency.

In-Service Year:	2017
Project Name:	**PINECREST 230/115 KV AREA PROJECT**
Description:	Construct a new 6.6 mile, 230 kV transmission line from Cumming to Sharon Springs with 1351 ACSR at 100°C. Install a 300 MVA 230/115 kV transformer with two 115 kV breakers at Sharon Springs distribution substation. Terminate the 115 kV lines from Hopewell and Suwanee. Install a 230 kV breaker at the Cumming Substation and terminate the 230 kV transmission line to Sharon Springs.
Supporting Statement:	The Suwanee – Old Atlanta Road section of the transmission line overloads under contingency. The Hopewell – Brandywine section of the transmission line also overloads under contingency.

In-Service Year:	2017
Project Name:	**RAY PLACE ROAD 115 KV SUBSTATION**
Description:	Construct a three terminal ring bus switching station (Ray Place Road) at the Washington Junction of the Union Point Primary – Warrenton Primary 115 kV transmission line.
Supporting Statement:	This project is needed for operational flexibility.

In-Service Year:	2017
Project Name:	**SOUTH HAZLEHURST 230/115 KV SUBSTATION**
Description:	Replace the existing South Hazlehurst 230/115 kV Bank B with a 300 MVA transformer.
Supporting Statement:	The South Hazlehurst 230/115 kV Bank B transformer overloads under contingency.

In-Service Year:	2017
Project Name:	**THOMSON PRIMARY – VOGTLE 500 KV T.L.**
Description:	Construct approximately 55.0 miles of new 500 kV transmission line from Plant Vogtle to the Thomson Primary 500/230 kV substation.
Supporting Statement:	Needed to support the expansion of Plant Vogtle.

In-Service Year:	2018
Project Name:	**AUBURN – OPELIKA AREA 115 KV T.L. NETWORKING**
Description:	Add a new 115 kV switching station (East Loop SS), a new 115 kV switching station west of North Auburn (Pear Tree SS) and construct approximately 4.0 miles of 115 kV transmission line from Pear Tree SS to Wire Road. Construct a new 115 kV switching station near the Chewacla Tap (Pin Oaks SS) and a new substation west of Marvyn DS intersecting the Fuller Rd – Notasulga and South Auburn 115 kV TL's (Sanford SS). Reconductor approximately 1.8 miles of 115 kV transmission line between Opelika #1 and Opelika #3 with 795 ACSR at 100°C. Reconductor approximately 7.4 miles of 115 kV transmission line between Sanford SS – Sonat Tap – Pin Oaks with 397 ACSS at 200°C. Reconductor approximately 7.1 miles of 115 kV transmission line between – Beehive Tap – Chewacla with 795 ACSR at 100°C. Reconductor approximately 6 miles of 115 kV transmission line between North Auburn – Pear Tree SS with 795 ACSS at 200°C.
Supporting Statement:	Provides additional reliability and maintenance flexibility.

In-Service Year:	2018
Project Name:	**BARRY – MCINTOSH "A" 115 KV T.L.**
Description:	Upgrade approximately 20 miles along the Barry – McIntosh "A" 115 kV transmission line to 125°C operation.
Supporting Statement:	Provides increased reliability and maintenance flexibility.

In-Service Year:	2018
Project Name:	**CRISP COUNTY AREA IMPROVEMENTS**
Description:	Construct approximately 12 miles of new 636 ACSR, 115 kV transmission line from Crisp #2 (Warwick) – Crisp #8. Add three 115 kV breakers at Warwick to create the North Americus – Crisp #2 and North Tifton – Crisp #2 115 kV circuits. Also, construct a 2.1 mile, 636 ACSR 115 kV transmission line section from Crisp County #8 – Crisp County #6 to create the Crisp #2 – Pitts 115 kV circuit.
Supporting Statement:	The North Americus – Turkey Creek 115 kV transmission line overloads and additional voltage support is needed in the Crisp County area under contingency.

In-Service Year:	2018
Project Name:	**DALTON – OOSTANAULA 115 KV T.L.**
Description:	Reconductor approximately 1.1 miles of the Dalton – Oostanaula 115 kV transmission line with 795 ACSR conductor at 100°C and rebuild the bus at Dalton #9.
Supporting Statement:	The Dalton – Oostanaula 115 kV transmission line overloads under contingency.

In-Service Year:	2018
Project Name:	**FOREST – MORTON 115 KV T.L.**
Description:	Reconductor approximately 8.4 miles of 477 ACSR 115 kV transmission line from Forest TS to the Entergy tie point with 1033 ACSR at 100°C.
Supporting Statement:	The Forest – Forest Industrial – Morton 115 kV transmission line overloads under contingency.

In-Service Year:	2018
Project Name:	**FULLER ROAD – LEE COUNTY 115 KV T.L.**
Description:	Construct approximately 13 miles of new 795 ACSR at 100°C 115 kV transmission line from Fuller Road (APC) to Lee County (PowerSouth).
Supporting Statement:	The Knauff Fiberglass – N. Opelika 115 kV transmission line overloads under contingency. The new Fuller Rd – Lee County 115 kV transmission line will also provide greater maintenance flexibility on the N. Opelika TS – Lanett DS 115 kV corridor.

In-Service Year:	2018
Project Name:	**MCEVER ROAD – SHOAL CREEK 115 KV T.L.**
Description:	Rebuild approximately 4.2 miles along the Shoal Creek – Gaines Ferry section of the McEver Road – Shoal Creek 115 kV transmission line with 1033 ACSR at 100°C.
Supporting Statement:	The McEver Road – Shoal Creek 115k kV transmission line overloads under contingency.

In-Service Year:	2018
Project Name:	**MITCHELL DAM – CLANTON LOOP TAP 115 KV T.L.**
Description:	Construct approximately 10.3 miles of 115 kV transmission line from Mitchell Dam – Clanton Loop Tap with 795 ACSS at 200°C.
Supporting Statement:	The Mitchell Dam – CRH Tap – Clanton Tap 115 kV transmission line overloads under contingency.

In-Service Year:	2018
Project Name:	**PRATTVILLE AREA PROJECT**
Description:	Construct approximately 6.5 miles of 795 ACSR 115 kV transmission line at 100°C from County Line Road – Prattville DS. Install new 115 kV terminal at Hunter SS. Construct approximately 2.7 miles of 795 ACSR 115 kV transmission line at 100°C from Hunter SS to GE Burkeville Tap.
Supporting Statement:	Provides increased reliability and maintenance flexibility.

In-Service Year:	2018
Project Name:	**SOUTH BIRMINGHAM 115 KV PROJECT**
Description:	Construct a 115 kV switching station (Lakeshore SS) between Bessemer TS & Magella TS that loops in the existing Bessemer – Magella 115 kV transmission line and the North Helena – Patton Chapel 115 kV transmission line. Construct another 115 kV switching station (Massey Road SS) by expanding Massey Road DS and looping in the South Jefferson to North Helena 115 kV transmission line.
Supporting Statement:	Network reliability improvement needed in the South Birmingham area.

In-Service Year:	2019
Project Name:	**ALICEVILLE – COCHRANE 115 KV T.L.**
Description:	Construct a 230/115 kV station at Cochrane TS. Construct approximately 9.0 miles of 115 kV transmission line from Aliceville TS to Cochrane TS with 397.5 ACSR at 100°C. Install a 15 MVAR capacitor bank at Aliceville TS and Cochrane TS.
Supporting Statement:	Provides increased reliability and additional maintenance flexibility. Also, voltage support is needed in the area.

In-Service Year:	2019
Project Name:	**BARNEYVILLE – DOUGLAS 115 KV T.L.**
Description:	Upgrade 2.5 miles along the Nashville #1 – Nashville #2 section of the Barneyville – Douglas 115 kV transmission line to 100°C operation.
Supporting Statement:	The Barneyville - North Tifton 115 kV transmission line overloads under contingency.

In-Service Year:	2019
Project Name:	**BUTLER 230 KV SUBSTATION**
Description:	Remove 2% series reactors at Butler on the Bonaire Primary – Butler 230 kV transmission line.
Supporting Statement:	The reactors are no longer needed due to generation additions at Plant Vogtle.

In-Service Year:	2019
Project Name:	**CLAXTON – STATESBORO PRIMARY 115 KV T.L.**
Description:	Reconductor approximately 17.8 miles along the Claxton – Statesboro Primary 115 kV transmission line with 795 ACSR at 100°C. Replace 600 A switches at Langston and Statesboro with 2000 A switches.
Supporting Statement:	The Claxton – Statesboro 115 kV transmission line overloads under contingency.

In-Service Year:	2019
Project Name:	**EASTERN ALABAMA AREA 115 KV PROJECT**
Description:	Reconductor approximately 5.3 miles of 397 ACSR at 75°C 115 kV transmission line between Gulf States Steel and Rainbow City SS with 795 ACSS at 200°C. Install a new 115 kV switching station around Rainbow City. Install a new 115 kV terminal at Clay TS. Upgrade the existing 230/115 kV transformer at Clay TS to 477 MVA. Construct approximately 34 miles of 795 ACSS at 200°C between Clay TS and the new Rainbow City SS.
Supporting Statement:	Addresses high loadings and provides maintenance flexibility for several 115 kV transmission lines in the Gadsden area.

In-Service Year:	2019
Project Name:	**EUTAW – SOUTH TUSCALOOSA 115 KV T.L.**
Description:	Rebuild approximately 30 miles of 397 ACSR transmission line at 100°C from Eutaw to South Tuscaloosa with 1033 ACSR at 100°C.
Supporting Statement:	Provides increased operational flexibility.

In-Service Year:	2019
Project Name:	**GORDON – SANDERSVILLE #1 115 KV T.L.**
Description:	Upgrade the 30 mile section from Gordon to Robins Spring along the Gordon – Sandersville #1 115 kV transmission line from 50°C to 100°C operation.
Supporting Statement:	The Gordon – Robins Spring section of the Gordon – Sandersville #1 115 kV transmission line overloads under contingency.

In-Service Year:	2019
Project Name:	**HOLT – SOUTH BESSEMER 230 KV T.L.**
Description:	Construct approximately 25 miles of 1351 ACSS 230 kV transmission line at 200°C from Holt to South Bessemer. Install a 230/115 kV transformer at a new Brookwood T.S. to tie into the existing Daimler D.S. and extend the transmission line from Daimler Tap. Install a 6 breaker switching station at the existing Daimler Tap.
Supporting Statement:	The Holt – Mercedes 115 kV transmission line overloads under contingency. This project also provides increased reliability and maintenance flexibility for the Tuscaloosa Area.

In-Service Year:	2019
Project Name:	**HONDA – KRONOSPAN 115 KV T.L.**
Description:	Construct approximately 10.3 miles of 795 ACSR 115 kV transmission line at 100°C from Honda to Kronospan.
Supporting Statement:	Provides increased reliability and voltage support and additional maintenance flexibility.

In-Service Year:	2019
Project Name:	**HOPE HULL AREA SOLUTION**
Description:	Construct approximately 1.8 miles of 795 ACSR 115 kV transmission line at 100°C between Hyundai Power Transformers to a tap point on the W. Montgomery – Pintlala 115 kV transmission line. Reconductor approximately 2.7 miles of the Hope Hull Tap – Hyundai Power Transformers 115 kV transmission line with 795 ACSR at 100°C.
Supporting Statement:	Provides increased reliability and additional maintenance flexibility.

In-Service Year:	2019
Project Name:	**KETTLE CREEK PRIMARY – PINE GROVE PRIMARY 115 KV T.L.**
Description:	Upgrade approximately 20 miles along the Kettle Creek – Pine Grove 115 kV transmission line from 50°C to 75°C operation.
Supporting Statement:	The Kettle Creek – Pine Grove 115 kV transmission line overloads under contingency.

In-Service Year:	2019
Project Name:	**NORTH BAY MINETTE SUBSTATION**
Description:	Construct a new substation at Bay Minette Tap and upgrade the Bay Minette DS – Steelwood 115 kV transmission line to 100°C.
Supporting Statement:	Provides additional maintenance flexibility.

In-Service Year:	2019
Project Name:	**THEODORE AREA PROJECT**
Description:	Construct approximately 5.3 miles of new 115 kV transmission line to the Praxair Tap from North Theodore and add a switching station near Tronox LLC. Reconductor approximately 1 mile of the Hollinger's Island – Holcim 115 kV transmission line to 795 ACSR at 100°C.
Supporting Statement:	Provides increased reliability and maintenance flexibility.

In-Service Year:	2019
Project Name:	**WADLEY PRIMARY 500/230 KV SUBSTATION**
Description:	Construct a new 500 kV substation on the Vogtle – Warthen 500 kV transmission line. Install a 2016 MVA, 500/230 kV transformer that ties to the Wadley Primary 230 kV bus. Upgrade the 230 kV bus at Wadley Primary with 2-1590 AAC.
Supporting Statement:	Project to enhance reliability in the Augusta area and to support the expansion of Plant Vogtle.

In-Service Year:	2020
Project Name:	**BIO BREAKER REPLACEMENT**
Description:	Replace the 1200 Amp breaker on the Avalon Junction 115 kV transmission line with a 2000 A breaker.
Supporting Statement:	The loss of the Bio – Vanna 230 kV transmission line causes the breaker at Bio substation to become overloaded.

In-Service Year:	2020
Project Name:	**BLAKELY PRIMARY – MITCHELL 115 KV T.L.**
Description:	Upgrade approximately 48.2 miles of 115 kV transmission line from Plant Mitchell to Morgan substation to 100°C operation.
Supporting Statement:	The Blakely Primary – Mitchell 115 kV transmission line overloads under contingency.

In-Service Year:	2020
Project Name:	**DEAL BRANCH – SYLVANIA 115 KV T.L.**
Description:	Upgrade approximately 23.1 miles along the Deal Branch – Sylvania 115 kV transmission line to 100°C operation.
Supporting Statement:	The Deal Branch – Sylvania 115 kV transmission line overloads under contingency.

In-Service Year:	2020
Project Name:	**EVANS PRIMARY – THOMSON PRIMARY 115 KV T.L.**
Description:	Reconductor approximately 4.2 miles of 115 kV transmission line along the Evans – Patriots Park section of the Evans Primary – Thomson Primary 115 kV transmission line with 795 ACSR at 100°C. Replace 336 ACSR jumper with 795 ACSR at 100°C.
Supporting Statement:	The Evans Primary – Thomson Primary 115 kV transmission line overloads under contingency.

In-Service Year:	2020
Project Name:	**MCINTOSH 230/115 KV SUBSTATION**
Description:	Replace the existing 280 MVA, 230/115 kV transformer with a 400 MVA transformer.
Supporting Statement:	The McIntosh 230/115 transformer overloads under contingency.

In-Service Year:	2020
Project Name:	**NORTH AMERICUS – PERRY 115 KV T.L.**
Description:	Rebuild approximately 43 miles of the existing 115 kV transmission line from North Americus to Perry substation with 795 ACSR at 100°C.
Supporting Statement:	The North Americus – Perry 115 kV transmission line overloads under contingency.

In-Service Year:	2020
Project Name:	**OFFERMAN 230/115 KV SUBSTATION**
Description:	Replace the existing 140 MVA 230/115 kV transformers with two 300 MVA 230/115 kV transformers.
Supporting Statement:	The Offerman 230/115 kV tranformers overload under contingency.

In-Service Year:	2020
Project Name:	**SINCLAIR DAM – WARRENTON 115 KV T.L.**
Description:	Reconductor approximately 17.4 miles of 115 kV transmission line along the Sinclair Dam – Warrenton 115 kV transmission line with 795 ACSR at 100°C.
Supporting Statement:	The Sinclair Dam – Warreton 115 kV transmission line overloads under contingency.

In-Service Year:	2020
Project Name:	**SOUTH AUGUSTA – GRANITEVILLE, SC 115 & 230 KV T.L.**
Description:	Construct a new 5.2 mile 230 kV tie-line (GPC to SCEG) from the South Augusta 230/115 kV substation to the GA/SC state line with bundled 1351 ACSR at 100°C. Also, rebuild 4.2 miles of the South Augusta – Elanco 115 kV transmission line from S. Augusta to the Nutrasweet Junction, and rebuild 1.0 mile of the Nutrasweet Junction transmission line to the GA/SC state line with 1351 ACSR at 100°C.
Supporting Statement:	The Savannah River (SCEG) – Voglte 230 kV transmission line and multiple facilities on SCEG system overload under contingency.

In-Service Year:	2020
Project Name:	**STATESBORO PRIMARY – WADLEY PRIMARY 115 KV T.L.**
Description:	Upgrade approximately 17.0 miles along the Nunez tap – Stillmore – Metter section of the Statesboro – Wadley Primary 115 kV transmission line from 50°C to 100°C operation. Replace the 600 A line switches at the Nunez Tap with 2000 A switches. Replace 600 A switches at Wadley Primary with 2000 A switches.
Supporting Statement:	The Nunez tap – Stillmore – Metter section of the Statesboro – Wadley Primary 115 kV transmission line overloads under contingency.

In-Service Year:	2021
Project Name:	**DOUGLASVILLE – POST ROAD 115 KV T.L.**
Description:	Reconductor approximately 6.0 miles along the Douglasville – Anneewakee Junction section of the Douglasville – Post Road 115 kV transmission line with 1033 ACSR at 100°C.
Supporting Statement:	The Douglasville 115 kV transmission line overloads under contingency.

In-Service Year:	2021
Project Name:	**KETTLE CREEK – PINE GROVE 115 KV T.L.**
Description:	Upgrade approximately 21.7 miles of the Kettle Creek – Pine Grove 115 kV transmission line to 75°C operation.
Supporting Statement:	The Kettle Creek – Pine Grove 115 kV transmission line overloads under contingency.

In-Service Year:	2022
Project Name:	**MOSS POINT EAST 230/115 KV SUBSTATION**
Description:	Upgrade the existing 115 kV switches at Moss Point East substations to 431 MVA.
Supporting Statement:	The Moss Point East 230/115 kV transformers overload under contingency.

In-Service Year:	2023
Project Name:	**BASSETT CREEK – LOWMAN 115 KV T.L.**
Description:	Reconductor approximately 20 miles of 397 and 795 ACSR from Bassett Creek – Lowman 115kV transmission line with 1351 ACSS at 200°C.
Supporting Statement:	Provides increased operational flexibility.

In-Service Year:	2023
Project Name:	**DAWES SUBSTATION AND AREA IMPROVEMENTS**
Description:	Construct a new substation at Dawes Tap on the Big Creek – N. Theodore 115 kV transmission line. Construct 4.0 miles of 795 ACSS transmission line at 160°C from Dawes SS to Lynndell TS. Reconductor approximately 4.0 miles of 115 kV transmission line from Lott Road – Schillinger Road with 795 ACSS at 200°C. Reconductor approximately 6.3 miles of 115 kV transmission line from North Mobile – Michael Blvd with 397 ACSS at 200°C.
Supporting Statement:	Provides increased reliability and additional maintenance flexibility.

In-Service Year:	2023
Project Name:	**DEMOPOLIS TS – CEMEX 115 KV T.L.**
Description:	Construct approximately 1.0 mile of 795 ACSR 115 kV transmission line at 100°C from Demopolis TS to Cemex.
Supporting Statement:	Provides increased reliability and additional maintenance flexibility.

In-Service Year:	2023
Project Name:	**FLOMATON 230/115 KV SUBSTATION**
Description:	Construct a new Flomaton 230/115 kV autobank at Flomation TS and reconductor approximately 16 miles of 795 ACSR at 100°C from N. Brewton – Flomaton 115kV with 1351 ACSR at 100°C.
Supporting Statement:	Provides increased reliability and maintenance flexibility.

In-Service Year:	2023
Project Name:	**HARRIS – NORTH SELMA 230 KV T.L.**
Description:	Rebuild approximately 26 miles of the Autaugaville (Harris SS) – North Selma 230 kV transmission line with 1033 ACCR at 200°C.
Supporting Statement:	The Harris – North Selma 230 kV transmission line overloads under contingency.

In-Service Year:	2023
Project Name:	**JACK MCDONOUGH – WEST MARIETTA (WHITE) 115 KV T.L.**
Description:	Reconductor approximately 4.0 miles of 115 kV transmission line from Plant McDonough to King Springs Road with 1033 ACSR at 100°C. Replace the 750 AAC jumpers at King Springs Road with 1590 AAC.
Supporting Statement:	The Jack McDonough – King Springs Road transmission line overloads under contingency.

In-Service Year:	2023
Project Name:	**MOULTRIE – NORTH TIFTON 115 KV T.L.**
Description:	Replace 115 kV jumpers on the Moultrie – North Tifton 115 kV transmission line at the North Tifton substation.
Supporting Statement:	The termianl equipment at North Tifton overload under contingency.

In-Service Year:	2024
Project Name:	**BLANKETS CREEK – WOODSTOCK 115 KV T.L.**
Description:	Rebuild approximately 2.5 miles of the Blankets Creek – Woodstock 115 kV transmission line with 1351 ACSR conductor at 100°C.
Supporting Statement:	The Blankets Creek – Woodstock 115 kV transmission line overloads under contingency.

In-Service Year:	2024
Project Name:	**BONAIRE PRIMARY – KATHLEEN 115 KV T.L.**
Description:	Reconductor approximately 5.9 miles of existing 336 ACSR 115 kV transmission line from Bonaire Primary to Kathleen with 795 ACSR at 100°C.
Supporting Statement:	The Bonaire Primary – Kathleen 115 kV transmission line overloads under contingency.

In-Service Year:	2024
Project Name:	**BRUNSWICK – EAST BEACH (SEA ISLAND) 115 KV T.L.**
Description:	Upgrade approximately 1.5 miles of the Frederica tap – Sea Island section of the Brunswick – East Beach 115 kV transmission line to 75°C.
Supporting Statement:	During Hot Weather load level conditions, the Frederica tap – Sea Island section of the Brunswick – East Beach 115 kV transmission line becomes overloaded.

In-Service Year:	2024
Project Name:	**BRUNSWICK – ST SIMONS 115 KV T.L**
Description:	Reconductor approximately 2.7 miles of the Brunswick – Stonewall Street 115 kV transmission line with 795 ACSR at 100°C. Also, upgrade three breakers at Brunswick SS to 1200 Amps.
Supporting Statement:	The Brunswick – Saint Simons 115 kV transmission line overloads under contingency.

In-Service Year:	2024
Project Name:	**CLARKSTON – SCOTTDALE 115 KV T.L.**
Description:	Upgrade approximately 2.7 miles of the Scottdale – Clarkston Junction section of the Clarkston – Scottdale 115 kV transmission line to 160°C.
Supporting Statement:	The Clarkston – Scottdale 115 kV transmission line overloads under contingency.

In-Service Year:	2024
Project Name:	**DYER ROAD 230/115 KV SUBSTATION**
Description:	Install a second 230/115 kV, 400 MVA transformer at Dyer Road.
Supporting Statement:	The existing Corn Crib 230/115 kV transformer overloads under contingency.

In-Service Year:	2024
Project Name:	**EAST POINT – CAMP CREEK 115 KV T.L.**
Description:	Rebuild the East Point – Ben Hill section of the East Point – Camp Creek 115 kV transmission line with 1351 ACSR at 100°C. Replace the existing 600 A breakers at East Point with 2000 A breakers.
Supporting Statement:	The East Point – Ben Hill tap section of the East Point – Camp Creek 115 kV transmission line overloads under contingency.

In-Service Year:	2024
Project Name:	**EAST VIDALIA SUBSTATION**
Description:	Replace 600 A switch at East Vidalia with a 1200 A switch.
Supporting Statement:	The switch at East Vidalia overloads under contingency.

In-Service Year:	2024
Project Name:	**FAYETTE – GORGAS 161 KV T.L.**
Description:	Rebuild approximately 37 miles of 397.5 ACSR at 100°C on the Fayette - Gorgas 161kV TL with 795 ACSS at 160°C.
Supporting Statement:	The Fayette – Gorgas 161 kV transmission line overloads under contingency.

In-Service Year:	2024
Project Name:	**GRADY – MORROW 115 KV T.L.**
Description:	Rebuild approximately 3.5 miles of the Grady – Morrow 115 kV transmission line with 1033 ACSR at 100°C.
Supporting Statement:	The Grady – Morrow 115 kV transmission line overloads under contingency.

In-Service Year:	2024
Project Name:	**KLONDIKE – MORROW 230 KV SUBSTATION**
Description:	Replace two 1200 A switches at Morrow Substation on the Klondike – Morrow 230 kV transmission line with 2000 A switches.
Supporting Statement:	The switches at Morrow overload under contingency.

In-Service Year:	2024
Project Name:	**LAWRENCEVILLE – NORCROSS 230 KV T.L.**
Description:	Reconductor 5.9 miles of the Boggs Road – Lawrenceville section of the Lawrenceville – Norcross 230 kV transmission line with 1351 ACSS at 170°C.
Supporting Statement:	The Lawrenceville – Norcross 230 kV transmission line overloads under contingency.

In-Service Year:	2024
Project Name:	**NORTH MARIETTA – SMYRNA (BLACK & WHITE) 115 KV T.L.**
Description:	Reconductor 2.4 miles of the North Marietta – Lockheed Martin Tap section of the North Marietta – Smyrna Black and White 115 kV transmission lines with 657 ACSR at 100°C.
Supporting Statement:	The North Marietta – Lockheed Martin Tap section of the North Marietta – Smyrna Black and White 115 kV transmission line becomes overloaded under contingency.

In-Service Year:	2024
Project Name:	**POSSUM BRANCH – YATES 115 KV T.L.**
Description:	Reconductor approximately 12 miles of the Possum Branch – Yates 115 kV transmission line with 1351 ACSR conductor at 100°C.
Supporting Statement:	The Possum Branch – Yates 115 kV line overloads under contingency.

In-Service Year:	2024
Project Name:	**SOUTH COWETA – SOUTH GRIFFIN 115 KV T.L.**
Description:	Reconductor approximately 5.0 miles of 115 kV transmission line along the South Coweta – Brooks section of the South Coweta – South Griffin 115 kV transmission line with 1033 ACSR at 100°C.
Supporting Statement:	The South Coweta – Brooks section of the South Coweta – South Griffin 115 kV transmission line overloads under contingency.

In-Service Year:	2025
Project Name:	**ALBANY – SYLVESTER 115 KV T.L.**
Description:	Upgrade approximately 10.6 miles of 115 kV transmission line from the Sylvester Primary substation to the Sylvester Primary Junction with 336 ACSR at 100°C.
Supporting Statement:	A section of the Sylvester Primary 115 kV transmission line overloads under contingency.

In-Service Year:	2025
Project Name:	**CONYERS – CORNISH MOUNTAIN 115 KV T.L.**
Description:	Reconductor approximately 4.8 miles along the Conyer – Cornish Mounain 115 kV transmission line with 795 ACSS at 160°C.
Supporting Statement:	The Conyers – Cornish Mountain 115 kV transmission line overloads under contingency.

In-Service Year:	2025
Project Name:	**HOLLY SPRINGS – HOPEWELL 115 KV T.L.**
Description:	Reconductor approximately 3.3 miles of 636 ACSR 115 kV transmission line from Hopewell to Birmingham with 1033 ACSR at 100°C. Also, replace the 636 ACSR jumpers at Birmingham with 1590 AAC jumpers.
Supporting Statement:	The Hopewell – Birmingham transmission line overloads under contingency.

In-Service Year:	2025
Project Name:	**MCEVER ROAD – SHOAL CREEK 115 KV T.L.**
Description:	Reconductor approximately 19.6 miles of 115 kV transmission line along the McEver Road – Shoal Creek 115 kV transmission line with 1351 ACSR at 100°C.
Supporting Statement:	The McEver Road – Shoal Creek 115 kV tansmission line overloads under contingency.

In-Service Year:	2025
Project Name:	**MORROW – YATES 115 KV T.L.**
Description:	Upgrade approximately 6.0 miles of the Fife – Owens Corning tap section of the Morrow – Yates 115 kV transmission line to 100°C.
Supporting Statement:	During Summer Peak load level conditions, the existing 477 ACSR conductor on the Fife – Owens 115 kV transmission line becomes overloaded.

In-Service Year:	2026
Project Name:	**BASSETT CREEK – MCINTOSH 115 KV T.L.**
Description:	Reconductor approximately 46 miles of 397 and 795 ACSR from Bassett Creek – McIntosh 115kV transmission line with 1351 ACSS at 200°C.
Supporting Statement:	Provides increased operational flexibility.

In-Service Year:	2026
Project Name:	**DUM JON – FORT GORDON #2 115 KV SUBSTATION**
Description:	Replace two 600A switches at Fort Gordon Hospital station with 2000A switches. Replace the 300 Cu jumpers and bus at Fort Gordon substation with 1590 AAC jumpers.
Supporting Statement:	The Dum Jon – Fort Gordon #2 115 kV transmission line overloads under contingency.

In-Service Year:	2026
Project Name:	**MOSS POINT EAST – PASCAGOULA BAYOU CASOTTE 115 KV T.L.**
Description:	Construct approximately 2.7 miles of new 1033.5 ACSR 115 kV transmission line at 100°C from Moss Point East and connect into the existing BP Amoco – Pascagoula Bayou Cassotte 115 kV transmission line.
Supporting Statement:	The Moss Point East – Pascagoula MS Chemical 115 kV transmission line overloads under contingency.

In-Service Year:	2026
Project Name:	**NORCROSS – OCEE 230 KV T.L**
Description:	Reconductor approximately 3.7 miles along the Norcross – Ocee 230 kV line with 1033 ACSS at 160°C.
Supporting Statement:	The Norcross – Ocee 230 kV transmission line overloads under contingency.

In-Service Year:	2026
Project Name:	**NORTH AMERICUS – PALMYRA 230 KV T.L.**
Description:	Upgrade approximately 33.3 miles of the North Americus – Palmyra 230 kV transmission line to 100°C operation.
Supporting Statement:	The North Americus – Palymyra transmission line overloads under contingency.

In-Service Year:	2026
Project Name:	**PINE GROVE PRIMARY – WEST VALDOSTA 115 KV T.L.**
Description:	Reconductor approximately 3.7 miles of the Pine Grove Primary – West Valdosta 115 kV transmission line with 795 ACSR at 100°C.
Supporting Statement:	The Pine Grove – West Valdosta 115 kV tranmsission line overloads under contingency.

In-Service Year:	2017
Project Name:	**CALHOUN AREA IMPROVEMENT 115 KV T.L.**
Description:	Construct approximately 19.2 miles of new 115 kV transmission line to create the Swamp Creek – Fuller 115 kV transmission line with 1351 ACSR at 100°C.
Supporting Statement:	Additional voltage support needed in the northern GA area under contingency.

In-Service Year:	2017
Project Name:	**JOHNSONVILLE FP SUBSTATION**
Description:	Install a 500/161 kV inter-tie transformer at the Johnsonville Fossil Plant substation.
Supporting Statement:	The retirement of Johnsonville units 1-10 requires the replacement of the 500/161 kV inter-tie transformer bank at Johnsonville.

In-Service Year:	2017
Project Name:	**JOHNSONVILLE FP SUBSTATION**
Description:	Install a capacitor bank of 5, 36 MVAR capacitors at the Johnsonville Fossil Plant substation.
Supporting Statement:	Retirement of Johnsonville FP Units 1-10 will result in the need for additional voltage support in the Johnsonville area.

In-Service Year:	2017
Project Name:	**JOHNSONVILLE FP SUBSTATION**
Description:	Reconfigure the Johnsonville Fossil Plant substation. Project includes the retermination of a transmission line and transformer, along with various breaker and terminal equipment modifications.
Supporting Statement:	Thermal overloads occur in the Columbia, TN and Bowling Green, KY areas under contingency.

In-Service Year:	2017
Project Name:	**SELMER – W. ADAMSVILLE 161 KV T.L.**
Description:	Construct approximately 15 miles of 161 kV transmission line from Selmer to W. Adamsville with 954 ACSR at 100°C.
Supporting Statement:	Additional voltage support is needed in the Bolivar, TN area under contingency.

In-Service Year:	2017
Project Name:	**SUMMER SHADE – SUMMER SHADE TAP 161 KV T.L.**
Description:	Reconductor approximately 0.1 miles of 161kV transmission line from the Summer Shade to Summer Shade Tap 161 kV line section with 795 ACSR at 100°C.
Supporting Statement:	The Summer Shade – Summer Shade Tap 161 transmission kV line section overloads under contingency.

In-Service Year:	2018
Project Name:	**BOWLING GREEN – MEMPHIS JUCTION 161 KV T.L.**
Description:	Upgrade approximately 7.5 miles of the Bowling Green – Memphis Junction 161 kV transmission line to 100°C operation.
Supporting Statement:	The Bowling Green – Memphis Junction 161 kV transmission line overloads under contingency.

In-Service Year:	2018
Project Name:	**COUNCE, TN 161 KV SUBSTATION**
Description:	Install a capacitor bank of 5, 9 MVAR capacitors in the Counce 161 kV substation.
Supporting Statement:	Additional voltage support is needed in the Counce, TN area under contingency

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In-Service Year:	2018
Project Name:	**HARRIMAN, TN 161 KV SUBSTATION**
Description:	Reconfigure the Harriman, TN 161 kV substation by looping an additional 161 kV transmission line into the substation and installing 3, 161 kV breakers.
Supporting Statement:	Additional voltage support is needed in the Harriman, TN area under contingency.

In-Service Year:	2018
Project Name:	**MURFREESBORO IND PARK 161 KV SUBSTATION**
Description:	Install a capacitor bank of 6, 9 MVAR 161 kV capacitors at a new 161 kV switching station near the Murfreesboro Industrial Park substation.
Supporting Statement:	Additional voltage support is needed in the Murfreesboro area under contingency.

In-Service Year:	2018
Project Name:	**NASHVILLE AREA IMPROVEMENT PLAN**
Description:	Install an additional 1344 MVA, 500/161 kV transformer at the Pin Hook 500 kV substation. Reconductor the Nolensville Road – Elysian Fields 161 kV transmission line with 636 ACSS at 150°C. Reconductor the Murfreesboro Road – Airport 161 kV transmission line with 636 ACSS at 150°C. Reconductor the Blackman Tap – Smyrna 161 kV transmission line with 636 ACSS at 150°C. Construct the Montgomery – Clarksville #3 161 kV transmission line with 1590 ACSS at 150°C.
Supporting Statement:	Thermal overloads and additional voltage support is needed in the Nashville area under contingency.

In-Service Year:	2018
Project Name:	**PLATEAU 500 KV SUBSTATION**
Description:	Construct the Plateau 500 kV substation by looping in the Wilson – Roane 500 kV and West Cookeville – Rockwood 161 kV transmission lines.
Supporting Statement:	Thermal overload and need for additional voltage support in the Murfreesboro, TN and Knoxville, TN areas under contingency.

In-Service Year:	2018
Project Name:	**ROYAL BLUE, TN 161 KV SUBSTATION**
Description:	Install a capacitor bank of 5, 9 MVAR capacitors at a new switching station near the Royal Blue, TN delivery point.
Supporting Statement:	Additional voltage support is needed in the Caryville, TN area under contingency.

In-Service Year:	2018
Project Name:	**WEST COOKEVILLE 161 KV SUBSTATION**
Description:	Upgrade terminal equipment to 335 MVA at the West Cookeville 161 kV substation.
Supporting Statement:	The West Cookeville – South Cookeville 161 kV transmission line overloads under contingency.

In-Service Year:	2019
Project Name:	**RED HILLS – LEAKE 161 KV T.L.**
Description:	Construct approximately 60 miles of the new Red Hills – Leake 161 kV transmission line with 954 ACSR at 100°C.
Supporting Statement:	Multiple 161 kV transmission lines in the lower MS area overload under contingency and additional voltage support is needed in the lower MS area under contingency.

In-Service Year:	2019
Project Name:	**WIDOWS CREEK FP SUBSTATION**
Description:	Install a second 500/161 kV transformer at the Widows Creek Fossil Plant substation.
Supporting Statement:	Multiple transmission lines overload and additional voltage support needed in the Huntsville, AL area under contingency.

In-Service Year:	2020
Project Name:	**ALCOA SS – NIXON ROAD 161 KV T.L.**
Description:	Rebuild approximately 12 miles of the Alcoa North – Nixon Road 161 kV transmission line with 1590 ACSR at 100°C and construct approximately 2 miles of new transmission line to create the Alcoa SS – Nixon Rd 161 kV #2 transmission line.
Supporting Statement:	The Alcoa Switching Station – Nixon Road 161 kV transmission line overloads under contingency.

In-Service Year:	2020
Project Name:	**BLUFF CITY – ELIZABETHTON 161 KV T.L.**
Description:	Construct approximately 12 miles of 161 kV transmission line from Bluff City to Elizabethton with 954 ACSR at 100°C.
Supporting Statement:	Additional voltage support is needed in the Elizabethton, TN area under contingency.

In-Service Year:	2020
Project Name:	**HOLLY SPRINGS, MS 161 KV SUBSTATION**
Description:	Install a capacitor bank of 3, 27 MVAR capacitors at the Holly Springs, MS 161 kV switching station.
Supporting Statement:	Additional voltage support is needed in the N. Haven, MS area under contingency.

In-Service Year:	2021
Project Name:	**WEST POINT – STARKVILLE 161 KV T.L.**
Description:	Reconductor approximately 14 miles of the West Point – Starkville 161 kV transmission line with 954 ACSS at 125°C.
Supporting Statement:	The West Point – Starkville 161 kV transmission line overloads under contingency.

In-Service Year:	2023
Project Name:	**SCOTTSBORO – HENAGAR 161-KV TL**
Description:	Construct approximately 14 miles of new 161 kV transmission line from Scottsboro to Henagar with 954 ACSR at 100°C.
Supporting Statement:	Thermal overloads are present and additional voltage support is needed under contingency.

In-Service Year:	2024
Project Name:	**RADNOR – PIN HOOK 161 KV T.L.**
Description:	Reconductor approximately 10 miles of the Radnor – Pin Hook 161 kV transmission line with 1590 ACSS at 125°C.
Supporting Statement:	The Radnor – Pin Hook 161 kV transmission line overloads under contingency.

In-Service Year:	2024
Project Name:	**W. NASHVILLE – CLARKSVILLE 161 KV T.L.**
Description:	Upgrade approximately 8 miles of the W. Nashville – Clarksville 161 kV tranmission line to 100°C operation.
Supporting Statement:	The W. Nashville – Clarksville 161 kV transmission line overloads under contingency.

In-Service Year:	2025
Project Name:	**HIWASSEE HP AND MURPHY 161 KV SUBSTATION**
Description:	Install additional breakers at the Hiwassee HP 161 kV Substation to provide a double breaker bus configuration. Install additional breakers at the Murphy, NC 161 kV Substation to create a ring bus configuration. Construct approximately 2 miles of transmission line from the Murphy 161 kV Substation to Harshaw Road 161 kV Substation with 954 ACSR at 100°C.
Supporting Statement:	Additional voltage support is needed in the area under contingency.

In-Service Year:	2025
Project Name:	**RICKMAN 161 KV SUBSTATION**
Description:	Install a capacitor bank of 5, 9 MVAR 161 kV capacitors at the Rickman, TN Substation.
Supporting Statement:	Additional voltage support is needed in the area under contingency.

Appendix 1: AECI BAA

The following information provides a more granular overview of the AECI BAA input assumptions and transmission expansion plan that are incorporated in the development of the SERTP regional transmission plan.

Table A1.1: 2016 SERTP Regional Transmission Plan – Transmission Project Snapshot by operating voltage (AECI BAA)

AECI BAA	100-120 kV	121-150 kV	151-199 kV	200-299 kV	300-399 kV	400-550 kV
Transmission lines – New (Circuit Mi.)	--	--	36.0	--	--	--
Transmission Lines – Uprates[1] (Circuit Mi.)	--	--	--	--	--	--
Transformers[2] – New	--	--	1	--	1	--
Transformers[2] – Replacements	--	--	--	--	--	--

[1]A transmission line uprate may be the result of reconductoring and/or increasing the operating temperature/voltage along the transmission line.
[2]The voltages shown represent the operating voltages on the high side terminals of the transformer

Table A1.2: Interface commitments[1] modeled in the SERTP Summer Peak models – AECI BAA

To	2017	2019	2021	2022	2024	2026
SPP	-655	-619	-619	-619	-619	-619
MISO	-49	-50	-50	-50	-50	-50
Total	-704	-669	-669	-669	-669	-669

[1]A positive number represents a net export from the AECI BAA

A detailed listing of the changes in generation assumptions within the AECI BAA throughout the ten (10) year planning horizon, including the year(s) in which they occur, is provided in Table A1.3 below. Table A1.4 provides a listing of generation assumptions based upon long-term, firm point-to-point commitments. The capacity (MW) values shown for each year reflect summer peak conditions. Table A1.5 provides a listing of all generators modeled in the 2017 Summer Peak powerflow model.

Table A1.3: Changes in Generation Assumptions Based Upon LSEs – AECI BAA

Site	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
No changes in generation assumptions throughout the planning horizon										

Table A1.4: Generation Assumptions Based Upon Expected Long-term, Firm Point-to-Point Commitments – AECI BAA

Site	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
None										

Table A1.5: Generating Units Modeled in the 2017 Summer Peak Powerflow Model – AECI BAA

Plant	Unit	Bus #	Bus Name	Pmax (MW)
Albany City	1	300269	2ALBNCTY	4.7
Atchison	1	300009	1ACHSNG1	18.9
Atchison	2	300009	1ACHSNG1	31.5
Bethany City	1	300219	2BETHCT	7.6
Butler East	1	300690	2BUTLERE	11.6
Chillicothe City	1	300214	2CHILCTY	40.0
Chillicothe City	2	300214	2CHILCTY	40.0
Chillicothe City B	3	301364	2CHILCTYB	11.0
Chouteau	1	300020	1CHOTCT4	149.1
Chouteau	1	300021	1CHOTCT5	149.1
Chouteau	1	300024	1CHOTST6	154.9
Chouteau	1	300031	1CHOTST3	154.9

Plant	Unit	Bus #	Bus Name	Pmax (MW)
Chouteau	1	300032	1CHOTCT1	149.1
Chouteau	1	300033	1CHOTCT2	149.1
Clyde	1	300273	1CLYDEG1	18.9
Clyde	2	300273	1CLYDEG1	31.5
Dell	1	300015	1SGPDEL	239.1
Dell	1	300016	1G1GPDEL	169.9
Dell	1	300017	1G2GPDEL	169.9
El Dorado City	1	300807	2ELDRCTY	5.5
Essex	1	300029	1ESSEXG	107.4
Gallatin	1	300198	2GALLTN	7.0
Gentry Generation	1	300008	1GNTRYG1	18.9
Gentry Generation	2	300008	1GNTRYG1	37.8
Holden	1	300012	1HOLDNG1	107.0
Holden	1	300013	1HOLDNG2	108.0
Holden	1	300014	1HOLDNG3	108.5
Lamar	1	301363	1LAMRLNDFL	1.6
Lamar	2	301363	1LAMRLNDFL	1.6
Lamar City South	1	300652	2LAMRCTS	6.1
Macon	1	300405	2MCNPLT	13.8
Macon East #3	1	300399	2MACN3E	7.2
Memphis City	1	300423	2MEMCTY	9.2
Monroe City	1	300343	2MONRCT	11.9
Mt. Pleasant City	1	301449	2MTPLAD	24.0
New Madrid	1	300006	1NM G1	572.0
New Madrid	1	300007	1NM G2	574.0
Nodaway	1	300025	1NDWYG1	96.0
Nodaway	1	300026	1NDWYG2	97.0

Plant	Unit	Bus #	Bus Name	Pmax (MW)
Osage	1	301382	1OSAGEWINDG1	150.0
Palmyra City	1	300353	2PALMCTY	12.5
Rockport	1	300319	1ROCKPTG1	4.8
Rockport	2	300319	1ROCKPTG1	5.0
Shelbina	1	300407	2SHELBN	14.7
St Francis	1	300010	1STFRG1	230.7
St Francis	1	300011	1STFRG2	239.3
Stanberry	1	300267	2STANBR	3.6
Ten Mile	1	300456	2TENMILE	8.5
Thomas Hill	1	300001	1THLG1	166.0
Thomas Hill	1	300002	1THLG2	270.0
Thomas Hill	1	300003	1THLG3	715.0
Trenton City	1	300238	2TRENCT	30.1
Unionville (MOPEP) 1	1	300288	1UNONVL	7.9
Vandalia City	1	300582	2VANCTY	6.3
West Plains City	1	300027	1WPLCTG1	22.0
West Plains City	1	300028	1WPLCTG2	22.0
Winslow	1	301358	1WINSLOWG1	30.0
Winslow	2	301358	1WINSLOWG1	120.0

Appendix 2: Duke Energy Carolinas BAA

The following information provides a more granular overview of the Duke Energy Carolinas BAA input assumptions and transmission expansion plan that are incorporated in the development of the SERTP regional transmission plan.

Table A2.1: 2016 SERTP Regional Transmission Plan – Transmission Project Snapshot by operating voltage (Duke Energy Carolinas BAA)

Duke Energy Carolinas BAA	100-120 kV	121-150 kV	151-199 kV	200-299 kV	300-399 kV	400-550 kV
Transmission lines – New (Circuit Mi.)	8	--	--	--	--	--
Transmission Lines – Uprates[1] (Circuit Mi.)	92.6	--	--	18	--	--
Transformers[2] – New	--	--	--	6	--	--
Transformers[2] – Replacements	--	--	--	2	--	--

[1]A transmission line uprate may be the result of reconductoring and/or increasing the operating temperature/voltage along the transmission line.
[2]The voltages shown represent the operating voltages on the high side terminals of the transformer

Table A2.2: Interface commitments[1] modeled in the SERTP Summer Peak models – Duke Energy Carolinas BAA

To	2017	2019	2021	2022	2024	2026
Duke Progress East	1058	1058	1058	1058	1058	1058
SCE&G	-2	-2	-2	-2	-2	-2
SCPSA	-301	-130	-144	-151	-166	-183
Southern	-70	-70	-70	-70	-70	-70
PJM	48	98	98	98	98	98
SEPA	-268	-268	-268	-268	-268	-268
Total	465	686	672	665	650	633

[1]A positive number represents a net export from the Duke Energy Carolinas BAA

A detailed listing of the changes in generation assumptions within the Duke Energy Carolinas BAA throughout the ten (10) year planning horizon, including the year(s) in which they occur, is provided in Table A2.3 below. Furthermore, supplemental information regarding noteworthy generation expansion and retirements/decertifications included in the 2016 series set of SERTP powerflow models is provided below, while Table A2.4 provides a listing of generation assumptions based upon long-term, firm point-to-point commitments. The capacity (MW) values shown for each year reflect summer peak conditions. Table A2.5 provides a listing of all generators modeled in the 2017 Summer Peak powerflow model.

Table A2.3: Changes in Generation Assumptions Based Upon LSEs – Duke Energy Carolinas BAA

Site	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Lee CC	0	776	776	776	776	776	776	776	776	776
Kings Mountain Energy Center	0	452	452	452	452	452	452	452	452	452

Noteworthy Generation Expansion

- Duke Energy Carolinas is constructing a new 776 MW combined cycle unit at Lee with scheduled commercial operation in 2018.
- NTE is constructing a new 452 MW combined cycle unit at Kings Mountain Energy Center with scheduled commercial operation in 2018.

Noteworthy Generation Retirements/Decertifications

- None

Table A2.4: Generation Assumptions Based Upon Expected Long-term, Firm Point-to-Point Commitments – Duke Energy Carolinas BAA

Site	2017	2018	2019	2020	2021	2022	2023	2024	2025	2017
Broad River	850	850	850	850	850	850	850	850	850	850
Catawba	155	155	155	155	155	155	155	155	155	155
Duke Fleet	100	100	100	100	100	100	100	100	100	100
Rowan	150	150	150	150	150	150	150	150	150	150

Table A2.5: Generating Units Modeled in the 2017 Summer Peak Powerflow Model – Duke Energy Carolinas BAA

Plant	Id	Bus Number	Bus Name	PMax (MW)
Allen	5	307853	1ALLEN 5	159.1
Allen	L	307853	1ALLEN 5	130.9
Allen	1	307854	1ALLEN 1	174.0
Allen	3	307855	1ALLEN 3	149.0
Allen	L	307855	1ALLEN 3	122.0
Allen	2	307863	1ALLEN 2	172.0
Allen	4	307864	1ALLEN 4	146.1
Allen	L	307864	1ALLEN 4	127.9
Apple	1	308387	APPLEPV3	16.2
Ayrshire	1	308375	1AYRSHIRE	16.8
Bad Creek	1	306207	1BADCRK12	350.0
Bad Creek	2	306207	1BADCRK12	350.0
Bad Creek	3	306208	1BADCRK34	350.0
Bad Creek	4	306208	1BADCRK34	350.0
Bear Creek	1	308517	1BEARCRK	9.0
Belews Creek	1	308377	1BELEWS1	637.0
Belews Creek	L	308377	1BELEWS1	500.0
Belews Creek	2	308378	1BELEWS2	637.0
Belews Creek	L	308378	1BELEWS2	500.0
Bridgewater	1	308079	1BRIDGEW	15.5
Bridgewater	2	308920	1BRIDGEW2	15.5
Broad River Energy	4	306222	1BRECG4	175.0
Broad River Energy	5	306224	1BRECG5	175.0
Broad River Energy	1	306314	1BRECG1	175.0

Plant	Id	Bus Number	Bus Name	PMax (MW)
Broad River Energy	2	306315	1BRECG2	175.0
Broad River Energy	3	306316	1BRECG3	175.0
Buck	11	308090	1BUCKG11	176.5
Buck	12	308091	1BUCKG12	176.5
Buck	10	308092	1BUCKS10	333.0
Buzzard Roost	1	307037	1BUZZHYD	4.3
Buzzard Roost	2	307037	1BUZZHYD	4.3
Buzzard Roost	3	307037	1BUZZHYD	4.3
Catawba	1	307856	1CATAWBA1	1180.0
Catawba	2	307857	1CATAWBA2	1160.0
Cedar Cliff	1	307858	1CEDAR CK	13.0
Cedar Cliff	2	307858	1CEDAR CK	15.0
Cedar Cliff	3	307858	1CEDAR CK	15.0
Cedar Creek	1	308516	1CEDARCL	6.4
Cherokee	1	306325	1CHEROKEG	57.0
Cherokee	1	306326	1CHEROKES	29.0
Cleveland County	1	308607	1CLEVELAND	178.0
Cleveland County	2	308608	1CLEVELAND	178.0
Cleveland County	3	308609	1CLEVELAND	178.0
Cleveland County	4	308610	1CLEVELAND	178.0
Cliffside	5	307610	1CLIFSID5	566.0
Cliffside	6	308789	1CLFSDGEN	850.0
Cowans Ford	1	308227	1COWANS1	81.0
Cowans Ford	2	308237	1COWANS2	81.0
Cowans Ford	3	308238	1COWANS3	81.0
Cowans Ford	4	308239	1COWANS4	81.0
Dan River	8	308603	1DNRVRG8	176.5

Plant	Id	Bus Number	Bus Name	PMax (MW)
Dan River	9	308604	1DNRVRG9	176.5
Dan River	7	308605	1DNRVRS7	333.0
Dearborn	1	307859	1DEARBN1	14.0
Dearborn	2	307860	1DEARBN23	14.0
Dearborn	3	307860	1DEARBN23	14.0
Fishing Creek	1	307861	1FISHNG C	11.0
Fishing Creek	2	307861	1FISHNG C	9.5
Fishing Creek	3	308912	1FISHNG C2	9.5
Fishing Creek	4	308912	1FISHNG C2	11.0
Fishing Creek	5	308912	1FISHNG C2	8.0
Gaston Shoals	1	307466	1GAST HY	5.7
Great Falls	1	307702	1GTFALLS	3.0
Great Falls	2	307702	1GTFALLS	3.0
Great Falls	3	307702	1GTFALLS	3.0
Great Falls	4	307702	1GTFALLS	3.0
Great Falls	5	307702	1GTFALLS	3.0
Great Falls	6	307702	1GTFALLS	3.0
Great Falls	7	307702	1GTFALLS	3.0
Great Falls	8	307702	1GTFALLS	3.0
Jocassee	1	307370	1JOCASSE1	195.0
Jocassee	2	307371	1JOCASSE2	195.0
Jocassee	3	307372	1JOCASSE3	195.0
Jocassee	4	307373	1JOCASSE4	195.0
Keowee	1	307195	1KEOWEE	80.0
Keowee	2	308880	1KEOWEE2	80.0
Lee	3	307197	1LEE 3	170.0
Lee	7	307198	1LEE CT7	43.0

Plant	Id	Bus Number	Bus Name	PMax (MW)
Lee	8	307882	1LEE CT8	43.0
Lee	10	308613	1LEECCS10	327.0
Lee	11	308614	1LEECCG11	224.5
Lee	12	308615	1LEECCG12	224.5
Lincoln	1	306509	1LINCLN1	79.0
Lincoln	2	306510	1LINCLN2	79.0
Lincoln	3	306511	1LINCLN3	79.0
Lincoln	4	306512	1LINCLN4	79.0
Lincoln	5	306513	1LINCLN5	79.0
Lincoln	6	306514	1LINCLN6	79.0
Lincoln	7	306515	1LINCLN7	79.0
Lincoln	8	306516	1LINCLN8	79.0
Lincoln	9	306517	1LINCLN9	79.0
Lincoln	A	306518	1LINCLN10	79.0
Lincoln	B	306519	1LINCLN11	79.0
Lincoln	C	306520	1LINCLN12	79.0
Lincoln	D	306521	1LINCLN13	79.0
Lincoln	E	306522	1LINCLN14	79.0
Lincoln	F	306523	1LINCLN15	79.0
Lincoln	G	306524	1LINCLN16	79.0
Lookout Tie	1	308080	1LOOKOUT	9.3
Lookout Tie	2	308080	1LOOKOUT	9.3
Lookout Tie	3	308080	1LOOKOUT	9.3
Marshall	1	308081	1MARSHAL1	181.0
Marshall	L	308081	1MARSHAL1	181.0
Marshall	3	308082	1MARSHAL3	660.0
Marshall	2	308087	1MARSHAL2	182.0

Plant	Id	Bus Number	Bus Name	PMax (MW)
Marshall	L	308087	1MARSHAL2	182.0
Marshall	4	308088	1MARSHAL4	660.0
McGuire	1	308228	1MCGUIRE1	1170.0
McGuire	2	308229	1MCGUIRE2	1170.0
Mill Creek	1	306082	1MILLCKG1	76.0
Mill Creek	2	306083	1MILLCKG2	76.0
Mill Creek	3	306084	1MILLCKG3	76.0
Mill Creek	4	306086	1MILLCKG4	76.0
Mill Creek	5	306087	1MILLCKG5	76.0
Mill Creek	6	306088	1MILLCKG6	76.0
Mill Creek	7	306090	1MILLCKG7	76.0
Mill Creek	8	306091	1MILLCKG8	76.0
Mocks	1	307613	1MOCKSVPV	13.0
Monroe	1	307614	MONROEPV	53.0
Mountain Island	1	308179	1MT ISLE	14.0
Mountain Island	2	308179	1MT ISLE	14.0
Mountain Island	3	308179	1MT ISLE	17.0
Mountain Island	4	308179	1MT ISLE	17.0
Nantahala	1	308558	1NANTAHA	51.0
Ninety-Nine Islands	1	307749	1NINETY9	15.0
Oconee	1	307199	1OCONEE1	863.0
Oconee	3	307200	1OCONEE3	863.0
Oconee	2	307210	1OCONEE2	863.0
Oxford	1	308083	1OXFORD	20.0
Oxford	2	308683	1OXFORD2	20.0
Rhodhiss	1	308084	1RHODHIS	10.0
Rhodhiss	2	308084	1RHODHIS	12.0

Plant	Id	Bus Number	Bus Name	PMax (MW)
Rhodhiss	3	308084	1RHODHIS	12.0
Rockingham County	4	306828	1ROCKHMG04	165.0
Rockingham County	5	306829	1ROCKHMG05	165.0
Rockingham County	1	306831	1ROCKHMG01	165.0
Rockingham County	2	306832	1ROCKHMG02	165.0
Rockingham County	3	306833	1ROCKHMG03	165.0
Rocky Creek	1	307846	1ROCKYCR	2.9
Rocky Creek	2	307846	1ROCKYCR	2.9
Rocky Creek	3	307846	1ROCKYCR	2.9
Rocky Creek	4	307846	1ROCKYCR	2.9
Rocky Creek	5	307846	1ROCKYCR	4.8
Rocky Creek	6	307846	1ROCKYCR	4.8
Rocky Creek	7	307846	1ROCKYCR	2.9
Rocky Creek	8	307846	1ROCKYCR	2.9
Rowan	1	306991	1ROWANC1	154.3
Rowan	2	306992	1ROWANC2	154.3
Rowan	3	306993	1ROWANC3	154.3
Rowan	4	306994	1ROWANC4	150.4
Rowan	5	306995	1ROWANC5	150.4
Rowan	6	306996	1ROWANS1	169.0
Ruth	1	306146	RUTHPV	61.0
Spconover	1	308391	SPCONOVR	20.0
SunEd	1	308784	SUNED100	15.0
Tennessee Creek	1	308518	1TENNCRK	10.8
Thorpe	1	308600	1THORPE	21.6
Thorpe	2	308600	1THORPE	3.0
Turner	1	307599	1TURN HY	1.5

Plant	Id	Bus Number	Bus Name	PMax (MW)
Turner	2	307599	1TURN HY	1.5
Tuxedo	1	307601	1TUX HYD	3.2
Tuxedo	2	307601	1TUX HYD	3.2
Wateree	1	307862	1WATEREE	17.0
Wateree	2	307862	1WATEREE	17.0
Wateree	3	307862	1WATEREE	17.0
Wateree	4	307862	1WATEREE	17.0
Wateree	5	307862	1WATEREE	17.0
Wylie	1	307840	1WYLIE H	18.0
Wylie	2	307840	1WYLIE H	18.0
Wylie	3	307840	1WYLIE H	18.0
Wylie	4	307840	1WYLIE H	18.0

Appendix 3: Duke Progress East BAA

The following information provides a more granular overview of the Duke Progress East BAA input assumptions and transmission expansion plan that are incorporated in the development of the SERTP regional transmission plan.

Table A3.1: 2016 SERTP Regional Transmission Plan – Transmission Project Snapshot by operating voltage (Duke Progress East BAA)

Duke Progress East BAA	100-120 kV	121-150 kV	151-199 kV	200-299 kV	300-399 kV	400-550 kV
Transmission lines – New (Circuit Mi.)	--	--	--	38	--	--
Transmission Lines – Uprates[1] (Circuit Mi.)	18	--	--	10	--	--
Transformers[2] – New	--	--	--	1	--	--
Transformers[2] – Replacements	3	--	--	--	--	--

[1]A transmission line uprate may be the result of reconductoring and/or increasing the operating temperature/voltage along the transmission line.
[2]The voltages shown represent the operating voltages on the high side terminals of the transformer

Table A3.2: Interface commitments[1] modeled in the SERTP Summer Peak models – Duke Progress East BAA

To	2017	2019	2021	2022	2024	2026
Duke Carolinas	-1058	-1058	-1058	-1058	-1058	-1058
Duke Progress West	150	150	150	150	150	150
PJM	-24	-24	-24	-24	-24	-24
Total	-932	-932	-932	-932	-932	-932

[1]A positive number represents a net export from the Duke Progress East BAA

A detailed listing of the changes in generation assumptions within the Duke Progress East BAA throughout the ten (10) year planning horizon, including the year(s) in which they occur, is provided in Table A3.3 below. Table A3.4 provides a listing of generation assumptions based upon long-term, firm point-to-point commitments. The capacity (MW) values shown for each year reflect summer peak conditions. Table A3.5 provides a listing of all generators modeled in the 2017 Summer Peak powerflow model.

Table A3.3: Changes in Generation Assumptions Based Upon LSEs – Duke Progress East BAA

Site	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Sutton IC #1	0	0	0	0	0	0	0	0	0	0
Sutton IC #2A	0	0	0	0	0	0	0	0	0	0
Sutton IC #2B	0	0	0	0	0	0	0	0	0	0
Sutton CC #1	42	42	42	42	42	42	42	42	42	42
Sutton CC #2	42	42	42	42	42	42	42	42	42	42

Table A3.4: Generation Assumptions Based Upon Expected Long-term, Firm Point-to-Point Commitments – Duke Progress East BAA

Site	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Hamlet #1	55	55	55	55	55	55	55	55	55	55
Hamlet #2	55	55	55	55	55	55	55	55	55	55
Hamlet #3	55	55	55	55	55	55	55	55	55	55
Ingenco	6	6	6	6	6	6	6	6	6	6

Table A3.5: Generating Units Modeled in the 2017 Summer Peak Powerflow Model – Duke Progress East BAA

Plant	Unit	Bus #	Bus Name	Pmax (MW)
Anson	1	304993	1ANSON CT1	56.5
Anson	2	304994	1ANSON CT2	56.5
Anson	3	304995	1ANSON CT3	56.5
Anson	4	304996	1ANSON CT4	56.5

Plant	Unit	Bus #	Bus Name	Pmax (MW)
Anson	5	304997	1ANSON CT5	56.5
Anson	6	304998	1ANSON CT6	56.5
Blewett	1	304892	1BLEW1-3	4.0
Blewett	2	304892	1BLEW1-3	4.0
Blewett	3	304892	1BLEW1-3	4.0
Blewett	4	304893	1BLEW4-6	5.0
Blewett	5	304893	1BLEW4-6	5.0
Blewett	6	304893	1BLEW4-6	5.0
Blewett	C1	304933	1BLWIC1&2	13.0
Blewett	C2	304933	1BLWIC1&2	13.0
Blewett	C3	304934	1BLWIC3&4	13.0
Blewett	C4	304934	1BLWIC3&4	13.0
Brunswick	1	304862	1BRUNSWICK#1	948.0
Brunswick	1	304863	1BRUNSWICK#2	942.0
Craven County Gen	A	304026	3CRAVN CO GE	38.0
Craven County Wood Energy	1	304472	6CC WD EN SU	45.0
Darlington	1	304897	1DARL CO #1	52.0
Darlington	2	304898	1DARL CO #2	48.0
Darlington	3	304899	1DARL CO #3	52.0
Darlington	4	304900	1DARL CO #4	50.0
Darlington	5	304901	1DARL CO #5	52.0
Darlington	6	304902	1DARL CO #6	45.0
Darlington	7	304903	1DARL CO #7	51.0
Darlington	8	304904	1DARL CO #8	48.0
Darlington	9	304905	1DARL CO #9	52.0
Darlington	10	304906	1DARL CO #10	51.0

Plant	Unit	Bus #	Bus Name	Pmax (MW)
Darlington	11	304907	1DARL CO #11	52.0
Darlington	12	304908	1DARL CO #12	118.0
Darlington	13	304909	1DARL CO #13	116.0
Eden Solar	1	305324	1EDENSOL-GLV	48.3
Elizabethtown	1	304578	3COG E-TOWN	32.0
Elm City Solar	1	305314	1ELMCTYSOLGL	40.7
Fayetteville PWC	A	304940	1FAYPWC1	20.0
Fayetteville PWC	A	304941	1FAYPWC2	20.0
Fayetteville PWC	A	304942	1FAYPWC3	20.0
Fayetteville PWC	A	304943	1FAYPWC4	20.0
Fayetteville PWC	A	304944	1FAYPWC5	20.0
Fayetteville PWC	A	304945	1FAYPWC6	20.0
Fayetteville PWC	A	304946	1FAYPWC7	20.0
Fayetteville PWC	A	304947	1FAYPWC8	20.0
Fayetteville PWC	A	304948	1FAYPWC ST	65.0
Fayetteville Solar	1	305224	1FAYSOL-GLV	23.4
Hamlet	1	304987	1HAMLET CT1	56.5
Hamlet	2	304988	1HAMLET CT2	56.5
Hamlet	3	304989	1HAMLET CT3	56.5
Hamlet	4	304990	1HAMLET CT4	56.5
Hamlet	5	304991	1HAMLET CT5	56.5
Hamlet	6	304992	1HAMLET CT6	56.5
Harris	1	304865	1HARRIS	942.0
Harris (Dummy Gen)	D	304009	6HARRIS230 T	500.0
Industrial '#48	A	304455	6IND048	42.0
Industrial '#84	1	304641	3IND084	68.0

Plant	Unit	Bus #	Bus Name	Pmax (MW)
Kornegay	1	304605	3COG KORN SU	25.0
Lee Plant	A1	304961	1LEE CC_1A	177.0
Lee Plant	B1	304962	1LEE CC_1B	176.0
Lee Plant	C1	304963	1LEE CC_1C	179.0
Lee Plant	S1	304964	1LEE CC_S1	378.0
Lumberton	1	304603	3COG LUMB SU	32.0
Mayo	1	304873	1MAYO #1	727.0
Richmond County	1	304971	1RICH CT1	157.0
Richmond County	3	304973	1RICH CT3	155.0
Richmond County	8	304977	1RICH CT8	157.0
Richmond County	S4	304978	1RICH ST4	165.0
Richmond County	9	304979	1RICH CT9	178.0
Richmond County	10	304980	1RICH CT10	178.0
Richmond County	S5	304981	1RICH ST5	250.0
Richmond County	2	304972	1RICH CT2	156.0
Richmond County	4	304974	1RICH CT4	159.0
Richmond County	6	304975	1RICH CT6	153.0
Richmond County	7	304976	1RICH CT7	160.0
Robinson	1	304864	1ROBINSON#2	741.0
Roxboro	1	304872	1ROX #4	698.0
Roxboro	1	304869	1ROX #1	379.0
Roxboro	1	304870	1ROX #2	671.0
Roxboro	1	304871	1ROX #3	691.0
Roxboro Cogen	1	304063	6COG ROX SUB	56.0
Southport	1	304601	6COG SPRT SU	103.0
Sutton	A	304922	1SUTIC2A	24.0

Plant	Unit	Bus #	Bus Name	Pmax (MW)
Sutton	A	304923	1SUTIC2B	26.0
Sutton	A1	305911	1SUT CC 1A	179.0
Sutton	B1	305912	1SUT CC 1B	179.0
Sutton	ST	305913	1SUT CC 1C	264.0
Sutton	A	304921	1SUTIC#1	11.0
Tillery	1	304888	1TILL #1	21.0
Tillery	1	304889	1TILL #2	18.0
Tillery	1	304890	1TILL #3	21.0
Tillery	1	304891	1TILL #4	27.0
Warsaw Solar	1	305903	1WARSAWSOLGL	65.8
Wayne County	10	304956	1WAYNE CO #1	177.0
Wayne County	11	304957	1WAYNE CO #2	174.0
Wayne County	12	304958	1WAYNE CO #3	173.0
Wayne County	13	304959	1WAYNE CO #4	170.0
Wayne County	14	304960	1WAYNE CO #5	169.0
Weatherspoon	A	304924	1WSPIC#1	32.0
Weatherspoon	A	304927	1WSPIC#3	33.0
Weatherspoon	A	304925	1WSPIC#2	32.0
Weatherspoon	A	304928	1WSPIC#4	31.0

Appendix 4: Duke Progress West BAA

The following information provides a more granular overview of the Duke Progress West BAA input assumptions and transmission expansion plan that are incorporated in the development of the SERTP regional transmission plan.

Table A4.1: 2016 SERTP Regional Transmission Plan – Transmission Project Snapshot by operating voltage (Duke Progress West BAA)

Duke Progress West BAA	100-120 kV	121-150 kV	151-199 kV	200-299 kV	300-399 kV	400-550 kV
Transmission lines – New (Circuit Mi.)	2.2	--	--	--	--	--
Transmission Lines – Uprates[1] (Circuit Mi.)	2.7	--	--	--	--	--
Transformers[2] – New	--	--	--	2	--	--
Transformers[2] – Replacements	--	--	--	--	--	--

[1]A transmission line uprate may be the result of reconductoring and/or increasing the operating temperature/voltage along the transmission line.
[2]The voltages shown represent the operating voltages on the high side terminals of the transformer

Table A4.2: Interface commitments[1] modeled in the SERTP Summer Peak models – Duke Progress West BAA

To	2017	2019	2021	2022	2024	2026
Duke Progress East	-150	-150	-150	-150	-150	-150
TVA	-22	-22	-22	-22	-22	-22
Total	-172	-172	-172	-172	-172	-172

[1]A positive number represents a net export from the Duke Progress West BAA

A detailed listing of the changes in generation assumptions within the Duke Progress West BAA throughout the ten (10) year planning horizon, including the year(s) in which they occur, is provided in Table A4.3 below. Table A4.4 provides a listing of generation assumptions based upon long-term, firm point-to-point commitments. The capacity (MW) values shown for each year reflect summer peak conditions. Table A4.5 provides a listing of all generators modeled in the 2017 Summer Peak powerflow model.

Table A4.3: Changes in Generation Assumptions Based Upon LSEs – Duke Progress West BAA

Site	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
None										

Table A4.4: Generation Assumptions Based Upon Expected Long-term, Firm Point-to-Point Commitments – Duke Progress West BAA

Site	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
None										

Table A4.5: Generating Units Modeled in the 2017 Summer Peak Powerflow Model – Duke Progress West BAA

Plant	Unit	Bus #	Bus Name	Pmax (MW)
Asheville	1	304851	1ASHVL #1	191.0
Asheville	1	304852	1ASHVL #2	185.0
Asheville	A	304858	1ASH CT#1	164.0
Asheville	A	304859	1ASH CT#2	160.0
Marshall	1	304856	1MARSH1&2	2.0
Marshall	2	304856	1MARSH1&2	2.0
Walters	1	304853	1WALT #1	36.0
Walters	1	304854	1WALT #2	40.0
Walters	1	304855	1WALT #3	36.0

Appendix 5: LG&E/KU BAA

The following information provides a more granular overview of the LG&E/KU BAA input assumptions and transmission expansion plan that are incorporated in the development of the SERTP regional transmission plan.

Table A5.1: 2016 SERTP Regional Transmission Plan – Transmission Project Snapshot by operating voltage (LG&E/KU BAA)

LG&E/KU BAA	100-120 kV	121-150 kV	151-199 kV	200-299 kV	300-399 kV	400-550 kV
Transmission lines – New (Circuit Mi.)	--	1.3	--	--	--	--
Transmission Lines – Uprates[1] (Circuit Mi.)	--	14.1	--	--	--	--
Transformers[2] – New	--	--	--	--	--	--
Transformers[2] – Replacements	--	--	--	--	--	--

[1]A transmission line uprate may be the result of reconductoring and/or increasing the operating temperature/voltage along the transmission line.
[2]The voltages shown represent the operating voltages on the high side terminals of the transformer

Table A5.2: Interface commitments[1] modeled in the SERTP Summer Peak models – LG&E/KU BAA

To	2017	2019	2021	2022	2024	2026
PJM	94	94	94	94	94	94
OVEC	-163	-163	-163	-163	-163	-163
MISO	81	81	80	80	80	80
Owensboro Municipal	-7	-7	-7	-7	-7	-7
TVA	-3	-3	-3	-3	-3	-3
Total	2	2	1	1	1	1

[1]A positive number represents a net export from the LG&E/KU BAA

A detailed listing of the changes in generation assumptions within the LG&E/KU BAA throughout the ten (10) year planning horizon, including the year(s) in which they occur, is provided in Table A5.3 below. Furthermore, supplemental information regarding noteworthy generation expansion and retirements/decertifications included in the 2016 series set of SERTP powerflow models is provided below while Table A5.4 provides a listing of generation assumptions based upon long-term, firm point-to-point commitments. The capacity (MW) values shown for each year reflect summer peak conditions. Table A5.5 provides a listing of all generators modeled in the 2017 Summer Peak powerflow model.

Table A5.3: Changes in Generation Assumptions Based Upon LSEs – LG&E/KU BAA

Site	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
No changes in generation assumptions throughout the planning horizon										

Table A5.4: Generation Assumptions Based Upon Expected Long-term, Firm Point-to-Point Commitments – LG&E/KU BAA

Site	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Trimble County	324	324	324	324	324	324	324	324	324	324

Table A5.5: Generating Units Modeled in the 2016 Summer Peak Powerflow Model – LG&E/KU BAA

Plant	Unit	Bus #	Bus Name	Pmax (MW)
Brown	1	324000	1BROWN 1	117.0
Brown	2	324001	1BROWN 2	179.0
Brown	3	324002	1BROWN 3	447.0
Brown	5	324003	1BROWN 5	131.0
Brown	6	324004	1BROWN 6	147.0
Brown	7	324005	1BROWN 7	147.0
Brown	8	324006	1BROWN 8	122.0
Brown	9	324007	1BROWN 9	122.0
Brown	10	324008	1BROWN10	122.0
Brown	11	324009	1BROWN11	122.0

Plant	Unit	Bus #	Bus Name	Pmax (MW)
Buckner (Bluegrass)	1	324044	1BUCK 1	169.0
Buckner (Bluegrass)	2	324045	1BUCK 2	169.0
Buckner (Bluegrass)	3	324046	1BUCK 3	169.0
Cane Run	11	324013	1CR 11	14.0
Cane Run	7C	325095	1CANE RUN 7C	228.0
Cane Run 7	7A	325093	1CANE RUN 7A	216.0
Cane Run 7	7B	325094	1CANE RUN 7B	216.0
Dix Dam	1	324014	1DIXD 1	10.5
Dix Dam	2	324015	1DIXD 2	10.5
Dix Dam	3	324016	1DIXD 3	10.5
Ghent	1	324017	1GHNT 1	520.0
Ghent	2	324018	1GHNT 2	530.0
Ghent	3	324019	1GHNT 3	516.0
Ghent	4	324020	1GHNT 4	511.0
Haefling	1	324023	1HAEFLN	12.0
Haefling	2	324023	1HAEFLN	12.0
KMPAPAD	1	324933	1KMPAPAD1	58.0
KMPAPAD	2	324697	1KMPAPAD2	58.0
LOCK 7	1	324052	1LOCK 7	2.0
Mill Creek	1	324024	1MILC 1	339.0
Mill Creek	2	324025	1MILC 2	336.0
Mill Creek	3	324026	1MILC 3	434.0
Mill Creek	4	324027	1MILC 4	527.0
Ohio Falls	1	324028	1OH FAL	8.0
Ohio Falls	2	324028	1OH FAL	8.0
Ohio Falls	3	324028	1OH FAL	8.0
Ohio Falls	4	324028	1OH FAL	8.0
Ohio Falls	5	324028	1OH FAL	8.0
Ohio Falls	6	324028	1OH FAL	8.0
Ohio Falls	7	324028	1OH FAL	8.0

Plant	Unit	Bus #	Bus Name	Pmax (MW)
Ohio Falls	8	324028	1OH FAL	8.0
Paddys Run	11	326514	1PADR 11	12.0
Paddys Run	12	326515	1PADR 12	23.0
Paddys Run	13	324031	1PADR 13	149.0
Trimble County	1	324034	1TRIM 1	549.0
Trimble County	2	324035	1TRIM 2	782.0
Trimble County	5	324036	1TRIM 5	158.0
Trimble County	6	324037	1TRIM 6	158.0
Trimble County	7	324038	1TRIM 7	158.0
Trimble County	8	324039	1TRIM 8	158.0
Trimble County	9	324040	1TRIM 9	158.0
Trimble County	10	324041	1TRIM10	158.0
Zorn	1	324043	2ZORN	14.0

Appendix 6: OVEC BAA

The following information provides a more granular overview of the OVEC BAA input assumptions and transmission expansion plan that are incorporated in the development of the SERTP regional transmission plan.

Table A6.1: 2016 SERTP Regional Transmission Plan – Transmission Project Snapshot by operating voltage (OVEC BAA)

OVEC BAA	100-120 kV	121-150 kV	151-199 kV	200-299 kV	300-399 kV	400-550 kV
Transmission lines – New (Circuit Mi.)	--	--	--	--	--	--
Transmission Lines – Uprates[1] (Circuit Mi.)	--	--	--	--	--	--
Transformers[2] – New	--	--	--	--	--	--
Transformers[2] – Replacements	--	--	--	--	--	--

[1]A transmission line uprate may be the result of reconductoring and/or increasing the operating temperature/voltage along the transmission line.
[2]The voltages shown represent the operating voltages on the high side terminals of the transformer

Table A6.2: Interface commitments[1] modeled in the SERTP Summer Peak models – OVEC BAA

To	2016	2018	2020	2021	2023	2025
PJM	1807	1807	1807	1807	1807	1807
MISO	30	30	30	30	30	30
LG&E/KU	163	163	163	163	163	163
Total	2000	2000	2000	2000	2000	2000

[1]A positive number represents a net export from the OVEC BAA

A detailed listing of the changes in generation assumptions within the OVEC BAA throughout the ten (10) year planning horizon, including the year(s) in which they occur, is provided in Table A6.3 below. Table A6.4 provides a listing of generation assumptions based upon long-term, firm point-to-point commitments. The capacity (MW) values shown for each year reflect summer peak conditions. Table A6.5 provides a listing of all generators modeled in the 2016 Summer Peak powerflow model.

Table A6.3: Changes in Generation Assumptions Based Upon LSEs – OVEC BAA

Site	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
No changes in generation assumptions throughout the planning horizon										

Table A6.4: Generation Assumptions Based Upon Expected Long-term, Firm Point-to-Point Commitments – OVEC BAA

Site	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
None										

Table A6.5: Generating Units Modeled in the 2016 Summer Peak Powerflow Model – OVEC BAA

Plant	Unit	Bus #	Bus Name	Pmax (MW)
Clifty Creek	1	248000	06CLIFTY	198.0
Clifty Creek	2	248000	06CLIFTY	198.0
Clifty Creek	3	248000	06CLIFTY	198.0
Clifty Creek	4	248000	06CLIFTY	198.0
Clifty Creek	5	248000	06CLIFTY	198.0
Clifty Creek	6	248000	06CLIFTY	198.0
Kyger Creek	1	248005	06KYGER	197.0
Kyger Creek	2	248005	06KYGER	196.0
Kyger Creek	3	248005	06KYGER	196.0
Kyger Creek	4	248005	06KYGER	196.0
Kyger Creek	5	248005	06KYGER	196.0

Appendix 7: PowerSouth BAA

The following information provides a more granular overview of the PowerSouth BAA input assumptions and transmission expansion plan that are incorporated in the development of the SERTP regional transmission plan.

Table A7.1: 2016 SERTP Regional Transmission Plan – Transmission Project Snapshot by operating voltage (PowerSouth BAA)

PowerSouth BAA	100-120 kV	121-150 kV	151-199 kV	200-299 kV	300-399 kV	400-550 kV
Transmission lines – New (Circuit Mi.)	39.0	--	--	--	--	--
Transmission Lines – Uprates[1] (Circuit Mi.)	36.5	--	--	--	--	--
Transformers[2] – New	--	--	--	--	--	--
Transformers[2] – Replacements	--	--	--	--	--	--

[1]A transmission line uprate may be the result of reconductoring and/or increasing the operating temperature/voltage along the transmission line.
[2]The voltages shown represent the operating voltages on the high side terminals of the transformer

Table A7.2: Interface commitments[1] modeled in the SERTP Summer Peak models – PowerSouth BAA

To	2017	2019	2021	2022	2024	2026
Southern	503	459	412	423	454	481
Total	503	459	412	423	454	481

[1]A positive number represents a net export from the PowerSouth BAA

A detailed listing of the changes in generation assumptions within the PowerSouth BAA throughout the ten (10) year planning horizon, including the year(s) in which they occur, is provided in Table A7.3 below. Table A7.4 provides a listing of generation assumptions based upon long-term, firm point-to-point commitments. The capacity (MW) values shown for each year reflect summer peak conditions. Table A7.5 provides a listing of all generators modeled in the 2017 Summer Peak powerflow model.

Table A7.3: Changes in Generation Assumptions Based Upon LSEs – PowerSouth BAA

Site	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
None										

Table A7.4: Generation Assumptions Based Upon Expected Long-term, Firm Point-to-Point Commitments – PowerSouth BAA

Site	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
None										

Table A7.5: Generating Units Modeled in the 2017 Summer Peak Powerflow Model – PowerSouth BAA

Plant	Unit	Bus #	Bus Name	Pmax (MW)
Lowman	1	317711	1LOWMAN1G	78.0
Lowman	2	317712	1LOWMAN2G	235.0
Lowman	3	317713	1LOWMAN3G	238.0
McIntosh	1	317721	1MCNTSH1G	110.0
McIntosh	2	317722	1MCNTSH2G	114.0
McIntosh	3	317723	1MCNTSH3G	114.0
McIntosh	4	317754	1MCNTSH4G	175.0
McIntosh	5	317755	1MCNTSH5G	175.0
McWilliams	1	317731	1MCWLMS1G	9.0
McWilliams	2	317732	1MCWLMS2G	9.0
McWilliams	3	317733	1MCWLMS3G	21.0
McWilliams	4	317734	1MCWLMS4G	103.0
Point A	H	317071	1POINTA_HYD	8.0
Vann	1	317701	1VANN 1G	164.0
Vann	2	317702	1VANN 2G	164.0
Vann	3	317703	1VANN 3G	174.0

Appendix 8: Southern BAA

The following information provides a more granular overview of the Southern BAA input assumptions and transmission expansion plan that are incorporated in the development of the SERTP regional transmission plan.

Table 8.1: 2016 SERTP Regional Transmission Plan – Transmission Project Snapshot by operating voltage (Southern BAA)

Southern BAA	100-120 kV	121-150 kV	151-199 kV	200-299 kV	300-399 kV	400-550 kV
Transmission lines – New (Circuit Mi.)	131.0	--	1.0	48.3	--	55.0
Transmission Lines – Uprates[1] (Circuit Mi.)	612.3	--	57.0	71.8	--	--
Transformers[2] – New	--	--	--	5	--	1
Transformers[2] – Replacements	--	--	--	4	--	--

[1]A transmission line uprate may be the result of reconductoring and/or increasing the operating temperature/voltage along the transmission line.
[2]The voltages shown represent the operating voltages on the high side terminals of the transformer

Table 8.2: Interface commitments[1] modeled in the SERTP Summer Peak models – Southern BAA

To	2017	2019	2021	2022	2024	2026
Duke Carolinas	70	70	70	70	70	70
SCE&G	0	0	0	0	0	0
SCPSA	-50	-50	-50	-50	-50	-50
TVA	-60	-64	-66	-67	-69	-71
SEPA	-681	-681	-681	-681	-681	-681
MISO	44	-58	-61	-63	-65	-69
PowerSouth	-503	-459	-412	-424	-454	-481
Florida	1299	1402	1505	1505	1505	1505
Total	119	160	305	290	256	273

[1]A positive number represents a net export from the Southern BAA

A detailed listing of the changes in generation assumptions within the Southern BAA throughout the ten (10) year planning horizon, including the year(s) in which they occur, is provided in Tables A8.3 through A8.6 below. Furthermore, supplemental information regarding noteworthy generation expansion and retirements/decertifications included in the 2016 series set of SERTP powerflow models is provided below, while Table A8.7 provides a listing of generation assumptions based upon long-term, firm point-to-point commitments. The capacity (MW) values shown for each year reflect summer peak conditions. Table A8.8 provides a listing of all generators modeled in the 2017 Summer Peak powerflow model.

Table A8.3: Changes in Generation Assumptions Based Upon LSEs – Southern Company

Site	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Marine Corp Solar	30	30	30	30	30	30	30	30	30	30
Albany Biomass	50	50	50	50	50	50	50	50	50	50
Eglin Solar	30	30	30	30	30	30	30	30	30	30
Kings Bay Solar	30	30	30	30	30	30	30	30	30	30
East Bay Solar	40	40	40	40	40	40	40	40	40	40
Holley Solar	40	40	40	40	40	40	40	40	40	40
Saufley Solar	50	50	50	50	50	50	50	50	50	50
Live Oak Solar	51	51	51	51	51	51	51	51	51	51
Mobley Solar	77	77	77	77	77	77	77	77	77	77
White Pine Solar	102	102	102	102	102	102	102	102	102	102
Hattiesburg Industrial Solar	50	50	50	50	50	50	50	50	50	50
Fort Rucker Solar	11	11	11	11	11	11	11	11	11	11
Anniston Army Depot	8	8	8	8	8	8	8	8	8	8
GRP Franklin	58	58	58	58	58	58	58	58	58	58
GRP Madison	58	58	58	58	58	58	58	58	58	58
Sumrall Solar	52	52	52	52	52	52	52	52	52	52
Origis Solar	52	52	52	52	52	52	52	52	52	52
Barry 6	550	550	550	550	550	550	550	550	550	550
Barry 7	550	550	550	550	550	550	550	550	550	550
Wansley 6	0	0	0	0	0	0	0	0	0	0

Site	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Harris 2	649	649	0	0	0	0	0	0	0	0
Piedmont Bio	55	55	55	55	55	55	55	55	55	55
Richland Creek	11	11	11	11	11	11	11	11	11	11
Pine Ridge	7	7	7	7	7	7	7	7	7	7
Flint River	20	20	20	20	20	20	20	20	20	20
Rincon Solar	16	16	16	16	16	16	16	16	16	16
Port Wentworth	15	15	15	15	15	15	15	15	15	15
Walton County	447	447	465	465	465	465	465	0	0	0
Vogtle 3	0	0	504	504	504	504	504	504	504	504
Vogtle 4	0	0	0	504	504	504	504	504	504	504
Calhoun 1-4	632	632	632	632	632	632	0	0	0	0
Central Alabama	885	885	885	885	885	885	0	0	0	0
Yates[1]	0	0	0	0	0	0	0	940	940	940
Monroe	310	310	310	310	310	310	310	0	--	--
North Escambia[1]	0	0	0	0	0	0	460	460	460	460
Smith[1]	0	0	0	0	0	0	460	460	460	460
Tiger Creek	310	310	310	310	310	310	310	0	--	--
Branch[1]	0	0	0	0	0	0	0	940	1400	1400

[1]This assumption may be modified as resource decisions are made by the corresponding LSEs pursuant to applicable regulatory processes.

Table A8.4: Changes in Generation Assumptions Based Upon LSEs – GTC

Site	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Hazlehurst Solar	70	70	70	70	70	70	70	70	70	70
Lindsay Hill	300	300	300	300	300	300	300	300	300	300
Franklin 2	625	625	625	625	625	625	625	625	625	625
Tiger Creek	309	309	309	309	309	309	309	309	309	309
Dahlberg	375	375	375	375	375	375	375	375	375	375
Hillabee	123	123	123	123	123	123	123	123	123	123
T.A. Smith I	647	647	647	647	647	647	647	647	647	647
T.A. Smith II	647	647	647	647	647	647	647	647	647	647

Taylor Solar	143	143	143	143	143	143	143	143	143	143
Wansley 6	561	561	561	561	561	561	561	561	561	561
Vogtle 3	0	0	330	330	330	330	330	330	330	330
Vogtle 4	0	0	0	330	330	330	330	330	330	330
Scherer 3	132	132	132	56	56	56	56	56	56	56

Table A8.5: Changes in Generation Assumptions Based Upon LSEs – MEAG

Site	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Vogtle 3	0	0	250	250	250	250	250	250	250	250
Vogtle 4	0	0	0	250	250	250	250	250	250	250

Table A8.6: Changes in Generation Assumptions Based Upon LSEs – Dalton

Site	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Vogtle 3	0	0	16	16	16	16	16	16	16	16
Vogtle 4	0	0	0	16	16	16	16	16	16	16

Noteworthy Generation Retirements/Decertifications

- Georgia Power has decertified or announced plans to decertify the following generating units:
  - Mitchell Unit 3, 4A, and 4B in 2016
  - Kraft Unit 1 CT in 2016
- Mississippi retired Sweatt Units 1 and 2 in 2016.

Table A8.7: Generation Assumptions Based Upon Expected Long-term, Firm Point-to-Point Commitments – Southern BAA

Site	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Vogtle	206	206	206	206	206	206	206	206	206	206
Lindsay Hill	300	300	300	300	300	300	300	300	300	300

Site	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Hammond	10	10	10	10	10	10	10	10	10	10
Hillabee	350	350	350	350	350	350	350	350	350	350
Franklin	424	424	424	424	424	424	424	424	424	424
Bowen	159	159	159	159	159	159	159	159	159	159
Scherer	911	911	911	911	911	911	911	911	911	911
Dahlberg	494	494	494	494	494	494	494	494	494	494

Table 8.8: Generating Units Modeled in the 2017 Summer Peak Powerflow Model – Southern BAA

Plant	Unit	Bus #	Bus Name	Pmax (MW)
Addison	1	383901	1ADDISON 1	151.7
Addison	2	383902	1ADDISON 2	148.6
Addison	3	383903	1ADDISON 3	150.0
Addison	4	383904	1ADDISON 4	144.4
Alb Green	1	383480	1ALB GRN NRG	45.0
Allatoona Dam	1	383506	1ALLA DAM	72.0
AMEA Sylacauga	1	386036	1AMEA CT1	47.5
AMEA Sylacauga	2	386037	1AMEA CT2	47.5
Anad Solar	S1	386035	3ANAD SLR	11.0
Baconton	1	383791	1SOWEGA 1	49.3
Baconton	4	383803	1SOWEGA 4	49.0
Baconton	5	383804	1SOWEGA 5	49.0
Baconton	6	383805	1SOWEGA 6	48.0
Bankhead Dam	1	384357	1BANK GEN	52.0
Barry	1	386471	1BARRY 1	138.0

Plant	Unit	Bus #	Bus Name	Pmax (MW)
Barry	2	386472	1BARRY 2	137.0
Barry	4	386474	1BARRY 4	362.0
Barry	5	386475	1BARRY 5	785.0
Barry	6	386476	1BARRY 6ST	210.0
Barry	6A	386477	1BARRY 6A	171.0
Barry	6B	386478	1BARRY 6B	171.0
Barry	7	386479	1BARRY 7ST	198.6
Barry	7A	386480	1BARRY 7A	171.0
Barry	7B	386481	1BARRY 7B	171.0
Bartletts Ferry Dam	1	383514	1BARTLFY1	15.2
Bartletts Ferry Dam	2	383515	1BARTLFY2	15.2
Bartletts Ferry Dam	3	383516	1BARTLFY3	15.2
Bartletts Ferry Dam	4	383517	1BARTLFY4	20.3
Bartletts Ferry Dam	5	383518	1BARTLFY6	54.7
Bartletts Ferry Dam	6	383518	1BARTLFY6	54.7
Bay County	A	385413	1BAY CNTY 13	12.0
Bouldin Dam	1	386581	1BOULD1GN	75.3
Bouldin Dam	2	386582	1BOULD2GN	75.3
Bouldin Dam	3	386583	1BOULD3GN	75.3
Boulevard	1	389017	1BLVD1	14.0
Bowen	1	383841	1BOWEN 1	740.5
Bowen	2	383842	1BOWEN 2	740.5
Bowen	3	383843	1BOWEN 3	912.5
Bowen	4	383844	1BOWEN 4	912.5
Buford Dam	1	383509	1BUF DAM 1+3	60.1
Buford Dam	3	383509	1BUF DAM 1+3	6.8

Plant	Unit	Bus #	Bus Name	Pmax (MW)
Buford Dam	2	383510	1BUF DAM 2	60.1
Bulter Solar	S1	383406	1BUTLER SLR	100.0
Calhoun	4	383680	1CALHOUN GEN	20.0
Calhoun	1	386061	1CALHOUNCT1	158.0
Calhoun	2	386062	1CALHOUNCT2	158.0
Calhoun	3	386063	1CALHOUNCT3	158.0
Calhoun	4	386064	1CALHOUNCT4	158.0
Camilla Solar	S1	383425	6CAMILLA SLR	16.0
Carters Dam	1	383502	1CARTERSDAM1	148.0
Carters Dam	2	383503	1CARTERSDAM2	148.0
Carters Dam	3	383504	1CARTERSDAM3	148.0
Carters Dam	4	383505	1CARTERSDAM4	148.0
Central Alabama	2	386427	1CENTAL 2ST	393.0
Central Alabama	2A	386428	1CENTAL 2A	164.0
Central Alabama	2B	386429	1CENTAL 2B	164.0
Central Alabama	2C	386430	1CENTAL 2C	164.0
Champion	A	385410	1CHAMPION13	25.0
Chattahoochee Energy	1	383632	1CHAT EN 1ST	167.0
Chattahoochee Energy	1A	383633	1CHAT EN 1A	151.0
Chattahoochee Energy	1B	383634	1CHAT EN 1B	151.0
Chevron	1	386831	1CHEVRON1	15.0
Chevron	2	386832	1CHEVRON2	15.0
Chevron	3	386833	1CHEVRON3	16.0
Chevron	4	386834	1CHEVRON4	16.0
Chevron	5	386835	1CHEVRON5	70.0
Crisp Co. Dam	1	383541	1CRISPCO1	23.0

Plant	Unit	Bus #	Bus Name	Pmax (MW)
Crist	4	386704	1CRIST 4	79.0
Crist	5	386705	1CRIST 5	79.0
Crist	6	386706	1CRIST 6	310.0
Crist	7	386707	1CRIST 7	504.0
Dahlberg	1	383661	1DAHLBERG 1	75.0
Dahlberg	2	383662	1DAHLBERG 2	75.0
Dahlberg	3	383663	1DAHLBERG 3	75.0
Dahlberg	4	383664	1DAHLBERG 4	75.0
Dahlberg	5	383665	1DAHLBERG 5	75.0
Dahlberg	6	383666	1DAHLBERG 6	75.0
Dahlberg	7	383667	1DAHLBERG 7	75.0
Dahlberg	8	383668	1DAHLBERG 8	75.0
Dahlberg	9	383669	1DAHLBERG 9	75.0
Dahlberg	10	383670	1DAHLBERG 10	75.0
Daniel	1	386871	1DANIEL 1	520.0
Daniel	2	386872	1DANIEL 2	520.0
Daniel	3	386873	1DANIEL 3ST	191.6
Daniel	3A	386874	1DANIEL 3A	163.8
Daniel	3B	386875	1DANIEL 3B	163.8
Daniel	4	386876	1DANIEL 4ST	198.6
Daniel	4A	386877	1DANIEL 4A	175.0
Daniel	4B	386878	1DANIEL 4B	175.0
Decatur Solar	S1	383401	1DECATUR SLR	81.8
Doyle	1	383871	1DOYLE 1	61.0
Doyle	2	383872	1DOYLE 2	62.0
Doyle	3	383873	1DOYLE 3	58.6

Plant	Unit	Bus #	Bus Name	Pmax (MW)
Doyle	4	383874	1DOYLE 4	75.0
Doyle	5	383875	1DOYLE 5	75.0
Dublin Biomass 1	1	383787	1DUBLIN B1	40.0
Dublin Biomass 2	1	383788	1DUBLIN B2	37.1
Effingham	1	383867	1EFFHAM 1ST	182.0
Effingham	1A	383868	1EFFHAM 1A	159.0
Effingham	1B	383869	1EFFHAM 1B	159.0
Farley	1	386461	1FARLEY 1	896.0
Farley	2	386462	1FARLEY 2	905.0
Flint Biomass	1	383786	1FLINT BIO	42.0
Flint Biomass	2	383786	1FLINT BIO	38.3
Flint River Dam	1	383538	1FLINT HYDRO	6.5
Franklin	1	383671	1FRANKLIN1ST	209.0
Franklin	1A	383672	1FRANKLIN 1A	174.0
Franklin	1B	383673	1FRANKLIN 1B	174.0
Franklin	2	383674	1FRANKLIN2ST	275.0
Franklin	2A	383675	1FRANKLIN 2A	175.0
Franklin	2B	383676	1FRANKLIN 2B	175.0
Franklin	3	383677	1FRANKLIN3ST	276.0
Franklin	3A	383678	1FRANKLIN 3A	172.0
Franklin	3B	383679	1FRANKLIN 3B	172.0
Ft Benning Solar	S1	383411	3BENNING SLR	30.0
Gadsden	1	386421	1GADSDEN1	64.0
Gadsden	2	386422	1GADSDEN2	66.0
Gaston	1	386411	1GASTON 1	127.0
Gaston	1L	386411	1GASTON 1	127.0

Plant	Unit	Bus #	Bus Name	Pmax (MW)
Gaston	2	386412	1GASTON 2	129.5
Gaston	2L	386412	1GASTON 2	129.5
Gaston	3	386413	1GASTON 3	130.0
Gaston	3L	386413	1GASTON 3	130.0
Gaston	4	386414	1GASTON 4	128.0
Gaston	4L	386414	1GASTON 4	128.0
Gaston	5	386415	1GASTON 5	872.0
Gaston	A	386416	1GASTON A	16.0
GE Plastic	1	386083	1LOWDN CO1	13.0
GE Plastic	1A	386084	1LOWDN CO2	79.0
George Dam	1	383539	1GEORGE 1-2	84.6
George Dam	3	383540	1GEORGE 3-4	79.6
Georgia SNF Solar	S1	383421	1GA SNF1 SLR	100.0
Goat Rock Dam	3	383520	1GOATROCK	5.0
Goat Rock Dam	4	383520	1GOATROCK	5.0
Goat Rock Dam	7	383520	1GOATROCK	9.3
Goat Rock Dam	8	383520	1GOATROCK	9.3
Goat Rock Dam	5	383521	1GOATRK 56	5.0
Goat Rock Dam	6	383521	1GOATRK 56	5.0
Gordon Solar	S1	383412	1GORDON SLR	30.0
Gorgas	8	386408	1GORGAS 8	165.8
Gorgas	9	386409	1GORGAS 9	175.2
Gorgas	10	386410	1GORGAS10	721.2
Greene County	1	386441	1GREENE CO 1	262.0
Greene County	2	386442	1GREENE CO 2	255.0
Greene County	A	386450	1GREENCOA	84.0

Plant	Unit	Bus #	Bus Name	Pmax (MW)
Greene County	B	386451	1GREENCOB	82.0
Greene County	C	386452	1GREENCOC	81.0
Greene County	D	386453	1GREENCOD	82.0
Greene County	E	386454	1GREENCOE	81.0
Greene County	F	386455	1GREENCOF	80.0
Greene County	G	386456	1GREENCOG	83.0
Greene County	H	386457	1GREENCOH	82.0
Greene County	I	386458	1GREENCOI	85.0
Hammond	1	383651	1HAMMOND 1	111.9
Hammond	2	383652	1HAMMOND 2	111.9
Hammond	3	383653	1HAMMOND 3	111.9
Hammond	4	383654	1HAMMOND 4	532.3
Harris	1	386491	1HARRIS 1ST	288.2
Harris	1A	386492	1HARRIS 1A	175.0
Harris	1B	386493	1HARRIS 1B	175.0
Harris	2	386494	1HARRIS 2ST	285.6
Harris	2A	386495	1HARRIS 2A	175.0
Harris	2B	386496	1HARRIS 2B	175.0
Harris Dam	1	386531	1HARISGEN	62.0
Harris Dam	2	386531	1HARISGEN	62.0
Hatch	1	383811	1HATCH 1	880.1
Hatch	2	383812	1HATCH 2	889.7
Hattiesburg Solar	S1	386888	1HATTISB SLR	50.8
Hawk Road	1	383927	1HAWK RD 1	152.8
Hawk Road	2	383928	1HAWK RD 2	151.6
Hawk Road	3	383929	1HAWK RD 3	152.8

Plant	Unit	Bus #	Bus Name	Pmax (MW)
Hazlehurst Solar	S1	383427	1HAZLEH2 SLR	52.5
Hazlehurst Solar	S1	383428	3HAZLE 1 SLR	20.0
Henry Dam	1	386501	1HENRYGEN	62.0
Hillabee	1	386437	1HILL ST1	300.0
Hillabee	1A	386438	1HILLCT1A	250.0
Hillabee	1B	386439	1HILLCT1B	250.0
Hog Bayou	1	386089	1HOGBAYOU 1	75.0
Hog Bayou	1A	386090	1HOGBAYOU1A	150.0
Holt Dam	1	384355	1HOLT GEN	45.0
Jordan Dam	1	386561	1JORD1GEN	56.0
Jordan Dam	3	386563	1JORD3GEN	56.0
Kingsbay Solar	S1	383414	1KNGSBAY SLR	30.0
Kraft	1	389010	1KRAFTCT	17.0
Lancaster	1	383780	1LANCSRT CT	17.0
Lansing Smith	A	386780	1LSMITH A	32.0
Lansing Smith	3	386783	1LSMITH 3ST	224.0
Lansing Smith	3A	386784	1LSMITH 3A	166.0
Lansing Smith	3B	386785	1LSMITH 3B	166.0
Lay Dam	1	386541	1LAY1-3GN	87.0
Lay Dam	4	386544	1LAY4-6GN	87.0
Lee Road	1	383905	1LEE RD 1	50.0
Lee Road	2	383906	1LEE RD 2	50.0
LG&E Monroe	1	383862	1LGEMONROE1	154.1
LG&E Monroe	2	383863	1LGEMONROE2	151.6
LG&E Monroe	3	383864	1LGEMONROE3	154.5
Lindsay Hill	1	386423	1LHILL 1ST	361.0

Plant	Unit	Bus #	Bus Name	Pmax (MW)
Lindsay Hill	1A	386424	1LHILL 1A	163.0
Lindsay Hill	1B	386425	1LHILL 1B	163.0
Lindsay Hill	1C	386426	1LHILL 1C	163.0
LIVEOAK SOLAR	S1	383403	1LIVEOAK SLR	51.0
Lloyd Shoals Dam	1	383501	1LLOYD SHL	19.6
Logan Martin Dam	1	386521	1LMARTGEN	120.0
Martin Dam	1	386551	1MART1GEN	45.2
Martin Dam	2	386552	1MART2GEN	40.3
Martin Dam	3	386553	1MART3GEN	39.3
Martin Dam	4	386554	1MART4GEN	54.1
McDonough	3B	383600	1MCDON 3B	40.0
McDonough	4	383878	1MCDON 4ST	312.0
McDonough	4A	383879	1MCDON 4A	250.0
McDonough	4B	383880	1MCDON 4B	250.0
McDonough	6	383883	1MCDON 6ST	341.0
McDonough	6A	383884	1MCDON 6A	240.0
McDonough	6B	383885	1MCDON 6B	240.0
McDonough	3A	383886	1MCDON 3A	40.0
McDonough	5	383961	1MCDON 5ST	332.0
McDonough	5A	383962	1MCDON 5A	240.0
McDonough	5B	383963	1MCDON 5B	240.0
McIntosh	1	389002	1MCINTOSH	135.5
McIntosh	1	389122	1MCINCT-1	82.2
McIntosh	2	389123	1MCINCT-2	82.2
McIntosh	3	389124	1MCINCT-3	82.2
McIntosh	4	389125	1MCINCT-4	82.2

Plant	Unit	Bus #	Bus Name	Pmax (MW)
McIntosh	5	389126	1MCINCT-5	82.2
McIntosh	6	389127	1MCINCT-6	82.2
McIntosh	7	389128	1MCINCT-7	82.2
McIntosh	8	389129	1MCINCT-8	82.2
McIntosh	10	389131	1MCINT 10ST	278.5
McIntosh	1A	389132	1MCINT 10A	175.0
McIntosh	1B	389133	1MCINT 10B	175.0
McIntosh	11	389134	1MCINT 11ST	278.3
McIntosh	1A	389135	1MCINT 11A	175.0
McIntosh	1B	389136	1MCINT 11B	175.0
Mclb Solar	S1	383415	1MCLB SOLAR	30.3
McManus	4A	383821	1MCMANUS 4A	46.0
McManus	4B	383822	1MCMANUS 4B	46.0
McManus	4C	383823	1MCMANUS 4C	46.0
McManus	4D	383824	1MCMANUS 4D	46.0
McManus	4E	383825	1MCMANUS 4E	46.0
McManus	4F	383826	1MCMANUS 4F	46.0
McManus	3A	383833	1MCMANUS 3A	46.0
McManus	3B	383834	1MCMANUS 3B	46.0
McManus	3C	383835	1MCMANUS 3C	46.0
Mid Georgia	1	383711	1MID GA 1ST	96.0
Mid Georgia	1A	383712	1MID GA 1A	102.0
Mid Georgia	1B	383713	1MID GA 1B	102.0
Miller	1	386401	1MILLER 1	697.9
Miller	2	386402	1MILLER 2	704.0
Miller	3	386403	1MILLER 3	695.0

Plant	Unit	Bus #	Bus Name	Pmax (MW)
Miller	4	386404	1MILLER 4	707.0
Millers Ferry Dam	1	385402	1MILERSFY1	30.0
Millers Ferry Dam	2	385403	1MILERSFY2	30.0
Millers Ferry Dam	3	385404	1MILERSFY3	30.0
Mitchell	3	383773	1MITCHELL 3	155.0
Mitchell	A	383781	1MITCHELL 4A	31.0
Mitchell	B	383782	1MITCHELL 4B	31.0
Mitchell Dam	4	386574	1MITC4GEN	17.9
Mitchell Dam	5	386575	1MITC5GEN	44.7
Mitchell Dam	6	386575	1MITC5GEN	44.7
Mitchell Dam	7	386575	1MITC5GEN	44.7
Monroe Power	1	383860	1MONROEPWR 1	160.0
Monroe Power	2	383861	1MONROEPWR 2	160.0
Monsanto	A	385411	1MONSANTO13	86.0
Morgan Falls Dam	1	383500	1MORGAN F	10.6
Mossy Creek Solar	S1	383410	1MOSSYCK SLR	82.0
MS Bainbridge	1	383890	1MSBAINBR	78.0
North Highlands Dam	1	383525	1N HIGHLAND	34.4
Old Midville Solar	S1	383402	3OLD MIDVIL	20.0
Oliver Dam	1	383522	1OLIVER 1	17.7
Oliver Dam	2	383523	1OLIVER 2	17.7
Oliver Dam	3	383524	1OLIVER 3-4	17.7
Oliver Dam	4	383524	1OLIVER 3-4	6.1
OPC Hartwell	1	383881	1OPCHWE 1	150.0
OPC Hartwell	2	383882	1OPCHWE 2	149.0
Origis Solar	S1	386887	1ORIGIS SLR	52.0

Plant	Unit	Bus #	Bus Name	Pmax (MW)
Paw Paw Solar	S1	383407	6PAW PAW SLR	30.0
Pea Ridge	1	387126	1PEA RIDG	12.0
Piedmont	1	383777	1PIEDMNT BIO	53.6
Pine Ridge	1	383497	1PINE RIDGE	8.4
Rabun Gap	1	383775	1RABUN BIO	18.0
Ratcliffe	1	386881	1RATCLIF 1ST	377.2
Ratcliffe	1A	386882	1RATCLIF 1A	235.7
Ratcliffe	1B	386883	1RATCLIF 1B	235.7
RF Henry Dam	1	385401	1RF HENRY 13	82.0
Richland Creek	1	383498	1RICHLD CK	10.6
Rincon Solar	S1	383422	1RINCON SLR	15.7
Robins Air Force Base	A	383741	1RAFB CT A	80.0
Robins Air Force Base	B	383742	1RAFB CT B	80.0
Rocky Mountain	1	383511	1ROCKY MTN 1	350.0
Rocky Mountain	2	383512	1ROCKY MTN 2	350.0
Rocky Mountain	3	383513	1ROCKY MTN 3	350.0
Rucker Solar	S1	386034	3RUCKER SLR	11.0
Rumble Road	1	383721	1RMBL CT1	92.9
Rumble Road	2	383722	1RMBL CT2	95.3
Sandhills Solar	S1	383409	1SANDHLS SLR	144.4
Santa Rosa	1	386087	1ST ROSA A	75.0
Santa Rosa	1A	386088	1ST ROSA B	150.0
Scherer	1	383681	1SCHERER 1	837.7
Scherer	2	383682	1SCHERER 2	882.7
Scherer	3	383683	1SCHERER 3	883.3
Scherer	4	383684	1SCHERER 4	905.0

Plant	Unit	Bus #	Bus Name	Pmax (MW)
Sewell Creek	21	383851	1SEWCRK 21	122.5
Sewell Creek	22	383852	1SEWCRK 22	124.8
Sewell Creek	11	383853	1SEWCRK 11	91.4
Sewell Creek	12	383854	1SEWCRK 12	91.3
Simon	S1	383798	1SSFGEN	30.0
Sinclair Dam	1	383548	1SINCLAIR 1	19.3
Sinclair Dam	2	383549	1SINCLAIR 2	19.3
Smith Dam	1	384142	1SMITH GN	82.5
Smith Dam	2	384142	1SMITH GN	82.5
SOWEGA	2	383792	1SOWEGA 2	49.3
SOWEGA	3	383802	1SOWEGA 3	49.0
Stewart Solar	S1	383413	1STEWART SLR	30.0
Stone Container	A	385412	1STONECTR 13	8.0
Strata Solar	S1	383408	3STRATA SLR	20.0
Sweatt	A	386800	1SWEATT A	32.0
Sweatt	1	386801	1SWEATT 1	47.0
Sweatt	2	386802	1SWEATT 2	47.0
T.A. Smith I	1	383604	1CONASAUG1ST	322.5
T.A. Smith I	1A	383605	1CONASAUGA1A	162.3
T.A. Smith I	1B	383606	1CONASAUGA1B	162.3
T.A. Smith II	2	383607	1LOOPERS 2ST	322.5
T.A. Smith II	2A	383608	1LOOPERS 2A	162.3
T.A. Smith II	2B	383609	1LOOPERS 2B	162.3
Talbot County	1	383911	1TALBOT 1	95.5
Talbot County	2	383912	1TALBOT 2	95.9
Talbot County	3	383913	1TALBOT 3	94.7

Plant	Unit	Bus #	Bus Name	Pmax (MW)
Talbot County	4	383914	1TALBOT 4	96.9
Talbot County	5	383915	1TALBOT 5	95.6
Talbot County	6	383916	1TALBOT 6	95.7
Tallulah Falls Dam	1	383542	1TALLULAH 1	12.0
Tallulah Falls Dam	2	383543	1TALLULAH 2	11.3
Tallulah Falls Dam	3	383544	1TALLULAH 3	11.3
Tallulah Falls Dam	4	383545	1TALLULAH 4	11.3
Tallulah Falls Dam	5	383546	1TALLULAH 5	11.3
Tallulah Falls Dam	6	383547	1TALLULAH 6	11.3
Tenaska - Heard County	1	383921	1TENSKA GA 1	157.5
Tenaska - Heard County	2	383922	1TENSKA GA 2	157.5
Tenaska - Heard County	3	383923	1TENSKA GA 3	157.5
Tenaska - Heard County	4	383924	1TENSKA GA 4	157.5
Tenaska - Heard County	5	383925	1TENSKA GA 5	157.5
Tenaska - Heard County	6	383926	1TENSKA GA 6	157.5
Terrora Dam	1	383530	1TERRORA	14.5
Theodore	1	386085	1THEO 1	64.0
Theodore	1A	386086	1THEO A	167.0
Thurlgen	1	386591	1THURLGEN	69.4
Thurlgen	3	386591	1THURLGEN	10.0
Tiger Creek	1	383855	1TIGER CK1	157.9
Tiger Creek	2	383856	1TIGER CK2	156.3
Tiger Creek	3	383857	1TIGER CK3	156.3
Tiger Creek	4	383858	1TIGER CK4	156.6
Tugalo Dam	1	383532	1TUGALO 1-2	22.1
Tugalo Dam	3	383533	1TUGALO 3-4	22.1

Plant	Unit	Bus #	Bus Name	Pmax (MW)
Vogtle	1	383751	1VOGTLE1	1158.7
Vogtle	2	383752	1VOGTLE2	1160.5
Vogtle	3	383753	1VOGTLE3	1102.0
Vogtle	4	383754	1VOGTLE4	1102.0
Wallace Dam	1	383536	1WALLACE 1-3	50.7
Wallace Dam	2	383536	1WALLACE 1-3	50.7
Wallace Dam	3	383536	1WALLACE 1-3	54.6
Wallace Dam	4	383537	1WALLACE 4-6	54.6
Wallace Dam	5	383537	1WALLACE 4-6	50.7
Wallace Dam	6	383537	1WALLACE 4-6	50.7
Wansley	5A	383620	1WANSLEY 5A	49.0
Wansley	1	383621	1WANSLEY 1	889.0
Wansley	2	383622	1WANSLEY 2	889.0
Wansley	6	383623	1WANSLEY 6ST	223.7
Wansley	6A	383624	1WANSLEY 6A	175.0
Wansley	6B	383625	1WANSLEY 6B	175.0
Wansley	7	383626	1WANSLEY 7ST	225.5
Wansley	7A	383627	1WANSLEY 7A	175.0
Wansley	7B	383628	1WANSLEY 7B	175.0
Wansley	1	383629	1WANSLEY 9ST	202.6
Wansley	1A	383630	1WANSLEY 9A	145.4
Wansley	1B	383631	1WANSLEY 9B	145.4
Warthen	1	383743	1WARTHEN 1	69.0
Warthen	2	383744	1WARTHEN 2	69.0
Warthen	3	383745	1WARTHEN 3	69.0
Warthen	4	383746	1WARTHEN 4	69.0

Plant	Unit	Bus #	Bus Name	Pmax (MW)
Warthen	5	383747	1WARTHEN 5	69.0
Warthen	6	383748	1WARTHEN 6	69.0
Warthen	7	383749	1WARTHEN 7	69.0
Warthen	8	383750	1WARTHEN 8	69.0
Washington County	1	386081	1WASH CO 1	32.0
Washington County	1A	386082	1WASH CO 2	68.0
Watson	A	386850	1WATSON A	33.0
Watson	3	386853	1WATSON 3	113.0
Watson	4	386854	1WATSON 4	268.0
Watson	5	386855	1WATSON 5	516.0
Weiss Dam	1	386511	1WEISSGEN	71.0
West Point Dam	1	383508	1W PT DAM	82.0
Weyerhauser Biomass	1	389199	1WEYERPW BIO	40.0
Weyerhauser Biomass	2	389199	1WEYERPW BIO	25.0
White Oak Solar	S1	383404	1WHT OAK SLR	76.5
White Pine Solar	S1	383405	1WH PINE SLR	101.5
Wilson	A	383761	1WILSON A	41.0
Wilson	B	383762	1WILSON B	56.0
Wilson	C	383763	1WILSON C	49.0
Wilson	D	383764	1WILSON D	41.0
Wilson	E	383765	1WILSON E	54.0
Wilson	F	383766	1WILSON F	54.0
Yates	6	383646	1YATES 6	352.0
Yates	7	383647	1YATES 7	355.0
Yates Dam	1	384448	1YATE GEN	46.0
Yonah Dam	1	383534	1YONAH	25.1

Appendix 9: TVA BAA

The following information provides a more granular overview of the TVA BAA input assumptions and transmission expansion plan that are incorporated in the development of the SERTP regional transmission plan.

Table A9.1: 2016 SERTP Regional Transmission Plan – Transmission Project Snapshot by operating voltage (TVA BAA)

TVA BAA	100-120 kV	121-150 kV	151-199 kV	200-299 kV	300-399 kV	400-550 kV
Transmission lines – New (Circuit Mi.)	--	--	162.0	--	--	--
Transmission Lines – Uprates[1] (Circuit Mi.)	--	--	190.0	--	--	--
Transformers[2] – New	--	--	--	--	--	4
Transformers[2] – Replacements	--	--	--	--	--	--

[1]A transmission line uprate may be the result of reconductoring and/or increasing the operating temperature/voltage along the transmission line.
[2]The voltages shown represent the operating voltages on the high side terminals of the transformer

Table A9.2: Interface commitments[1] modeled in the SERTP Summer Peak models – TVA BAA

To	2017	2019	2021	2022	2024	2026
PJM	-400	-400	-400	-400	-400	-400
MISO	282	282	799	799	799	800
Duke Progress West	1	1	1	1	1	1
Southern	60	64	66	67	69	71
LG&E/KU	3	3	3	3	3	3
Brookfield/Smoky Mountain	-384	-384	-384	-384	-384	-384
APGI-Tapoco	91	91	91	91	91	91
Total	-337	-335	185	187	189	192

[1]A positive number represents a net export from the TVA BAA

A detailed listing of the changes in generation assumptions within the TVA BAA throughout the ten (10) year planning horizon, including the year(s) in which they occur, is provided in Table A9.3 below. Furthermore, supplemental information regarding noteworthy generation expansion and retirements/decertifications included in the 2016 series set of SERTP powerflow models is provided below, while Table A9.4 provides a listing of generation assumptions based upon long-term, firm point-to-point commitments. The capacity (MW) values shown for each year reflect summer peak conditions. Table A9.5 provides a listing of all generators modeled in the 2017 Summer Peak powerflow model.

Table A9.3: Changes in Generation Assumptions Based Upon LSEs – TVA BAA

Site	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Colbert 1 - 4	0	0	0	0	0	0	0	0	0	0
Johnsonville 1-4	0	0	0	0	0	0	0	0	0	0
Browns Ferry Unit 1	1103	1103	1237	1237	1237	1237	1237	1237	1237	1237
Browns Ferry Unit 2	1108	1108	1242	1242	1242	1242	1242	1242	1242	1242
Browns Ferry Unit 3	1108	1242	1242	1242	1242	1242	1242	1242	1242	1242
Watts Bar Unit 2	1155	1155	1155	1155	1155	1155	1155	1155	1155	1155
Gleason 1	173	173	173	173	173	173	173	173	173	173
Gleason 2	173	173	173	173	173	173	173	173	173	173
Gleason 3	174	174	174	174	174	174	174	174	174	174
Selmer Solar	16	16	16	16	16	16	16	16	16	16
Mulberry Solar	16	16	16	16	16	16	16	16	16	16

Noteworthy Generation Expansion

- TVA is building an additional 1200 MWs of nuclear generation at the Watts Bar Nuclear Site near Spring City, TN. The second unit is scheduled to be in commercial operation by 2016.

Noteworthy Generation Retirements/Decertifications

- TVA decertified or announced plans to decertify the following generating units:
  - Johnsonville Units 1-4 in 2016

- Colbert Units 1-4 in 2016

Table A9.4: Generation Assumptions Based Upon Expected Long-term, Firm Point-to-Point Commitments – TVA BAA

Site	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Reliant	0	0	0	0	525	525	525	525	525	525

Table A9.5: Generating Units Modeled in the 2017 Summer Peak Powerflow Model – TVA BAA

Plant	Unit	Bus #	Bus Name	Pmax (MW)
Allen CT	1	364201	1ALLEN T1-4	15.0
Allen CT	2	364201	1ALLEN T1-4	15.0
Allen CT	3	364201	1ALLEN T1-4	15.0
Allen CT	4	364201	1ALLEN T1-4	15.0
Allen CT	5	364202	1ALLEN T5-8	15.0
Allen CT	6	364202	1ALLEN T5-8	15.0
Allen CT	7	364202	1ALLEN T5-8	15.0
Allen CT	8	364202	1ALLEN T5-8	15.0
Allen CT	1	364203	1ALLEN T9-12	15.0
Allen CT	2	364203	1ALLEN T9-12	15.0
Allen CT	3	364203	1ALLEN T9-12	15.0
Allen CT	9	364203	1ALLEN T9-12	15.0
Allen CT	1	364204	1ALLENT13-16	15.0
Allen CT	2	364204	1ALLENT13-16	15.0
Allen CT	3	364204	1ALLENT13-16	15.0
Allen CT	4	364204	1ALLENT13-16	15.0

Allen CT	1	364205	1ALLEN T17	46.0
Allen CT	1	364206	1ALLEN T18	46.0
Allen CT	1	364207	1ALLEN T19	46.0
Allen CT	1	364208	1ALLEN T20	46.0
Allen Fossil	1	364101	1ALLEN F1	257.0
Allen Fossil	1	364102	1ALLEN F2	257.0
Allen Fossil	1	364103	1ALLEN F3	257.0
Apalachia Hydro	1	364421	1APALACH H1	41.2
Apalachia Hydro	1	364422	1APALACH H2	41.2
Barkley Hydro	1	364601	1BARKLEY H1	37.0
Barkley Hydro	1	364602	1BARKLEY H2	37.0
Barkley Hydro	1	364603	1BARKLEY H3	37.0
Barkley Hydro	1	364604	1BARKLEY H4	37.0
Blue Ridge Hydro	1	364423	1BLUERIDG H1	17.4
Boone Hydro	1	364424	1BOONE H1	37.8
Boone Hydro	1	364425	1BOONE H2	37.8
Boone Hydro	1	364426	1BOONE H3	37.2
Browns Ferry Nuclear	1	364001	1BR FERRY N1	1132.6
Browns Ferry Nuclear	1	364002	1BR FERRY N2	1133.4
Browns Ferry Nuclear	1	364003	1BR FERRY N3	1137.5
Brownsville CT	1	364701	1BROWNSVL T1	117.0
Brownsville CT	2	364702	1BROWNSVL T2	117.0
Brownsville CT	3	364703	1BROWNSVL T3	125.0
Brownsville CT	4	364704	1BROWNSVL T4	125.0
Bull Run Fossil	1	364109	1BULLRUN F1H	461.1
Bull Run Fossil	1	364110	1BULLRUN F1L	463.2
Caledonia CC	1	364801	1COGCALED T1	142.0
Caledonia CC	2	364802	1COGCALED S1	104.5

Caledonia CC	3	364803	1COGCALED T2	142.0
Caledonia CC	4	364804	1COGCALED S2	104.5
Caledonia CC	5	364805	1COGCALED T3	142.0
Caledonia CC	6	364806	1COGCALED S3	104.5
Center Hill Hydro	1	364605	1CENTHILL H1	52.0
Center Hill Hydro	1	364606	1CENTHILL H2	52.0
Center Hill Hydro	1	364607	1CENTHILL H3	52.0
Chatuge Hydro	1	364428	1CHATUGE H1	13.9
Cheatham Hydro	1	364608	1CHEATHAM H1	13.8
Cheatham Hydro	1	364609	1CHEATHAM H2	13.8
Cheatham Hydro	1	364610	1CHEATHAM H3	13.8
Cherokee Hydro	1	364511	1CHEROKEE H1	37.0
Cherokee Hydro	2	364512	1CHEROKEE H2	36.7
Cherokee Hydro	3	364513	1CHEROKEE H3	39.8
Cherokee Hydro	4	364514	1CHEROKEE H4	17.2
Chickamauga Hydro	1	364431	1CHICKAMG H1	35.4
Chickamauga Hydro	1	364432	1CHICKAMG H2	35.4
Chickamauga Hydro	1	364433	1CHICKAMG H3	35.4
Chickamauga Hydro	1	364434	1CHICKAMG H4	35.4
Choctaw CC	1	364721	1SUEZCHOC T1	219.0
Choctaw CC	1	364722	1SUEZCHOC T2	218.0
Choctaw CC	1	364723	1SUEZCHOC S1	236.0
Colbert CT	1	364211	1COLBERT T1	45.0
Colbert CT	2	364212	1COLBERT T2	45.0
Colbert CT	3	364213	1COLBERT T3	45.0
Colbert CT	4	364214	1COLBERT T4	45.0
Colbert CT	5	364215	1COLBERT T5	45.0
Colbert CT	6	364216	1COLBERT T6	45.0

Colbert CT	7	364217	1COLBERT T7	45.0
Colbert CT	8	364218	1COLBERT T8	45.0
Colbert Fossil	1	364111	1COLBERT F1	12.0
Colbert Fossil	1	364112	1COLBERT F2	12.0
Colbert Fossil	1	364113	1COLBERT F3	12.0
Colbert Fossil	1	364114	1COLBERT F4	12.0
Colbert Fossil	1	364115	1COLBERT F5A	21.4
Colbert Fossil	1	364116	1COLBERT F5B	20.0
Cordell Hull Hydro	1	364611	1CORDELL H1	38.0
Cordell Hull Hydro	1	364612	1CORDELL H2	38.0
Cordell Hull Hydro	1	364613	1CORDELL H3	38.0
Cumberland Fossil	1	364119	1CUMBRL F1HL	645.5
Cumberland Fossil	2	364119	1CUMBRL F1HL	645.5
Cumberland Fossil	1	364120	1CUMBRL F2HL	651.0
Cumberland Fossil	2	364120	1CUMBRL F2HL	640.0
Dale Hollow Hydro	1	364614	1DALE HOL H1	20.7
Dale Hollow Hydro	1	364615	1DALE HOL H2	20.7
Dale Hollow Hydro	1	364616	1DALE HOL H3	20.7
Decatur Energy Center CC	1	364731	1DEC CT1	155.0
Decatur Energy Center CC	1	364732	1DEC CT2	155.0
Decatur Energy Center CC	1	364733	1DEC CT3	155.0
Decatur Energy Center CC	1	364734	1DEC STG	260.0
Douglas Hydro	1	364435	1DOUGLAS H1	45.8
Douglas Hydro	1	364436	1DOUGLAS H2	45.8
Douglas Hydro	1	364437	1DOUGLAS H3	45.8
Douglas Hydro	1	364438	1DOUGLAS H4	45.8
E McMinville	1	364904	1E MCMIN1-12	20.0
Fontana Hydro	1	364439	1FONTANA H1	101.4

Fontana Hydro	1	364440	1FONTANA H2	101.4
Fontana Hydro	1	364441	1FONTANA H3	101.4
Fort Loudoun Hydro	1	364442	1FTLOUD H1	40.0
Fort Loudoun Hydro	3	364443	1FTLOUD H3	45.3
Fort Loudoun Hydro	1	364444	1FTLOUD H2	37.7
Fort Loudoun Hydro	4	364445	1FTLOUD H4	45.3
Fort Patrick Henry Hydro	1	364446	1FT PAT H1-2	16.0
Fort Patrick Henry Hydro	2	364446	1FT PAT H1-2	16.0
Gallatin CT	1	364221	1GALLATIN T1	72.0
Gallatin CT	2	364222	1GALLATIN T2	72.0
Gallatin CT	3	364223	1GALLATIN T3	72.0
Gallatin CT	4	364224	1GALLATIN T4	72.0
Gallatin CT	5	364225	1GALLATIN T5	84.0
Gallatin CT	6	364226	1GALLATIN T6	84.0
Gallatin CT	7	364227	1GALLATIN T7	84.0
Gallatin CT	8	364228	1GALLATIN T8	84.0
Gallatin Fossil	1	364121	1GALLATIN F1	227.0
Gallatin Fossil	1	364122	1GALLATIN F2	227.0
Gallatin Fossil	1	364123	1GALLATIN F3	267.0
Gallatin Fossil	1	364124	1GALLATIN F4	267.0
Gleason CT	1	364231	1GLEASON T1	181.0
Gleason CT	2	364232	1GLEASON T2	181.0
Gleason CT	3	364233	1GLEASON T3	166.0
Great Falls Hydro	1	364447	1GFALLS H1-2	15.9
Great Falls Hydro	2	364447	1GFALLS H1-2	19.5
Guntersville Hydro	1	364448	1GUNTERSV H1	28.8
Guntersville Hydro	1	364449	1GUNTERSV H2	30.6
Guntersville Hydro	1	364450	1GUNTERSV H3	29.8

Guntersville Hydro	1	364451	1GUNTERSV H4	31.3
Hiwassee Hydro	1	364452	1HIWASSEE H1	87.7
Hiwassee Hydro	1	364453	1HIWASSEE H2	89.7
John Sevier CC	1	364321	1J SEVIER C1	164.0
John Sevier CC	2	364322	1J SEVIER C2	164.0
John Sevier CC	3	364323	1J SEVIER C3	164.0
John Sevier CC	4	364324	1J SEVIER S4	345.0
Johnsonville CT	1	364241	1JVILLE T1	55.0
Johnsonville CT	2	364242	1JVILLE T2	55.0
Johnsonville CT	3	364243	1JVILLE T3	55.0
Johnsonville CT	4	364244	1JVILLE T4	55.0
Johnsonville CT	5	364245	1JVILLE T5	55.0
Johnsonville CT	6	364246	1JVILLE T6	55.0
Johnsonville CT	7	364247	1JVILLE T7	55.0
Johnsonville CT	8	364248	1JVILLE T8	55.0
Johnsonville CT	9	364249	1JVILLE T9	55.0
Johnsonville CT	1	364250	1JVILLE T10	55.0
Johnsonville CT	1	364251	1JVILLE T11	55.0
Johnsonville CT	1	364252	1JVILLE T12	55.0
Johnsonville CT	1	364253	1JVILLE T13	55.0
Johnsonville CT	1	364254	1JVILLE T14	55.0
Johnsonville CT	1	364255	1JVILLE T15	55.0
Johnsonville CT	1	364256	1JVILLE T16	55.0
Johnsonville CT	1	364257	1JVILLE T17	83.0
Johnsonville CT	1	364258	1JVILLE T18	83.0
Johnsonville CT	1	364259	1JVILLE T19	83.0
Johnsonville CT	1	364260	1JVILLE T20	83.0
Johnsonville Fossil	1	364141	1JVILLE F1	117.0

Johnsonville Fossil	1	364142	1JVILLE F2	117.0
Johnsonville Fossil	1	364143	1JVILLE F3	117.0
Johnsonville Fossil	1	364144	1JVILLE F4	117.0
Johnsonville Fossil	1	364145	1JVILLE F5	10.0
Johnsonville Fossil	1	364146	1JVILLE F6	10.0
Johnsonville Fossil	1	364147	1JVILLE F7	12.0
Johnsonville Fossil	1	364148	1JVILLE F8	12.0
Johnsonville Fossil	1	364149	1JVILLE F9	12.0
Johnsonville Fossil	1	364150	1JVILLE F10	12.0
Kemper CT	1	364261	1KEMPER T1	84.0
Kemper CT	1	364262	1KEMPER T2	84.0
Kemper CT	1	364263	1KEMPER T3	84.0
Kemper CT	1	364264	1KEMPER T4	84.0
Kentucky Hydro	1	364456	1KY HYDRO H1	43.4
Kentucky Hydro	1	364457	1KY HYDRO H2	43.5
Kentucky Hydro	1	364458	1KY HYDRO H3	43.5
Kentucky Hydro	1	364459	1KY HYDRO H4	44.9
Kentucky Hydro	1	364460	1KY HYDRO H5	43.0
Kingston Fossil	1	364151	1KINGSTON F1	154.7
Kingston Fossil	1	364152	1KINGSTON F2	139.0
Kingston Fossil	1	364153	1KINGSTON F3	139.0
Kingston Fossil	1	364154	1KINGSTON F4	139.0
Kingston Fossil	1	364155	1KINGSTON F5	183.0
Kingston Fossil	1	364156	1KINGSTON F6	183.0
Kingston Fossil	1	364157	1KINGSTON F7	183.0
Kingston Fossil	1	364158	1KINGSTON F8	183.0
Kingston Fossil	1	364159	1KINGSTON F9	196.6
Kyles Ford Hydro	1	364907	1KYLESF 1-11	20.0

Lagoon Creek CC	1	364301	1LAG CRK CT1	148.0
Lagoon Creek CC	1	364302	1LAG CRK CT2	148.0
Lagoon Creek CC	1	364303	1LAG CRK STG	220.0
Lagoon Creek CT	1	364271	1LAG CRK T1	84.0
Lagoon Creek CT	1	364272	1LAG CRK T2	84.0
Lagoon Creek CT	1	364273	1LAG CRK T3	84.0
Lagoon Creek CT	1	364274	1LAG CRK T4	84.0
Lagoon Creek CT	1	364275	1LAG CRK T5	84.0
Lagoon Creek CT	1	364276	1LAG CRK T6	84.0
Lagoon Creek CT	1	364277	1LAG CRK T7	84.0
Lagoon Creek CT	1	364278	1LAG CRK T8	84.0
Lagoon Creek CT	1	364279	1LAG CRK T9	83.0
Lagoon Creek CT	1	364280	1LAG CRK T10	83.0
Lagoon Creek CT	1	364281	1LAG CRK T11	83.0
Lagoon Creek CT	1	364282	1LAG CRK T12	83.0
Magnolia CC	1	364761	1MAGNOL T1	149.0
Magnolia CC	1	364762	1MAGNOL T2	149.0
Magnolia CC	1	364763	1MAGNOL T3	149.0
Magnolia CC	1	364764	1MAGNOL S1	149.0
Magnolia CC	1	364765	1MAGNOL S2	150.0
Magnolia CC	1	364766	1MAGNOL S3	149.0
Marshall CT	1	364291	1MARSHALL T1	76.0
Marshall CT	1	364292	1MARSHALL T2	76.0
Marshall CT	1	364293	1MARSHALL T3	76.0
Marshall CT	1	364294	1MARSHALL T4	76.0
Marshall CT	1	364295	1MARSHALL T5	76.0
Marshall CT	1	364296	1MARSHALL T6	76.0
Marshall CT	1	364297	1MARSHALL T7	76.0

Marshall CT	1	364298	1MARSHALL T8	76.0
Melton Hill Hydro	1	364461	1MELTON H H1	39.5
Melton Hill Hydro	1	364462	1MELTON H H2	39.7
Morgan Energy Center CC	1	364771	1MEC CT1	160.0
Morgan Energy Center CC	1	364772	1MEC CT2	160.0
Morgan Energy Center CC	1	364773	1MEC CT3	160.0
Morgan Energy Center CC	1	364774	1MEC STG	240.0
Mulberry Solar	1	364053	0MULB SOLAR 0	16.0
Nickajack Hydro	1	364521	1NICKAJACK 1	30.7
Nickajack Hydro	1	364522	1NICKAJACK 2	27.3
Nickajack Hydro	1	364523	1NICKAJACK 3	26.0
Nickajack Hydro	1	364524	1NICKAJACK 4	26.1
Norris Hydro	1	364465	1NORRIS H1	63.5
Norris Hydro	1	364466	1NORRIS H2	63.5
Nottely Hydro	1	364467	1NOTTELY H1	13.8
Ocoee 1 Hydro	1	364468	1OCOEE#1H1-3	4.8
Ocoee 1 Hydro	2	364468	1OCOEE#1H1-3	4.8
Ocoee 1 Hydro	3	364468	1OCOEE#1H1-3	4.8
Ocoee 1 Hydro	1	364469	1OCOEE#1H4-5	4.8
Ocoee 1 Hydro	2	364469	1OCOEE#1H4-5	4.8
Ocoee 2 Hydro	1	364470	1OCOEE#2H1-2	10.8
Ocoee 2 Hydro	2	364470	1OCOEE#2H1-2	12.6
Ocoee 3 Hydro	1	364471	1OCOEE #3 H1	28.6
Old Hickory Hydro	1	364617	1OLDHICKH1-2	28.7
Old Hickory Hydro	2	364617	1OLDHICKH1-2	29.0
Old Hickory Hydro	1	364618	1OLDHICKH3-4	29.0
Old Hickory Hydro	2	364618	1OLDHICKH3-4	29.0
Paradise CC	1	364304	1PARADIS CT1	210.0

Paradise CC	2	364305	1PARADIS CT2	210.0
Paradise CC	3	364306	1PARADIS CT3	210.0
Paradise CC	1	364307	1PARADIS S1	372.0
Paradise Fossil	1	364160	1PARADIS F1H	27.5
Paradise Fossil	1	364161	1PARADIS F1L	27.5
Paradise Fossil	1	364162	1PARADIS F2H	27.5
Paradise Fossil	1	364163	1PARADIS F2L	27.5
Paradise Fossil	1	364164	1PARADISF3AB	504.7
Paradise Fossil	2	364164	1PARADISF3AB	502.6
Percy Priest Hydro	1	364619	1PERCY PR H1	30.0
Pickwick Hydro	1	364472	1PICKWICK H1	37.2
Pickwick Hydro	1	364473	1PICKWICK H2	37.2
Pickwick Hydro	1	364474	1PICKWICK H3	38.4
Pickwick Hydro	1	364475	1PICKWICK H4	37.2
Pickwick Hydro	1	364476	1PICKWICK H5	37.2
Pickwick Hydro	1	364477	1PICKWICK H6	37.2
Raccoon Mountain PS	1	364401	1RACCOON P1	413.0
Raccoon Mountain PS	1	364402	1RACCOON P2	413.0
Raccoon Mountain PS	1	364403	1RACCOON P3	413.0
Raccoon Mountain PS	1	364404	1RACCOON P4	413.0
Red Hills Fossil	1	364780	1REDHILLS F1	482.5
Reliant CC	1	364781	1RELIANT T1	150.0
Reliant CC	1	364782	1RELIANT T2	150.0
Reliant CC	1	364783	1RELIANT T3	150.0
Reliant CC	1	364784	1RELIANT S1	289.0
Selmer Solar	1	364050	0SELMER SOLR0	16.0
Sequoyah Nuclear	1	364011	1SEQUOYAH N1	1200.2
Sequoyah Nuclear	1	364012	1SEQUOYAH N2	1187.2

Shawnee Fossil	1	364171	1SHAWNEE F1	143.0
Shawnee Fossil	1	364172	1SHAWNEE F2	143.0
Shawnee Fossil	1	364173	1SHAWNEE F3	143.0
Shawnee Fossil	1	364174	1SHAWNEE F4	143.0
Shawnee Fossil	1	364175	1SHAWNEE F5	143.0
Shawnee Fossil	1	364176	1SHAWNEE F6	143.0
Shawnee Fossil	1	364177	1SHAWNEE F7	143.0
Shawnee Fossil	1	364178	1SHAWNEE F8	143.0
Shawnee Fossil	1	364179	1SHAWNEE F9	143.0
South Holston Hydro	1	364478	1SHOLSTON H1	36.1
Southaven CC	1	364791	1S HAVEN T1	135.0
Southaven CC	3	364792	1S HAVEN T2	135.0
Southaven CC	5	364793	1S HAVEN T3	135.0
Southaven CC	2	364794	1S HAVEN S1	105.0
Southaven CC	4	364795	1S HAVEN S2	105.0
Southaven CC	6	364796	1S HAVEN S3	105.0
Tims Ford Hydro	1	364479	1TIMSFORD H1	40.1
Watauga Hydro	1	364480	1WATAUGA H1	37.9
Watauga Hydro	1	364481	1WATAUGA H2	24.6
Watts Bar Hydro	1	364482	1WBHP H1	39.3
Watts Bar Hydro	1	364483	1WBHP H2	37.9
Watts Bar Hydro	1	364484	1WBHP H3	37.9
Watts Bar Hydro	1	364485	1WBHP H4	39.2
Watts Bar Hydro	1	364486	1WBHP H5	39.2
Watts Bar Nuclear	1	364021	1WBNP N1	1216.1
Watts Bar Nuclear	2	364022	1WBNP N2	1186.9
Weyerhaeuser	1	364911	1WEYERHSR G1	25.9
Weyerhaeuser	2	364912	1WEYERHSR G2	25.9

Wheeler Hydro	1	364487	1WHEELR H1-2	38.8
Wheeler Hydro	2	364487	1WHEELR H1-2	33.2
Wheeler Hydro	1	364488	1WHEELR H3-4	33.6
Wheeler Hydro	2	364488	1WHEELR H3-4	33.4
Wheeler Hydro	1	364489	1WHEELR H5-6	34.7
Wheeler Hydro	2	364489	1WHEELR H5-6	34.6
Wheeler Hydro	1	364490	1WHEELR H7-8	34.4
Wheeler Hydro	2	364490	1WHEELR H7-8	34.5
Wheeler Hydro	1	364491	1WHEELRH9-11	39.7
Wheeler Hydro	2	364491	1WHEELRH9-11	39.7
Wheeler Hydro	3	364491	1WHEELRH9-11	39.7
Widows Creek Fossil	1	364187	1WID CRK F7H	16.5
Widows Creek Fossil	1	364188	1WID CRK F7L	16.5
Widows Creek Fossil	1	364189	1WID CRK F8A	18.5
Widows Creek Fossil	1	364190	1WID CRK F8B	18.5
Wilbur Hydro	1	364492	1WILBUR H1-3	1.4
Wilbur Hydro	2	364492	1WILBUR H1-3	1.4
Wilbur Hydro	3	364492	1WILBUR H1-3	1.3
Wilbur Hydro	1	364493	1WILBUR H4	7.0
Wilson Hydro	1	364494	1WILSON H1-2	22.0
Wilson Hydro	2	364494	1WILSON H1-2	22.3
Wilson Hydro	1	364495	1WILSON H3-4	23.0
Wilson Hydro	2	364495	1WILSON H3-4	22.0
Wilson Hydro	1	364496	1WILSON H5-6	28.5
Wilson Hydro	2	364496	1WILSON H5-6	28.5
Wilson Hydro	1	364497	1WILSON H7-8	29.1
Wilson Hydro	2	364497	1WILSON H7-8	30.7
Wilson Hydro	1	364498	1WILSON 9-10	29.6

Wilson Hydro	2	364498	1WILSON 9-10	29.5
Wilson Hydro	1	364499	1WILSON11-12	29.2
Wilson Hydro	2	364499	1WILSON11-12	29.2
Wilson Hydro	1	364500	1WILSON13-14	29.4
Wilson Hydro	2	364500	1WILSON13-14	29.4
Wilson Hydro	1	364501	1WILSON15-16	29.2
Wilson Hydro	2	364501	1WILSON15-16	29.2
Wilson Hydro	1	364502	1WILSON17-18	29.0
Wilson Hydro	2	364502	1WILSON17-18	29.0
Wilson Hydro	1	364503	1WILSON H19	55.0
Wilson Hydro	1	364504	1WILSON H20	56.1
Wilson Hydro	1	364505	1WILSON H21	55.0
Windrock Turbines	1	364915	1WINDROCK WG	27.0
Wolf Creek Hydro	1	364620	1WOLFCR H1-2	52.0
Wolf Creek Hydro	2	364620	1WOLFCR H1-2	52.0
Wolf Creek Hydro	1	364621	1WOLFCR H3-4	52.0
Wolf Creek Hydro	2	364621	1WOLFCR H3-4	52.0
Wolf Creek Hydro	1	364622	1WOLFCR H5-6	52.0
Wolf Creek Hydro	2	364622	1WOLFCR H5-6	52.0