South Carolina Regional Transmission Planning

Stakeholder Meeting

Teams Meeting

October 30, 2024 10:00am – 11:00am

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Purpose and Goals for Today's Meeting

- Review and Discuss the Initial Results of the Stakeholder Selected Economic Power Transfer Sensitivities

- FERC Order 1920 Update

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Economic Transmission Planning Studies

Alex Morrison (DESC)
Sarah Arrants (SCPSA)
Emily Morgan (SCPSA)

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Study Methodology

- Linear transfer analysis using PowerGem's TARA Software. This analysis includes select single contingencies while monitoring DESC's and Santee Cooper's internal Transmission Systems.

- A Thermal and Voltage analysis using PowerGem's TARA and/or PowerWorld Simulator Software. This analysis of DESC's and Santee Cooper's internal transmission systems included single contingencies, double contingencies and selected bus outages with and without the simulated transfer in effect. However, this analysis is not a complete testing of NERC TPL 001 standard.

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Case Development

- The most current LTWG models were used for the systems external to DESC and SCPSA as a starting point for the study case(s).
- The study case(s) include the detailed internal models for DESC and SCPSA. The study case(s) include new transmission additions currently planned to be in-service for the given year (i.e. in-service by winter 2020 for 2020W case).
- Base Cases were used to build the transfer cases using the requested economic study requests.

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Study Results

- DESC and SCPSA have reported results based on thermal loading and voltage violations in accordance with their planning criteria.

- Overloaded facilities that had a low response to the requested transfer were excluded and problems or issues identified that are local area in nature were also excluded.

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2024 Economic Planning Scenarios

Selected by Stakeholders During the May 23, 2024 Meeting

#	Source	Sink	Amount (MW)	Year	Study Conditions	Study Request
1	SOCO/DUKE	SCPSA	1200/1200	2033S	Retire Cross	SCPSA PM
2	SOCO/DUKE	SCPSA	1200/1200	2033/34W	Retire Cross	Southern Renewables
3	SOCO/DUKE	SCPSA	1200/1200	2028S	Reduce Sys Gen	Southern Renewables
4	SOCO/DUKE	SCPSA	1200/1200	2028/29W	Reduce Sys Gen	Southern Renewables
5	SOCO	DESC	300	2025S	Reduce Sys Gen	DESC PM

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Power Flow Base Cases

- 2024 LTWG Series PSSE Models with DESC and SCPSA 2024 Internal Model Updates
  - 2025 Summer
  - 2029 Summer
  - 2029/30 Winter
  - 2034 Summer
  - 2034/35 Winter

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Preliminary Result Components

- The following information is preliminary and subject to change pursuant to additional analyses.
- The following information does not represent a commitment to proceed with the recommended enhancements nor implies that the recommended enhancements could be implemented by the study dates.
- These potential solutions only address constraints identified within the respective areas that comprise the SCRTP. Balancing Areas external to the SCRTP were not monitored, which could result in additional limitations and required system enhancements.

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Scenario 1 & 2

2033 Summer/Winter
DUK/SOCO – SCPSA 1200/1200 MW

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Preliminary Results – SCPSA

SOCO – SC 1200 MW & Duke – SC 1200 MW

2033S & 203334W Study

Constrained Facility	% Base Loading	% Study Loading	Contingency	Project Solution
Purrysburg – McIntosh #1/2 230 kV Line	90%	99%	Loss of Purrysburg – McIntosh #1/2 230 kV Line	SCPSA2, SCPSA3, SCPSA4, SCPSA10
Low Voltages in the Bluffton Area	0.94 p.u.	0.86 p.u.	Loss of Bluffton – Purrysburg 230 kV Line	SCPSA2, SCPSA3, SCPSA4, SCPSA5
Indian Field – Harleyville 115 kV Line	43%	110%	Loss of Indian Field – Wassamassaw 230 kV Line and St. George – Harleys Bridge 115 kV Line	SCPSA14
St. George – St. George (DESC) #1/2 115 kV Line	57%	131%	Loss of St. George #1/2 115 kV Bus	SCPSA2, SCPSA3, SCPSA4
Low Voltages on the Pinewood – Sandy Run 115 kV Line	0.93 p.u.	0.88 p.u	Loss of Sandy Run 115 kV Bus #1 or #2	SCPSA5, SCPSA9
Darlington – Lake City 69 kV Line	85%	100%	Lake City 230 kV Bus Tie Breaker Failure Operation	SCPSA1
Indian Field – St. George #1/2 115 kV Line	27%	113%	Loss of Indian Field – Varnville 230 kV Line and Indian Field – St. George #1/2 115 kV Line	SCPSA9

**Only select contingencies are shown*

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Preliminary Results – SCPSA

SOCO – SC 1200 MW & Duke – SC 1200 MW

2033S & 203334W Study

Constrained Facility	% Base Loading	% Study Loading	Contingency	Project Solution
Bluffton – Purrysburg 230 kV Line	103%	128%	Loss of Jasper – Yemassee #2 230 kV Line and Okatie – Yemassee 230 kV Line	SCPSA8
Purrysburg – Varnville 115 kV Line	85%	118%	Loss of Jasper – Yemassee #2 230 kV Line and Okatie – Yemassee 230 kV Line	SCPSA8
Bluffton – Yemassee 230 kV Line	85%	120%	Loss of Jasper – Yemassee #2 230 kV Line and Okatie – Yemassee 230 kV Line	SCPSA8
Bluffton 230 kV Bus Tie	91%	118%	Loss of Jasper – Yemassee #2 230 kV Line and Okatie – Yemassee 230 kV Line	SCPSA8
Varnville – Yemassee 230 kV Line	64%	129%	Loss of Bluffton – Purrysburg 230 kV Line and Yemassee – Yemassee(DESC) 230 kV Line	SCPSA13
St. George – St. George (DESC) 115 kV #1 & #2 115 kV Lines	59%	126%	Loss of Bluffton – Purrysburg 230 kV Line and Yemassee – Yemassee(DESC) 230 kV Line	SCPSA8
Purrysburg – McIntosh #1/2 230 kV Line	93%	133%	Loss of Purrysburg – McIntosh #1/2 230 kV Line and Jasper	SCPSA10

**Only select contingencies are shown*

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Preliminary Results – SCPSA

SOCO – SC 1200 MW & Duke – SC 1200 MW

2033S & 203334W Study

Constrained Facility	% Base Loading	% Study Loading	Contingency	Project Solution
Purrysburg – Jasper #1/2 230 kV Line	71%	102%	Loss of Purrysburg – Jasper #1/2 230 kV Line and Jasper	SCPSA8
Newberry 230-69 kV Transformer #1/2	92%	124%	Loss of Newberry 230-69 kV Transformer #1/2 and Pomaria – Newberry 230 kV Line	SCPSA6
Bennettsville 230-69 kV Transformer #1/2	100%	118%	Loss of Bennettsville 230-69 kV Transformer #1/2 and Bennettsville – Marion 230 kV Line	SCPSA7
Blythewood 230-69 kV Transformer #1/2	114%	131%	Loss of Blythewood 230-69 kV Transformer #1/2 and Blythewood - Lugoff 230 kV Line	SCPSA11, SCPSA12
Columbia – Lyles (DESC) 115 kV Line	90%	138%	Loss of Aiken – Toolbeck (DESC) 230 kV Line and Newberry – Batesburg 230 kV Line	SCPSA15, SCPSA16
Briggs – Thurmond 115 kV Line	79%	115%	Loss of SRS – Vogtle 230 kV Line and Toolebeck – South Augusta 230 kV Line	SCPSA5, SCPSA9
Pomaria – Newberry 230 kV Line	67%	103%	Loss of Newport – VCS 230 kV Line and VCS	SCPSA5, SCPSA9
Briggs – Aiken 115 kV Line	78%	110%	Loss of Aiken – Toolebeck 230 kV Line and Newberry – Batesburg 230 kV Line	SCPSA2, SCPSA3, SCPSA4, SCPSA5

**Only select contingencies are shown*

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Preliminary Results – SCPSA

SOCO – SC 1200 MW & Duke – SC 1200 MW

2033S & 203334W Study

Project	Description	Cost ($M)	Duration (Months)
SCPSA1	Replace Darlington – Lake City 69 kV Line Limiting Elements	$5.5	47
SCPSA2	Acquire new property and construct a new Barnwell 230 kV Switching Station configured for high reliability	$80.3	65
SCPSA3	Construct a new 230 kV Line from Barnwell 230 kV Sw Sta to Southern Companies Vogtle 500-230 kV Substation with bundled 1272 ACSR	$265.8	70
SCPSA4	Construct a new 230 kV Line from Barnwell 230 kV Sw Sta to Varnville 230 -115 kV Substation with bundled 1272 ACSR	$277.2	82
SCPSA5	Construct a new 230 kV Line from Barnwell 230 kV Sw Sta to Orangeburg 230 - 115-69 kV Substation with bundled 1272 ACSR	$303.9	65
SCPSA6	Replace Newberry 230-69 kV 100 MVA Transformers with 150 MVA Transformers	$44.6	53
SCPSA7	Replace Bennettsville 230-69 kV Transformers 100 MVA Transformers with 150 MVA Transformers	$44.6	53
SCPSA8	Construct a new 230 kV Line from Purrysburg 230-115 kV Substation to Varnville 230-115 kV Substation with bundled 1272 ACSR	$420.4	94
SCPSA9	Construct a new 230 kV Line from the Indian Field 230-115 kV Substation to the Orangeburg 230-115-69 kV Substation	$180.7	58

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Preliminary Results – SCPSA

SOCO – SC 1200 MW & Duke – SC 1200 MW

2033S & 203334W Study

Project	Description	Cost ($M)	Duration (Months)
SCPSA10	Reconductor the Purrysburg – McIntosh #1 & #2 230 kV Lines with high temperature conductor.	Contingent Facility	
SCPSA11	Acquire new property and construct a new Cedar Knoll 230-69 kV Substation in a standard reliability scheme. Fold the existing Pomaria – Sandy Run 230 kV Line, Blythewood – Pomaria 69 kV Line, and Blythewood – Columbia 69 kV Line into the new substation.	$74.4	46
SCPSA12	Construct a new 230 kV Line from the Cedar Knoll 230-69 kV Substation to the Blythewood 230-69 kV Substation with bundled 1272	$47	53
SCPSA13	Rebuild the Yemassee – Varnville 230 kV Line as twin circuits with bundled 1272 ACSR	$73.6	58
SCPSA14	Construct a new 230 kV Line from the Indian Field 230-115 kV Substation to the Wassamassaw 230-115 kV Substation.	$208.8	46
SCPSA15	Move the Lexington delivery point from the Columbia – Lyles 115 kV Line to a new terminal at the Columbia 115-69 kV Substation	$3.9	35
SCPSA16	Rebuild the Columbia – Lyles 115 kV Line with 795 ACSR	$52.2	29
	Total	$2.08B	

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Preliminary Results – DESC

SOCO – SC 1200 MW & Duke – SC 1200 MW

2033S & 2033/34W Study

Constrained Facility	% Base Loading	% Study Loading	Contingency	Project
Okatie – McIntosh 115 kV SOCO Tie	100.3	136.7	Open Purrysburg – McIntosh 230 kV #1 and #2	DESC5
St. George – St. George 115 kV #1 SCPSA Tie	<90	133.4	Open St. George – St. George 115 kV #2 SCPSA Tie	DESC1
Okatie – Yemassee 230 kV	100.8	126.2	Open Bluffton – Purrysburg 230 kV and Jasper – Yemassee 230 kV #2	SC
Lyles – Columbia 115 kV SCPSA Tie	<90	124.5	Open Toolebeck – Aiken 230 kV SCPSA Tie and Batesburg – Newberry 230 kV	DESC6
Jasper – Yemassee 230 kV #2	98.1	123.6	Open Bluffton – Purrysburg 230 kV and Okatie – Yemassee 230 kV	SC
Faber Place Bus Sections	<90	121.5	Open Williams – Charity 230 kV SCPSA Tie and Carnes – Mateeba 230 kV	DESC7

*DESC has Op Guides to reduce some base case overloads that would not be relied on in scenarios 1-2.
**Potentially overloaded or heavily loaded facilities that had a low response to the requested transfer were excluded and problems or issues identified that are local area in nature were excluded.
***DESC mitigating projects assume inclusion of SCPSA mitigating projects in scenarios 1-2.

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Preliminary Results – DESC

SOCO – SC 1200 MW & Duke – SC 1200 MW

2033S & 2033/34W Study

Constrained Facility	% Base Loading	% Study Loading	Contingency	Project
VCS1 – Newport 230 kV DEC Tie	<90	120.9	Open VCS1 GSU and Oconee – S Hall 500 kV Line	DESC2
Okatie – Yemassee 115 kV	<90	115.5	Open Purrysburg - McIntosh 230 kV #1 and #2	DESC5
Jasper – Purrysburg 230kV #2 SCPSA Tie	<90	111.8	Open all Jasper units and Jasper – Purrysburg 230 kV #1 SCPSA Tie	SC
Jasper – Purrysburg 230kV #1 SCPSA Tie	<90	111.7	Open all Jasper units and Jasper – Purrysburg 230 kV #2 SCPSA Tie	SC
Okatie Bus Ties	<90	109.4	Open Jasper – Yemassee 230 kV #2 and Jasper – Okatie 230 kV #1	SC
Graniteville #2 – Sand Bar Ferry 115 kV SOCO Tie	<90	103.2	Open Toolebeck – South Augusta 230 kV SOCO Tie and SRS – Vogtle 230 kV SOCO Tie	SC

*DESC has Op Guides to reduce some base case overloads that would not be relied on in scenarios 1-2.
**Potentially overloaded or heavily loaded facilities that had a low response to the requested transfer were excluded and problems or issues identified that are local area in nature were excluded.
***DESC mitigating projects assume inclusion of SCPSA mitigating projects in scenarios 1-2.

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Preliminary Results – DESC

SOCO – SC 1200 MW & Duke – SC 1200 MW

2033S & 2033/34W Study

Constrained Facility	% Base Loading	% Study Loading	Contingency	Project
Dawson – Faber Place 230 kV	<90	103	Open Church Creek – Ritter 230 kV and Dawson – Church Creek 230 kV	DESC3
Church Creek – Ritter 230 kV	<90	101.4	Open Canadys – Dawson 230 kV #1 and #2	DESC4
Barnwell – SRS 115 kV	<90	99.7	Open Canadys – SRS 230 kV and Urquhart – Graniteville 230 kV	SC
Jasper Bus Ties	<90	97	Open Jasper – Purrysburg 230 kV #2 SCPSA Tie and Jasper – Okatie 230 kV #1	SC
Jasper – Okatie 230 kV #2	<90	95	Open Jasper – Yemassee 230 kV #2 and Jasper – Okatie 230 kV #1	SC
Low Voltage in Southern Area	>0.95 p.u.	0.928 p.u. (AVG)	Open Bus at Williams	SC

*DESC has Op Guides to reduce some base case overloads that would not be relied on in scenarios 1-2.
**Potentially overloaded or heavily loaded facilities that had a low response to the requested transfer were excluded and problems or issues identified that are local area in nature were excluded.
***DESC mitigating projects assume inclusion of SCPSA mitigating projects in scenarios 1-2.

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Preliminary Results – DESC

SOCO – SC 1200 MW & Duke – SC 1200 MW

2033S & 2033/34W Study

Project	Description	Cost ($M)	Duration (Months)
DESC1	Upgrade limiting elements on St. George – St. George 115 kV #1 SCPSA Tie.	0.045	18
DESC2	Upgrade VCS1 – Newport 230 kV to B-1272 ACSR.	15.304	30
DESC3	Upgrade Dawson – Faber Place 230 kV to B-1272 ACSR.	57.600	48
DESC4	Upgrade Church Creek – Ritter 230 kV to B-1272 ACSR.	55.001	54
DESC5	Construct 9% series reactor on Okatie – McIntosh 115 kV SOCO Tie.	4.727	36
DESC6	Upgrade limiting elements on Lyles – Columbia 115 kV SCPSA Tie.	0.039	18
DESC7	Upgrade Faber Place Bus Sections.	0.105	24
	TOTAL	132.821	54

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Scenario 3 & 4

2028 Summer/Winter
DUK/SOCO – SCPSA 1200/1200 MW

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Preliminary Results – SCPSA

SOCO – SC 1200 MW & Duke – SC 1200 MW

2028S & 202829W Study

Constrained Facility	% Base Loading	% Study Loading	Contingency	Project
Purrysburg – McIntosh #1/2 230kV Line	94%	116%	Loss of Purrysburg – McIntosh #1/2 230 kV Line and Loss of Jasper	SCPSA2, SCPSA3, SCPSA4, SCPSA10
Briggs Road – Thurmond 115kV Line	77%	108%	Loss of Toolebeck 230 kV Bus	SCPSA2, SCPSA3, SCPSA4
Darlington – Lake City 69 kV Line	83%	100%	Lake City 230 kV Bus Tie Breaker Failure Operation	SCPSA1
Purrysburg – Varnville 115 kV Line	76%	115%	Loss of Okatie – Yemassee 230 kV Line and Jasper – Yemassee 230 kV #2 Line	SCPSA8
Bluffton – Purrysburg 230 kV Line	81%	104%	Loss of Okatie – Yemassee 230 kV Line and Jasper – Yemassee 230 kV #2 Line	SCPSA8
Bluffton – Yemassee 230 kV Line	77%	109%	Loss of Okatie – Yemassee 230 kV Line and Jasper – Yemassee 230 kV #2 Line	SCPSA8
Blythewood 230-69 kV Transformer #1/2	113%	126%	Loss of Blythewood Transformer #1/2 and Blythewood – Lugoff 230 kV Line	SCPSA11, SCPSA12
Newberry 230-69 kV Transformer #1/2	102%	124%	Loss of Newberry Transformer #1/2 and Newberry – Pomaria 230 kV Line	SCPSA6
Columbia – Lyles (DESC) 115 kV Line	89%	123%	Loss of Newberry – Batesburg 230 kV Line and Aiken #3 – Toolebeck (DESC) 230 kV Tie	SCPSA15, SCPSA16

**Only select contingencies are shown*

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Preliminary Results – SCPSA

SOCO – SC 1200 MW & Duke – SC 1200 MW
2028S & 202829W Study

Constrained Facility	% Base Loading	% Study Loading	Contingency	Project
St. George – St. George (DESC) #1 115 kV Line	60%	123%	Loss of St. George #2 115 kV Bus	SCPSA2, SCPSA3, SCPSA4
Briggs Road – Aiken 115 kV Line	79%	105%	Loss of Newberry – Batesburg 230 kV Line and Aiken #3 – Toolebeck (DESC) 230 kV Tie	SCPSA2, SCPSA3, SCPSA4
Indian Field – Harleyville 115 kV Line	48%	107%	Loss of Indian Field – Wassamassaw 230 kV Line and St. George – Harleys Bridge 115 kV Line	SCPSA14
Briggs Road – Thurmond 115 kV Line	82%	131%	Loss of SRS – Vogtle 230 kV Line and Toolebeck – South Augusta 230 kV Line	SCPSA5, SCPSA9

**Only select contingencies are shown*

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Preliminary Results – SCPSA

SOCO – SC 1200 MW & Duke – SC 1200 MW

2028S & 202829W Study

Project	Description	Cost ($M)	Duration (Months)
SCPSA1	Replace Darlington – Lake City 69 kV Line Limiting Elements	$5.5	47
SCPSA2	Acquire new property and construct a new Barnwell 230 kV Switching Station configured for high reliability	$80.3	65
SCPSA3	Construct a new 230 kV Line from Barnwell 230 kV Sw Sta to Southern Companies Vogtle 500-230 kV Substation with bundled 1272 ACSR	$265.8	70
SCPSA4	Construct a new 230 kV Line from Barnwell 230 kV Sw Sta to Varnville 230 -115 kV Substation with bundled 1272 ACSR	$277.2	82
SCPSA5	Construct a new 230 kV Line from Barnwell 230 kV Sw Sta to Orangeburg 230 - 115-69 kV Substation with bundled 1272 ACSR	$303.9	65
SCPSA6	Replace Newberry 230-69 kV 100 MVA Transformers with 150 MVA Transformers	$44.6	53
SCPSA8	Construct a new 230 kV Line from Purrysburg 230-115 kV Substation to Varnville 230-115 kV Substation with bundled 1272 ACSR	$420.4	94
SCPSA9	Construct a new 230 kV Line from the Indian Field 230-115 kV Substation to the Orangeburg 230-115-69 kV Substation	$180.7	58
SCPSA10	Reconductor the Purrysburg – McIntosh #1 & #2 230 kV Lines with high temperature conductor.	Contingent Facility	

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Preliminary Results – SCPSA

SOCO – SC 1200 MW & Duke – SC 1200 MW

2028S & 202829W Study

Project	Description	Cost ($M)	Duration (Months)
SCPSA11	Acquire new property and construct a new Cedar Knoll 230-69 kV Substation in a standard reliability scheme. Fold the existing Pomaria – Sandy Run 230 kV Line, Blythewood – Pomaria 69 kV Line, and Blythewood – Columbia 69 kV Line into the new substation.	$74.4	46
SCPSA12	Construct a new 230 kV Line from the Cedar Knoll 230-69 kV Substation to the Blythewood 230-69 kV Substation with bundled 1272	$47	53
SCPSA14	Construct a new 230 kV Line from the Indian Field 230-115 kV Substation to the Wassamassaw 230-115 kV Substation.	$208.8	46
SCPSA15	Move the Lexington delivery point from the Columbia – Lyles 115 kV Line to a new terminal at the Columbia 115-69 kV Substation	$3.9	35
SCPSA16	Rebuild the Columbia – Lyles 115 kV Line with 795 ACSR	$52.2	29
	Total	$1.96B	

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Preliminary Results – DESC

SOCO – SC 1200 MW & Duke – SC 1200 MW

2028S & 2028/29W Study

Constrained Facility	% Base Loading	% Study Loading	Contingency	Project
Dawson – Church Creek 230 kV	99.1	136.4	Open Church Creek - Ritter 230 kV and Dawson – Faber Place 230 kV	DESC11
Graniteville #2 – Sand Bar Ferry 115 kV SOCO Tie	<90	122.9	Open Toolebeck – South Augusta 230 kV SOCO Tie and SRS – Vogtle 230 kV SOCO Tie	DESC2
Okatie – McIntosh 115 kV SOCO Tie	<90	120.2	Open Purrysburg – McIntosh 230 kV #1 and #2	DESC4
Okatie – Yemassee 230 kV	<90	119.8	Open Bluffton – Purrysburg 230 kV and Jasper – Yemassee 230 kV #2	SC
Jasper – Yemassee 230 kV #2	<90	116.7	Open Bluffton – Purrysburg 230 kV and Okatie – Yemassee 230 kV	SC
St. George – St. George 115 kV #1 SCPSA Tie	<90	116.32	Open St. George – St. George 115 kV #2 SCPSA Tie	DESC1
Faber Place Bus Sections	<90	112.6	Open Williams – Charity 230 kV SCPSA Tie and Carnes – Mateeba 230 kV	DESC3

*DESC has Op Guides to reduce some base case overloads that would not be relied on in scenarios 3-4.
**Potentially overloaded or heavily loaded facilities that had a low response to the requested transfer were excluded and problems or issues identified that are local area in nature were excluded.
***DESC mitigating projects assume inclusion of SCPSA mitigating projects in scenarios 3-4.

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Preliminary Results – DESC

SOCO – SC 1200 MW & Duke – SC 1200 MW

2028S & 2028/29W Study

Constrained Facility	% Base Loading	% Study Loading	Contingency	Project
Lyles – Columbia 115 kV SCPSA Tie	<90	112	Open Toolebeck – Aiken 230 kV SCPSA Tie and Batesburg – Newberry 230 kV	DESC9
Okatie – Yemassee 115 kV	<90	104.3	Open Purrysburg – McIntosh 230 kV #1 and #2	DESC4
VCS1 – Newport 230 kV DEC Tie	<90	102.6	Open VCS1 GSU and Oconee – S Hall 500 kV Line	DESC5
Barnwell – SRS 115kV	<90	101.2	Open Canadys – SRS 230 kV and Urquhart – Graniteville 230 kV	DESC10
Okatie BusTies	<90	100.8	Open Jasper – Yemassee 230 kV #2 and Jasper – Okatie 230 kV #1	SC
Hooks – Thurmond 115kV SEPA Tie	<90	100.7	Open Toolebeck – South Augusta 230 kV SOCO Tie and Briggs Rd – Clarks Hill 115 kV	DESC6

*DESC has Op Guides to reduce some base case overloads that would not be relied on in scenarios 3-4.
**Potentially overloaded or heavily loaded facilities that had a low response to the requested transfer were excluded and problems or issues identified that are local area in nature were excluded.
***DESC mitigating projects assume inclusion of SCPSA mitigating projects in scenarios 3-4.

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Preliminary Results – DESC

SOCO – SC 1200 MW & Duke – SC 1200 MW

2028S & 2028/29W Study

Constrained Facility	% Base Loading	% Study Loading	Contingency	Project
Church Creek – Ritter 230 kV	<90	100.5	Open Canadys – Dawson 230 kV #1 and #2	DESC7
Dawson – Faber Place 230 kV	<90	99.6	Open Church Creek – Ritter 230 kV and Dawson – Church Creek 230 kV	DESC8
Jasper – Purrysburg 230 kV #2 SCPSA Tie	<90	99.2	Open all Jasper units and Jasper – Purrysburg 230 kV #1 SCPSA Tie	SC
Jasper – Purrysburg 230 kV #1 SCPSA Tie	<90	99	Open all Jasper units and Jasper – Purrysburg 230 kV #2 SCPSA Tie	SC
SRS 336 MVA Bank #1	<90	96.5	Open Urquhart – Graniteville 230 kV and SRS 336 MVA Bank #2	DESC10
SRS 336 MVA Bank #2	<90	96.5	Open Urquhart – Graniteville 230 kV and SRS 336 MVA Bank #1	DESC10
Low Voltage in Southern Area	>0.95 p.u.	0.903 p.u. (AVG)	Open Bus at Williams	DESC7, DESC8, DESC10, DESC11

*DESC has Op Guides to reduce some base case overloads that would not be relied on in scenarios 3-4.
**Potentially overloaded or heavily loaded facilities that had a low response to the requested transfer were excluded and problems or issues identified that are local area in nature were excluded.
***DESC mitigating projects assume inclusion of SCPSA mitigating projects in scenarios 3-4.

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Preliminary Results – DESC

SOCO – SC 1200 MW & Duke – SC 1200 MW

2028S & 2028/29W Study

Project	Description	Cost ($M)	Duration (Months)
DESC1	Upgrade limiting elements on St. George – St. George 115 kV #1 SCPSA Tie.	0.045	18
DESC2	Add 6% series reactor to Graniteville #2 – Sand Bar Ferry 115 kV SOCO Tie.	4.567	36
DESC3	Upgrade Faber Place Bus Sections.	0.105	24
DESC4	Construct 9% series reactor on Okatie – McIntosh 115 kV SOCO Tie.	4.727	36
DESC5	Upgrade VCS1 – Newport 230 kV to 1272 ACSR.	12.000	30
DESC6	Upgrade breaker drops at Hooks to 1272 ACSR.	0.030	18
DESC7	Upgrade Church Creek – Ritter 230 kV to B-1272 ACSR.	55.001	54
DESC8	Upgrade Dawson – Faber Place 230 kV to B-1272 ACSR.	57.600	48
DESC9	Upgrade limiting elements on Lyles – Columbia 115 kV SCPSA Tie.	0.039	18
DESC10	Rebuild Canadys – SRS 230 kV as double circuit with 1272 ACSR.	83.000	60
	TOTAL	217.114	60

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Preliminary Results – DESC

SOCO – SC 1200 MW & Duke – SC 1200 MW
2028S & 2028/29W Study

Project	Description	Cost ($M)	Duration (Months)
DESC11	Upgrade Dawson – Church Creek 230 kV to B-1272 ACSR.	-	50
	TOTAL	217.114	60

*DESC11 is an existing planned DESC project that will not be in service by Summer 2028.

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Scenario 5

2025 Summer
SOCO – DESC 300 MW

Preliminary Results – SCPSA

SOCO – DESC 300 MW

2025S Study

Constrained Facility	% Base Loading	% Study Loading	Contingency	Project
Purrysburg – McIntosh 230 kV #1/2 Line	103%	107%	Loss of Purrysburg – McIntosh 230 kV #1/2 and Loss of Jasper	SCPSA10

Preliminary Results – SCPSA

SOCO – DESC 300 MW

2025S Study

Project	Description	Cost ($M)	Duration (Months)
SCPSA10	Reconductor the Purrysburg – McIntosh #1 & #2 230 kV Lines with high temperature conductor.	Contingent Facility	

Preliminary Results – DESC

SOCO – DESC 300 MW

2025 Summer Study

Constrained Facility	% Base Loading	% Study Loading	Contingency	Project
Ritter – Yemassee 230 kV	111.6	116.6	Open Mateeba – Yemassee 230 kV and Canadys – Yemassee 230 kV	DESC1
Canadys – Yemassee 230 kV	111.7	118	Open Ritter – Yemassee 230 kV and Mateeba – Yemassee 230 kV	DESC1 & DESC2
Jasper – Okatie 230 kV	108.5	112.4	Open Bluffton – Purrysburg 230 kV and Jasper – Yemassee 230 kV #2	DESC3
Graniteville #2 – Sand Bar Ferry 115 kV SOCO Tie	103.4	110.6	Open Toolebeck – South Augusta 230 kV SOCO Tie and SRS – Vogtle 230 kV SOCO Tie	OpGuide
Jasper – Yemassee 230 kV #2	105.7	109.7	Open Bluffton – Purrysburg 230 kV and Jasper – Okatie 230 kV	OpGuide
Yemassee Bus Ties	103.1	105.6	Open Bluffton – Purrysburg 230 kV and Jasper – Yemassee 230 kV #2	DESC1

*Potentially overloaded or heavily loaded facilities that had a low response to the requested transfer were excluded and problems or issues identified that are local area in nature were excluded.

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Preliminary Results – DESC

SOCO – DESC 300 MW

2025 Summer Study

Constrained Facility	% Base Loading	% Study Loading	Contingency	Project
Okatie – Yemassee 230 kV	98	101.7	Open Bluffton – Purrysburg 230 kV and Jasper – Yemassee 230 kV #2	OpGuide
Faber Place Bus Sections	100.9	102.6**	Open Carnes 230 kV bus	DESC5
Church Creek – Faber Place 115 kV	94.2	99.8**	Open Faber Place 115-230 kV Bank #1 and #2	DESC4
Church Creek – Ritter 230 kV	<90	102**	Open Yemassee – Mateeba 230 kV and Canadys – Yemassee 230 kV	DESC2

*Potentially overloaded or heavily loaded facilities that had a low response to the requested transfer were excluded and problems or issues identified that are local area in nature were excluded.
**Overloaded after adding DESC1 to the transfer case.

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Preliminary Results – DESC

SOCO – DESC 300 MW

2025 Summer Study

Project	Description	Cost ($M)	Duration (Months)
DESC1	Construct Yemassee– Ritter 230 kV #1 & #2 SPDC with B-1272.	-	19
DESC2	Build Canadys – Ritter 230 kV B-1272 ACSR.	17.159	42
DESC3	Construct Jasper – Okatie 230 kV #2.	-	14
DESC4	Church Creek – Faber Place – Charleston Transmission: Add 230 kV Line.	-	30
DESC5	Upgrade Faber Place Bus Sections.	0.105	24
	TOTAL	17.264	42

*DESC1, DESC3, and DESC4 are existing planned DESC projects that will not be in service by Summer 2025.

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2024 Economic Planning Scenarios

Linear Transfer Results – DESC & SCPSA

#	Source	Sink	Amount (MW)	Year	FCITC Limit	Limit/Contingency
1	SOCO/DEC	SC	1200/1200	2033S	No Limit Found	N/A
2	SOCO/DEC	SC	1200/1200	2033/34W	No Limit Found	N/A
3	SOCO/DEC	SC	1200/1200	2028S	No Limit Found	N/A
4	SOCO/DEC	SC	1200/1200	2028/29W	No Limit Found	N/A
5	SOCO	DESC	300	2025S	No Limit Found	N/A

*All projects identified in thermal and voltage analysis were included in the Linear Transfer Analysis.

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FERC Order 1920 Update

FERC ORDER 1920

- Landmark Order requiring major changes to regional transmission planning process and cost allocation
- Build on Orders 890 and 1000
- Compliance deadline June 12, 2025

FERC ORDER 1920 Highlights

- 20-year planning horizon
- At least three “Long-Term Scenarios” that incorporate various assumptions using best available data inputs
- Seven required benefits for potential long-term regional transmission facilities:
  1. avoiding or deferring reliability transmission infrastructure replacement
  2. reducing loss of load probability or planning reserve margin
  3. increasing production cost savings
  4. reducing transmission energy losses
  5. reducing congestion due to transmission outages
  6. mitigating of extreme weather events and unexpected system conditions
  7. increasing capacity cost benefits by reducing peak energy losses

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FERC ORDER 1920 Highlights

- one or more ex ante cost allocation methods to allocate the costs of facilities (or a portfolio of facilities) selected as solutions to long-term transmission needs.

FERC ORDER 1920

- SCRTP plans to merge with SERTP as part of compliance with Order 1920
- Plans have been announced on SCRTP and SERTP websites
- Compliance efforts will be conducted jointly as part of SERTP compliance process
- All updates provided by means of Southeastern Regional Transmission Planning | Home | Southeastern Regional Tranmission Planning and subscribing to SERTP mailbox