Southeastern Regional TRANSMISSION PLANNING

2023 Economic Planning Studies

SERTP Southeastern Regional Transmission Planning

Economic Planning Studies
Final Results



November 27, 2023

Update Posted: 12/04/2023

2. Study Request 2 Results

South Georgia to North Georgia – Summer 2028

1600 MW

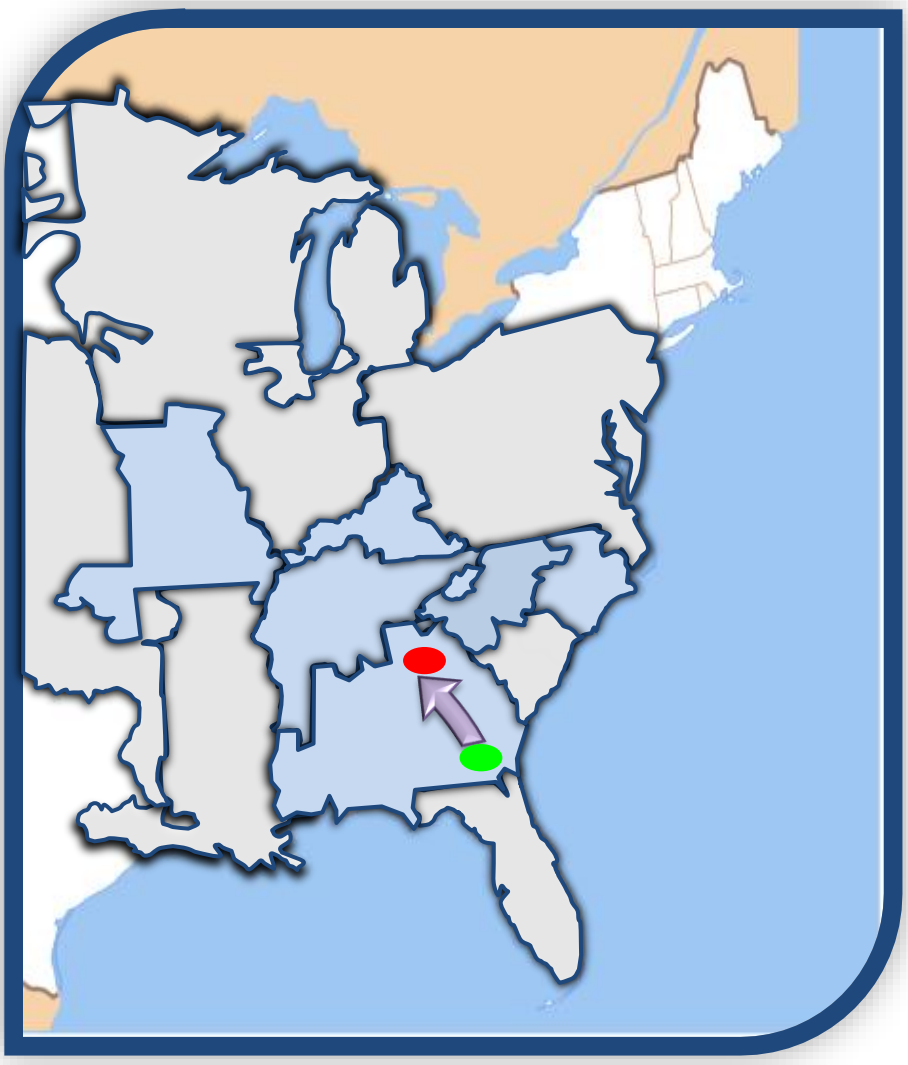
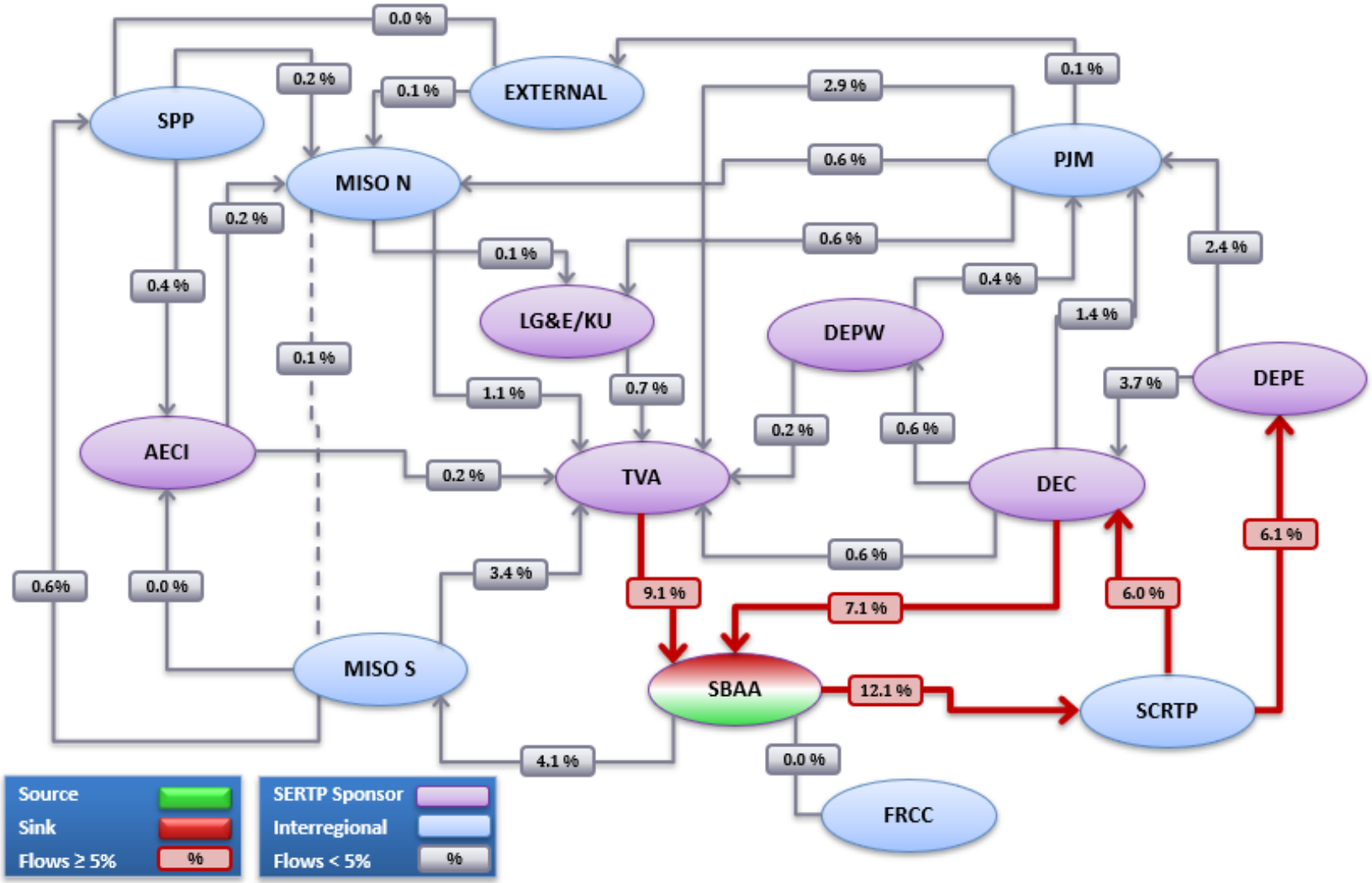


Table II.1.1. Total Cost Identified by the SERTP Sponsors

Balancing Authority Area	Planning Level Cost Estimate
Associated Electric Cooperative (AECI)	$0
Duke Carolinas (DEC)	$0
Duke Progress East (DEPE)	$0
Duke Progress West (DEPW)	$0
Louisville Gas & Electric and Kentucky Utilities (LG&E/KU)	$0
PowerSouth (PS)	$0
Southern (SBAA)	$94,990,000
Tennessee Valley Authority (TVA)	$925,000
TOTAL ($2023)	**$95,915,000**

Diagram II.1.1. Transfer Flow Diagram (% of Total Transfer)



Associated Electric Cooperative Balancing Authority Area (AECI) Results

Study Structure and Assumptions

Transfer Sensitivity	Amount	Source	Sink	Year
South Georgia to North Georgia	1600 MW	South Georgia	North Georgia	2028
Load Flow Cases				
2023 Series Version 1 SERTP Models: Summer Peak				

Transmission System Impacts

The following tables below identify any constraints attributable to the requested transfer for the contingency and scenario that resulted in the most significant loadings for the conditions studied. Other unit out scenarios or contingencies may also result in constraints to these or other facilities.

Table II.2.1. Pass 0 – Transmission System Impacts with No Enhancements – *AECI*

The following table identifies significant ***AECI*** thermal constraints without any enhancements to the transmission system.

Area	Limiting Element	Rating (MVA)	Thermal Loadings (%)		Contingency	Scenario	Project
			Without Request	With Request			
AECI	None Identified	--	--	--	--	--	--

Scenario Explanations:

1. N/A

Table II.2.2. Pass 1 – Potential Future Transmission System Impacts – *AECI*

The following table depicts thermal loadings of ***AECI*** transmission facilities that could become potential constraints in future years or with different queuing assumptions but are not overloaded in the study year with all proposed enhancements to the transmission system.

			Thermal Loadings (%)				
Area	**Limiting Element**	**Rating (MVA)**	**Without Request**	**With Request**	**Contingency**	**Scenario**	**Project**
AECI	None Identified	--	--	--	--	--	--

Scenario Explanations:

1. N/A

Table II.2.3. Potential Solutions for Identified Problems – *AECI*

The following table lists any potential solutions that were identified to address the attributable constraints based on the assumptions used in this study. It must be noted that changes to the load forecast, and/or changes in the expansion plan could occur and would impact the results of this study. In addition, the currently projected improvements to the transmission system were modeled in the cases. Changes to system conditions and/or the transmission expansion plans could also impact the results of this study.

Item	Potential Solution	Estimated Need Date	Planning Level Cost Estimate
--	**None Required**	--	--
AECI TOTAL ($2023)			**$0** (1)

(1) Total planning level cost estimate does not include the cost of projects that are included in SERTP Sponsors' expansion plans and are scheduled to be completed by June 1st of the study year. The studied transfer depends on these projects being in-service, and the cost to support the study transfer could be greater than the total shown above if any of these projects are delayed or cancelled.

Duke Carolinas Balancing Authority Area (DEC) Results

Study Structure and Assumptions

Transfer Sensitivity	Amount	Source	Sink	Year
South Georgia to North Georgia	1600 MW	South Georgia	North Georgia	2028
Load Flow Cases				
2023 Series Version 1 SERTP Models: Summer Peak				

Transmission System Impacts

The following tables below identify any constraints attributable to the requested transfer for the contingency and scenario that resulted in the most significant loadings for the conditions studied. Other unit out scenarios or contingencies may also result in constraints to these or other facilities.

Table II.3.1. Pass 0 – Transmission System Impacts with No Enhancements – *DEC*

The following table identifies significant ***DEC*** thermal constraints without any enhancements to the transmission system.

			Thermal Loadings (%)				
Area	**Limiting Element**	**Rating (MVA)**	**Without Request**	**With Request**	**Contingency**	**Scenario**	**Project**
DEC	None Identified	--	--	--	--	--	--

Scenario Explanations:

1. N/A

Table II.3.2. Pass 1 – Potential Future Transmission System Impacts – *DEC*

The following table depicts thermal loadings of ***DEC*** transmission facilities that could become potential constraints in future years or with different queuing assumptions but are not overloaded in the study year with all proposed enhancements to the transmission system.

			Thermal Loadings (%)				
Area	**Limiting Element**	**Rating (MVA)**	**Without Request**	**With Request**	**Contingency**	**Scenario**	**Project**
DEC	None Identified	--	--	--	--	--	--

Scenario Explanations:

1. N/A

Table II.3.3. Potential Solutions for Identified Problems – *DEC*

The following table lists any potential solutions that were identified to address the attributable constraints based on the assumptions used in this study. It must be noted that changes to the load forecast, and/or changes in the expansion plan could occur and would impact the results of this study. In addition, the currently projected improvements to the transmission system were modeled in the cases. Changes to system conditions and/or the transmission expansion plans could also impact the results of this study.

Item	Potential Solution	Estimated Need Date	Planning Level Cost Estimate
--	**None Required**	--	--
DEC TOTAL ($2023)			$0 (1)

(1) Total planning level cost estimate does not include the cost of projects that are included in SERTP Sponsors' expansion plans and are scheduled to be completed by June 1st of the study year. The studied transfer depends on these projects being in-service, and the cost to support the study transfer could be greater than the total shown above if any of these projects are delayed or cancelled.

Duke Progress East Balancing Authority Area (DEPE) Results

Study Structure and Assumptions

Transfer Sensitivity	Amount	Source	Sink	Year
South Georgia to North Georgia	1600 MW	South Georgia	North Georgia	2028
Load Flow Cases				
2023 Series Version 1 SERTP Models: Summer Peak				

Transmission System Impacts

The following tables below identify any constraints attributable to the requested transfer for the contingency and scenario that resulted in the most significant loadings for the conditions studied. Other unit out scenarios or contingencies may also result in constraints to these or other facilities.

Table II.4.1. Pass 0 – Transmission System Impacts with No Enhancements – *DEPE*

The following table identifies significant ***DEPE*** thermal constraints without any enhancements to the transmission system.

			Thermal Loadings (%)				
Area	**Limiting Element**	**Rating (MVA)**	**Without Request**	**With Request**	**Contingency**	**Scenario**	**Project**
DEPE	None Identified	--	--	--	--	--	--

Scenario Explanations:

1. N/A

Table II.4.2. Pass 1 – Potential Future Transmission System Impacts – *DEPE*

The following table depicts thermal loadings of ***DEPE*** transmission facilities that could become potential constraints in future years or with different queuing assumptions but are not overloaded in the study year with all proposed enhancements to the transmission system.

			Thermal Loadings (%)				
Area	**Limiting Element**	**Rating (MVA)**	**Without Request**	**With Request**	**Contingency**	**Scenario**	**Project**
--	None Identified	--	--	--	--	--	--

Scenario Explanations:

1. N/A

Table II.4.3. Potential Solutions for Identified Problems – *DEPE*

The following table lists any potential solutions that were identified to address the attributable constraints based on the assumptions used in this study. It must be noted that changes to the load forecast, and/or changes in the expansion plan could occur and would impact the results of this study. In addition, the currently projected improvements to the transmission system were modeled in the cases. Changes to system conditions and/or the transmission expansion plans could also impact the results of this study.

Item	Potential Solution	Estimated Need Date	Planning Level Cost Estimate
--	**None Required**	--	--
DEPE TOTAL ($2023)			**$0** (1)

(1) Total planning level cost estimate does not include the cost of projects that are included in SERTP Sponsors' expansion plans and are scheduled to be completed by June 1st of the study year. The studied transfer depends on these projects being in-service, and the cost to support the study transfer could be greater than the total shown above if any of these projects are delayed or cancelled.

Duke Progress West (DEPW) Results

Study Structure and Assumptions

Transfer Sensitivity	Amount	Source	Sink	Year
South Georgia to North Georgia	1600 MW	South Georgia	North Georgia	2028
Load Flow Cases				
2023 Series Version 1 SERTP Models: Summer Peak				

Transmission System Impacts

The following tables below identify any constraints attributable to the requested transfer for the contingency and scenario that resulted in the most significant loadings for the conditions studied. Other unit out scenarios or contingencies may also result in constraints to these or other facilities.

Table II.5.1. Pass 0 – Transmission System Impacts with No Enhancements – *DEPW*

The following table identifies significant ***DEPW*** thermal constraints without any enhancements to the transmission system.

Area	Limiting Element	Rating (MVA)	Thermal Loadings (%)		Contingency	Scenario	Project
			Without Request	With Request			
DEPW	None Identified	--	--	--	--	--	--

Scenario Explanations:

1. N/A

Table II.5.2. Pass 1 – Potential Future Transmission System Impacts – *DEPW*

The following table depicts thermal loadings of ***DEPW*** transmission facilities that could become potential constraints in future years or with different queuing assumptions but are not overloaded in the study year with all proposed enhancements to the transmission system.

			Thermal Loadings (%)				
Area	**Limiting Element**	**Rating (MVA)**	**Without Request**	**With Request**	**Contingency**	**Scenario**	**Project**
DEPW	None Identified	--	--	--	--	--	--

Scenario Explanations:

1. N/A

Table II.5.3. Potential Solutions for Identified Problems – *DEPW*

The following table lists any potential solutions that were identified to address the attributable constraints based on the assumptions used in this study. It must be noted that changes to the load forecast, and/or changes in the expansion plan could occur and would impact the results of this study. In addition, the currently projected improvements to the transmission system were modeled in the cases. Changes to system conditions and/or the transmission expansion plans could also impact the results of this study.

Item	Potential Solution	Estimated Need Date	Planning Level Cost Estimate
--	**None Required**	--	$0
DEPW TOTAL ($2023)			**$0** (1)

(1) Total planning level cost estimate does not include the cost of projects that are included in SERTP Sponsors' expansion plans and are scheduled to be completed by June 1st of the study year. The studied transfer depends on these projects being in-service, and the cost to support the study transfer could be greater than the total shown above if any of these projects are delayed or cancelled.

Louisville Gas & Electric and Kentucky Utilities Balancing Authority Area (LG&E/KU) Results

Study Structure and Assumptions

Transfer Sensitivity	Amount	Source	Sink	Year
South Georgia to North Georgia	1600 MW	South Georgia	North Georgia	2028
Load Flow Cases				
2023 Series Version 1 SERTP Models: Summer Peak				

Transmission System Impacts

The following tables below identify any constraints attributable to the requested transfer for the contingency and scenario that resulted in the most significant loadings for the conditions studied. Other unit out scenarios or contingencies may also result in constraints to these or other facilities.

Table II.6.1. Pass 0 – Transmission System Impacts with No Enhancements – *LG&E/KU*

The following table identifies significant ***LG&E/KU*** thermal constraints without any enhancements to the transmission system.

Area	Limiting Element	Rating (MVA)	Thermal Loadings (%)		Contingency	Scenario	Project
			Without Request	With Request			
LG&E/KU	None Identified	--	--	--	--	--	--

Scenario Explanations:

1. N/A

Table II.6.2. Pass 1 – Potential Future Transmission System Impacts – *LG&E/KU*

The following table depicts thermal loadings of ***LG&E/KU*** transmission facilities that could become potential constraints in future years or with different queuing assumptions but are not overloaded in the study year with all proposed enhancements to the transmission system.

			Thermal Loadings (%)				
Area	**Limiting Element**	**Rating (MVA)**	**Without Request**	**With Request**	**Contingency**	**Scenario**	**Project**
LG&E/KU	None Identified	--	--	--	--	--	--

Scenario Explanations:

1. N/A

Table II.6.3. Potential Solutions for Identified Problems – *LG&E/KU*

The following table lists any potential solutions that were identified to address the attributable constraints based on the assumptions used in this study. It must be noted that changes to the load forecast, and/or changes in the expansion plan could occur and would impact the results of this study. In addition, the currently projected improvements to the transmission system were modeled in the cases. Changes to system conditions and/or the transmission expansion plans could also impact the results of this study.

Item	Potential Solution	Estimated Need Date	Planning Level Cost Estimate
--	None Required	--	--
LG&E/KU TOTAL ($2023)			**$0** (1)

(1) Total planning level cost estimate does not include the cost of projects that are included in SERTP Sponsors' expansion plans and are scheduled to be completed by June 1st of the study year. The studied transfer depends on these projects being in-service, and the cost to support the study transfer could be greater than the total shown above if any of these projects are delayed or cancelled.

PowerSouth Planning Authority Area (PS) Results

Study Structure and Assumptions

Transfer Sensitivity	Amount	Source	Sink	Year
South Georgia to North Georgia	1600 MW	South Georgia	North Georgia	2028
Load Flow Cases				
2023 Series Version 1 SERTP Models: Summer Peak				

Transmission System Impacts

The following tables below identify any constraints attributable to the requested transfer for the contingency and scenario that resulted in the most significant loadings for the conditions studied. Other unit out scenarios or contingencies may also result in constraints to these or other facilities.

Table II.7.1. Pass 0 – Transmission System Impacts with No Enhancements – *PS*

The following table identifies significant ***PS*** thermal constraints without any enhancements to the transmission system.

Area	Limiting Element	Rating (MVA)	Thermal Loadings (%)		Contingency	Scenario	Project
			Without Request	With Request			
PS	None Identified	--	--	--	--	--	--

Scenario Explanations:

1. N/A

Table II.7.2. Pass 1 – Potential Future Transmission System Impacts – *PS*

The following table depicts thermal loadings of ***PS*** transmission facilities that could become potential constraints in future years or with different queuing assumptions but are not overloaded in the study year with all proposed enhancements to the transmission system.

			Thermal Loadings (%)				
Area	**Limiting Element**	**Rating (MVA)**	**Without Request**	**With Request**	**Contingency**	**Scenario**	**Project**
PS	None Identified	--	--	--	--	--	--

Scenario Explanations:

1. N/A

Table II.7.3. Potential Solutions for Identified Problems – *PS*

The following table lists any potential solutions that were identified to address the attributable constraints based on the assumptions used in this study. It must be noted that changes to the load forecast, and/or changes in the expansion plan could occur and would impact the results of this study. In addition, the currently projected improvements to the transmission system were modeled in the cases. Changes to system conditions and/or the transmission expansion plans could also impact the results of this study.

Item	Potential Solution	Estimated Need Date	Planning Level Cost Estimate
--	**None Required**	--	--
PS TOTAL ($2023)			**$0** (1)

(1) Total planning level cost estimate does not include the cost of projects that are included in SERTP Sponsors' expansion plans and are scheduled to be completed by June 1st of the study year. The studied transfer depends on these projects being in-service, and the cost to support the study transfer could be greater than the total shown above if any of these projects are delayed or cancelled.

Southern Balancing Authority Area (SBAA) Results

Study Structure and Assumptions

Transfer Sensitivity	Amount	Source	Sink	Year
South Georgia to North Georgia	1600 MW	South Georgia	North Georgia	2028
Load Flow Cases				
2023 Series Version 1 SERTP Models: Summer Peak				

Transmission System Impacts

The following tables below identify any constraints attributable to the requested transfer for the contingency and scenario that resulted in the most significant loadings for the conditions studied. Other unit out scenarios or contingencies may also result in constraints to these or other facilities.

Table II.8.1. Pass 0 – Transmission System Impacts with No Enhancements – *SBAA*

The following table identifies significant ***SBAA*** thermal constraints without any enhancements to the transmission system.

			Thermal Loadings (%)				
Area	**Limiting Element**	**Rating (MVA)**	**Without Request**	**With Request**	**Contingency**	**Scenario**	**Project**
SBAA	380084 6FAIRBURN 1 230.00 382709 6UNIONCTY B2 230.00 1	602	89.0	106.4	380023 8WANSLEY 500.00 383034 8HEARD CO 500.00 1	1	P1
SBAA	380084 6FAIRBURN 1 230.00 381932 6LINE CREEK 230.00 1	596	90.6	108.2	380023 8WANSLEY 500.00 383034 8HEARD CO 500.00 1	1	P2
SBAA	381932 6LINE CREEK 230.00 382708 6UNIONCTY B1 230.00 1	602	89.9	107.4	380023 8WANSLEY 500.00 383034 8HEARD CO 500.00 1	1	NA*
SBAA	380147 6BRANCH 230.00 381689 6FORREST LK 230.00 1	596	91.4	101.0	380152 6EATONTON SW 230.00 382436 6OASIS 230.00 1	2	P3
SBAA	380152 6EATONTON SW 230.00 382436 6OASIS 230.00 1	602	93.8	103.2	380147 6BRANCH 230.00 381689 6FORREST LK 230.00 1	1	P4
SBAA	384403 3CROOK CK 115.00 385200 3SWAGG 115.00 1	140	73.3	101.5	380010 8FORTSON 500.00 383033 8TENASKA GA 500.00 1	1	P5

*Project not in version 1 models, but is in the 2023 Expansion Plan

Scenario Explanations:

1. McDonough Unit 6 Offline
2. Wansley Unit 7 Offline

Table II.8.2. Pass 1 – Potential Future Transmission System Impacts – *SBAA*

The following table depicts thermal loadings of ***SBAA*** transmission facilities that could become potential constraints in future years or with different queuing assumptions but are not overloaded in the study year with all proposed enhancements to the transmission system.

			Thermal Loadings (%)				
Area	**Limiting Element**	**Rating (MVA)**	**Without Request**	**With Request**	**Contingency**	**Scenario**	**Project**
SBAA	381331 3SIGMAN RD 115.00 381914 3CORNISH MTN 115.00 1	188	88.1	93.9	380096 6CONYERS 230.00 380465 3CONYERS 115.00 1	1	--
SBAA	380288 3FAYTVL RD J 115.00 380289 3MURRAY LK J 115.00 1	140	86.2	92.4	380297 3MORROW B1 115.00 381237 3FT GILLEM 115.00 1	1	--
SBAA	380289 3MURRAY LK J 115.00 382707 3MORROW B3 115.00 1	135	89.4	95.8	380297 3MORROW B1 115.00 381237 3FT GILLEM 115.00 1	1	--
SBAA	380300 3BARNETT RD 115.00 382701 3MTN VIEW B2 115.00 1	138	83.5	92.0	380028 6WELCOME ALL 230.00 382708 6UNIONCTY B1 230.00 1	1	--
SBAA	380734 3BERNHARD RD 115.00 381296 3HARP RD 115.00 1	174	79.5	94.4	380023 8WANSLEY 500.00 383034 8HEARD CO 500.00 1	2	--
SBAA	382480 6YELLOW DIRT 230.00 382485 6HICK LVL B1 230.00 1	776	80.1	93.8	380023 8WANSLEY 500.00 383034 8HEARD CO 500.00 1	2	--
SBAA	382028 3JEFFERSN RD 115.00 382036 3RUSSELL 115.00 1	124	92.0	97.7	380430 3WINDER P B1 115.00 382758 3WINDER P B2 115.00 1	1	--
SBAA	381579 6MULBERRY GR 230.00 381598 6HOPEWELL CH 230.00 1	509	75.9	91.0	380010 8FORTSON 500.00 383033 8TENASKA GA 500.00 1	2	--
SBAA	381579 6MULBERRY GR 230.00 382231 6FORTSON B1 230.00 1	509	78.1	93.1	380010 8FORTSON 500.00 383033 8TENASKA GA 500.00 1	2	--
SBAA	380604 3W PT DAM 115.00 380605 3PITTMAN RD 115.00 1	124	86.9	93.1	380603 3W POINT 2 115.00 384459 3W PT DS 115.00 1	1	--
SBAA	380159 6EATONTON AB 230.00 381689 6FORREST LK 230.00 1	596	88.3	97.9	380152 6EATONTON SW 230.00 382436 6OASIS 230.00 1	1	--
SBAA	380153 3ROBINS SP 115.00 381613 3KAOLIN J 115.00 1	115	83.2	92.5	380317 8ROCKVILLE 500.00 383052 8WARTHEN 500.00 1	1	--
SBAA	380137 6PITTS 230.00 381603 6KATHLEEN 230.00 1	433	65.4	92.0	380013 8BONAIRE 500.00 380014 8HATCH 500.00 1	1	--
SBAA	380137 6PITTS 230.00 383201 6RED PEBBLE 230.00 1	433	76.7	98.0	380013 8BONAIRE 500.00 380014 8HATCH 500.00 1	1	--
SBAA	380159 6EATONTON AB 230.00 382368 6NEWBORN RD 230.00 1	602	85.2	94.6	380152 6EATONTON SW 230.00 382436 6OASIS 230.00 1	1	--
SBAA	384404 3MORR XRD 115.00 384405 3RANBURNE 115.00 1	135	67.4	96.4	380010 8FORTSON 500.00 383033 8TENASKA GA 500.00 1	1	--
SBAA	384404 3MORR XRD 115.00 385200 3SWAGG 115.00 1	140	70.8	98.9	380010 8FORTSON 500.00 383033 8TENASKA GA 500.00 1	1	--
SBAA	384924 3MTVMILTP 115.00 385116 3TUSK TAP 115.00 1	138	75.6	92.3	382500 8RACCOON CK 500.00 384600 8FARLEY 8 500.00 1	1	--
SBAA	384924 3MTVMILTP 115.00 385947 3THURLOW B2 115.00 1	138	80.0	96.7	382500 8RACCOON CK 500.00 384600 8FARLEY 8 500.00 1	1	--
SBAA	317096 6CHATOM 6 230.00 318001 6WAYNE230 230.00 1	335	85.0	90.8	317105 6LOWMAN6 230.00 384586 6W MCTSH6 230.00 1	2	--

Scenario Explanations:

1. McDonough Unit 6 Offline
2. Wansley Unit 7 Offline

Table II.8.3. Potential Solutions for Identified Problems – *SBAA*

The following table lists any potential solutions that were identified to address the attributable constraints based on the assumptions used in this study. It must be noted that changes to the load forecast, and/or changes in the expansion plan could occur and would impact the results of this study. In addition, the currently projected improvements to the transmission system were modeled in the cases. Changes to system conditions and/or the transmission expansion plans could also impact the results of this study.

Item	Potential Solution	Estimated Need Date	Planning Level Cost Estimate
P1	SOCO: Rebuild the line with bundled 200C 1351 ACSS Martin conductor. Replace the 2000A line trap at Union City with 4000A line trap. Replace switches at Union City with 4000A switches. Replace switch at Fairburn #1 with 4000A switch.	Summer 2028	$8,750,000
P2	SOCO: Rebuild the line with bundled 200C 1351 ACSS Martin conductor. Replace switch at Fairburn #1 with 4000A switch. Replace the 1590 AAC jumper at Fairburn #1 with 3-1590 AAC jumper.	Summer 2028	$10,650,000
P3	SOCO: Rebuild the line with 160C 1351 ACSS conductor. Replace the 2-750 AAC jumper at Eatonton Primary with 2-1590 AAC.	Summer 2028	$3,691,000
P4	SOCO: Rebuild the line with 160C 1351 ACSS conductor. Replace the 1590 AAC jumper at Branch with 2-1590 AAC.	Summer 2028	$71,905,000
P5	SOCO: Project to reconductor the line from 397 30/7 ACSR 100°C to 795 26/7 ACSR 100°C from Crooked Creek TS to Indian Creek Metering Station planned for 2029 cannot be advanced.	Summer 2028	--
SBAA TOTAL ($2023)			**$94,990,000** (1)

(1) Total planning level cost estimate does not include the cost of projects that are included in SERTP Sponsors' expansion plans and are scheduled to be completed by June 1st of the study year. The studied transfer depends on these projects being in-service, and the cost to support the study transfer could be greater than the total shown above if any of these projects are delayed or cancelled.

Tennessee Valley Authority Balancing Authority Area (TVA) Results

Study Structure and Assumptions

Transfer Sensitivity	Amount	Source	Sink	Year
South Georgia to North Georgia	1600 MW	South Georgia	North Georgia	2028
Load Flow Cases				
2023 Series Version 1 SERTP Models: Summer Peak				

Transmission System Impacts

The following tables below identify any constraints attributable to the requested transfer for the contingency and scenario that resulted in the most significant loadings for the conditions studied. Other unit out scenarios or contingencies may also result in constraints to these or other facilities.

Table II.9.1. Pass 0 – Transmission System Impacts with No Enhancements – *TVA*

The following table identifies significant ***TVA*** thermal constraints without any enhancements to the transmission system.

			Thermal Loadings (%)				
Area	**Limiting Element**	**Rating (MVA)**	**Without Request**	**With Request**	**Contingency**	**Scenario**	**Project**
TVA	Charleston-Hiwassee River 161 kV	289.5	108.7	118.6	Sequoyah-Bradley 500 kV	1	1
TVA	Hiwassee River-East Cleveland 161 kV	289.5	99.6	109.6	Sequoyah-Bradley 500 kV	1	1
TVA	Chickamauga-Hawthorne 161 kV	226.7	103.2	108.4	Bradley-Conasauga 500 kV	1	2
TVA	Chickamauga-Hawthorne 161 kV	226.7	103.2	108.4	Conasauga-Mosteller 500 kV	1	2

Scenario Explanations:

1. No Unit Out of Service

Table II.9.2. Pass 1 – Potential Future Transmission System Impacts – *TVA*

The following table depicts thermal loadings of ***TVA*** transmission facilities that could become potential constraints in future years or with different queuing assumptions but are not overloaded in the study year with all proposed enhancements to the transmission system.

			Thermal Loadings (%)				
Area	**Limiting Element**	**Rating (MVA)**	**Without Request**	**With Request**	**Contingency**	**Scenario**	**Project**
TVA	Sequoyah-Concord 161 kV	350.0	89.7	97.2	Sequoyah-Bradley 500 kV	1	
TVA	Trafford-Fultondale 115 kV	92.8	90.5	95.9	East Point 500/161 kV	1	
TVA	Trafford-Fultondale 115 kV	92.8	90.2	95.6	East Point-Fairview Tap 161 kV	1	
TVA	Oglethorpe 161/230 kV	289.5	88.2	95.0	Concord 161/230 kV	1	
TVA	Oglethorpe 161/230 kV	289.5	88.0	94.8	West Ringgold-Concord 230 kV	1	
TVA	Trafford-Fultondale 115 kV	92.8	88.9	94.2	Fairview Tap-Arab 161 kV	1	
TVA	Trafford-Fultondale 115 kV	92.8	88.0	93.5	Lowndes-Valley View 500 kV	1	
TVA	Trafford-Fultondale 115 kV	92.8	87.0	92.0	Decatur-Priceville Tap 161 kV	1	
TVA	Trafford-Fultondale 115 kV	92.8	83.3	91.7	Arab-Guntersville 161 kV	1	
TVA	Trafford-Fultondale 115 kV	92.8	85.7	90.8	Priceville Tap-Winton 161 kV	1	

Scenario Explanations:

1. No Unit Out of Service

Table II.9.3. Potential Solutions for Identified Problems – *TVA*

The following table lists any potential solutions that were identified to address the attributable constraints based on the assumptions used in this study. It must be noted that changes to the load forecast, and/or changes in the expansion plan could occur and would impact the results of this study. In addition, the currently projected improvements to the transmission system were modeled in the cases. Changes to system conditions and/or the transmission expansion plans could also impact the results of this study.

Item	Potential Solution	Estimated Need Date	Planning Level Cost Estimate
1	Upgrade terminal equipment at Charleston and East Cleveland 161 kV substations.	2028	$775,000
2	Upgrade terminal equipment at Chickamauga Hydro Plant.	2028	$150,000
TVA TOTAL ($2023)			**$925,000** (1)

(1) Total planning level cost estimate does not include the cost of projects that are included in SERTP Sponsors' expansion plans and are scheduled to be completed by June 1st of the study year. The studied transfer depends on these projects being in-service, and the cost to support the study transfer could be greater than the total shown above if any of these projects are delayed or cancelled.