South Carolina Regional Transmission Planning

Stakeholder Meeting

Teams Meeting

November 18, 2025 9:00am – 10:30am

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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

Economic Transmission Planning Studies

Edward Chapman (DESC)
Stephen Lowe (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.

2025 Economic Planning Scenarios

Selected by Stakeholders During the June 3, 2025 Meeting

#	Source	Sink	Request (MW)	Amount (MW)	Year	Study Conditions	Study Request
1	DESC	SCPSA	3500(minus DESC base case solar-battery in model)	1977.4	2035S	Gen to load* Data center load	SACE
2	SCPSA	DESC	2700(minus SCPSA base case solar/battery in model)	2158.9	2035S	Gen to Gen	SACE
3	DESC	SCPSA	1000	1000	2030/31W	Gen to Gen	SACE

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Power Flow Base Cases

- 2025 LTWG Series PSSE Models with DESC and SCPSA 2025 Internal Model Updates
  - 2035 Summer
  - 2030/31 Winter

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.

Scenario 1

2035 Summer
DESC – SCPSA 1977.4 MW

Preliminary Results – SCPSA

DESC – SCPSA 1977.4 MW
2035 Summer Study

Constrained Facility	% Base Loading	% Study Loading	Contingency	Project Solution
SCPSA St. George - DESC St. George 115 kV #1Line	95%	175%	Loss of SCPSA St. George 115 kV #2 Bus	SCPSA7, SCPSA10, SCPSA14
Indian Field – St. George 115 kV Line	55%	112%	Loss of Orangeburg – St. George 115 kV #1 Line	SCPSA7, SCPSA10, SCPSA14
Blythewood 230-69 kV XFMR #2	54%	129%	Loss of Blythewood – Lugoff 230kV Line and Blythewood 230-69 kV XFMR #1	SCPSA3, SCPSA4, SCPSA13
Blythewood – Lugoff #1 69 kV Line	45%	118%	Loss of Blythewood – Lugoff 230kV Line and South Bethune – Camden 230 kV Line	SCPSA11

**Only select contingencies are shown*

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Preliminary Results – SCPSA

DESC – SCPSA 1977.4 MW
2035 Summer Study

Project	Description	Cost ($M)	Duration (Months)
SCPSA3	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. Replace limiting elements on Blythewood – Columbia 69 kV #1 and #2 lines.	$74.7	92
SCPSA4	Construct a new 230 kV Line from the Cedar Knoll 230-69 kV Substation to the Blythewood 230-69 kV Substation with bundled 1272.	$29.7	54
SCPSA7	Construct a new 230 kV tie line from DESC's Canadys substation to SCPSA's Indian Field substation using bundled 1272 ACSR.	$90.9	77
SCPSA10	Rebuild the St. George 115 kV tie lines with 1272 ACSR.	$3.8	18
SCPSA11	Replace Blythewood - Lugoff 69 kV #1 Line limiting elements.	$52.3	30
SCPSA13	Add a second 230-69 kV transformer at Cedar Knoll rated for 150 MVA.	$14.9	52
SCPSA14	Construct a new 230 kV tie line from SCPSA's Orangeburg substation to Dominion's Orangeburg substation using bundled 1272 ACSR.	$36.3	36
	Total:	$302.6	92

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Preliminary Results – DESC

DESC – SCPSA 1977.4 MW
2035 Summer Study

Constrained Facility	% Base Loading	% Study Loading	Contingency	Project
St. George – St. George 115kV #1 SCPSA Tie	<90	133.4	Open St. George – St. George 115kV #2 SCPSA Tie	DESC1
Dawson – Faber Place 230kV	105.9	124.6	Open Church Creek – Ritter 230kV and Church Creek – Dawson 230kV	DESC2
Denmark – Toolebeck 115kV	<90	114.7	Open Cope – Orangeburg East 230kV and Cope – Canadys 230kV	DESC3
Ward 230/115kV #1 Transformer	<90	110.1	Open VCS2 – Ward 230kV and Ward 230/115kV #2 Transformer	DESC4
Graniteville 230/115kV #1 Transformer	<90	110.0	Open Graniteville – Graniteville #2 230kV and Graniteville 230/115kV #2 Transformer	DESC4
Graniteville 230/115kV #2 Transformer	<90	108.3	Open Graniteville – Graniteville #2 230kV and Graniteville 230/115kV #1 Transformer	DESC4
Graniteville – Ward 230kV	<90	106.7	Open VCS2 – Ward 230kV and Beulah Solar – Lake Murray 115kV	DESC4
McMeekin – Saluda Hydro 115kV #1	92.9	101.9	Open Lake Murray 115kV bus tie breaker	DESC5

*DESC has Op Guides to reduce some base case overloads that would not be relied on in transfer cases

**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

DESC – SCPSA 1977.4 MW
2035 Summer Study

Project	Description	Cost ($M)	Duration (Months)
DESC1	Upgrade limiting elements on St. George – St. George 115kV #1 SCPSA Tie.	0.045	18
DESC2	Upgrade Dawson – Faber Place 230kV to B-1272 ACSR.	42.600	48
DESC3	Upgrade Denmark – Toolebeck 115kV to 1272 ACSR.	13.500	48
DESC4	Add Graniteville #2 – Ward 230kV line 1272 ACSR.	36.857	48
DESC5	Move terminals of two lines at Lake Murray 115kV Substation. Move Saluda Hydro - Lake Murray 115kV line from bus 1-> bus 2. McMeekin - Lake Murray 115kV line from bus 2-> bus 1.	2.430	48
	TOTAL	95.432	48

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Scenario 2

2035 Summer
SCPSA – DESC 2158.9 MW

Preliminary Results – SCPSA

SCPSA – DESC 2158.9 MW
2035 Summer Study

Constrained Facility	% Base Loading	% Study Loading	Contingency	Project Solution
Camden – Lugoff 69 kV Line	36%	133%	Loss of Blythewood – VC Summer 230 kV Line and Camden – Lugoff 230 kV Line	SCPSA9
Batesburg – Columbia 115 kV Line	86%	117%	Loss of Pomaria – Newberry 230 kV Line and Orangeburg – Shamrock 230 kV Line	SCPSA12
Columbia – Lyles 115 kV Line	73%	113%	Loss of VC Summer Unit 1 and Pomaria – Newberry 230 kV Line	SCPSA5
Jefferies – Charity 230 kV Line	81%	126%	Loss of Winyah – Charity 230 kV Line and Mateeba – DESC Pepperhill 230 kV Tie Line	SCPSA6
Newberry 230-69 kV XFMR #2	55%	139%	Loss of Pomaria – Newberry 230 kV Line and Newberry 230-69 kV XFMR #1	SCPSA8

**Only select contingencies are shown*

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Preliminary Results – SCPSA

SCPSA – DESC 2158.9 MW
2035 Summer Study

Project	Description	Cost ($M)	Duration (Months)
SCPSA5	Move the Lexington delivery point from the Columbia – Lyles 115 kV Line to a new terminal at the Columbia 115-69 kV Substation and rebuild the Columbia – Lyles 115 kV Line with 795 ACSR.	$35.7	36
SCPSA6	Rebuild the Jefferies-Charity 230 kV line as double circuit with bundled 1272 ACSR.	$155.9	100
SCPSA8	Replace Newberry 230-69 kV 100 MVA Transformers with 150 MVA Transformers.	$18.0	69
SCPSA9	Replace Camden - Lugoff 69 kV Line limiting elements.	$34.6	29
SCPSA12	Replace Batesburg - Columbia 115 kV Line limiting elements.	$22.7	24
	TOTAL	$266.9	100

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Preliminary Results – DESC

SCPSA – DESC 2158.9 MW
2035 Summer Study

Constrained Facility	% Base Loading	% Study Loading	Contingency	Project
Graniteville – Sand Bar Ferry 115kV SOCO Tie	99.3	106.3	Open Toolebeck – South Augusta 230kV SOCO Tie and SRS – Vogtle 230kV SOCO Tie	DESC6
Canadys 230/115kV Transformer	<90	105.2	Open Church Creek – Ritter 230kV and Canadys – Yemassee 230kV	DESC2, DESC7

*DESC has Op Guides to reduce some base case overloads that would not be relied on in transfer cases

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Preliminary Results – DESC

SCPSA – DESC 2158.9 MW
2035 Summer Study

Project	Description	Cost ($M)	Duration (Months)
DESC2	Upgrade Dawson – Faber Place 230kV to B-1272 ACSR.	42.600	48
DESC6	Add 6% series reactor on the Graniteville – Sand Bar Ferry 115kV SOCO Tie.	4.637	36
DESC7	Add Canadys – Ritter 230kV line B-1272 ACSR.	18.724	48
	TOTAL	65.961	48

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Scenario 3

2030/31 Winter
DESC – SCPSA 1000 MW

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Preliminary Results – SCPSA

DESC – SCPSA 1000 MW
2030/31 Winter Study

Constrained Facility	% Base Loading	% Study Loading	Contingency	Project Solution
Lugoff 230-69 kV XFMR	59%	116%	Loss of Blythewood 69 kV Bus	SCPSA1
Columbia – Lyles 115 kV Line	58%	130%	Loss of Newberry – Batesburg 115 kV Line and Aiken – DESC Toolebeck 230 kV Line	SCPSA5
Newberry 230-69 kV XFMR #2	52%	122%	Loss of Pomaria – Newberry 230 kV Line and Newberry 230-69 kV XFMR #1	SCPSA8
Blythewood 230-69 kV XFMR #2	58%	133%	Loss of Blythewood – Lugoff 230kV Line and Blythewood 230-69 kV XFMR #1	SCPSA3, SCPSA4, SCPSA13

**Only select contingencies are shown*

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Preliminary Results – SCPSA

DESC – SCPSA 1000 MW
2030/31 Winter Study

Project	Description	Cost ($M)	Duration (Months)
SCPSA1	Add a second 230-69 kV transformer at Lugoff rated for 100 MVA.	$3.5	35
SCPSA3	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. Replace limiting elements on Blythewood – Columbia 69 kV #1 and #2 lines.	$74.7	92
SCPSA4	Construct a new 230 kV Line from the Cedar Knoll 230-69 kV Substation to the Blythewood 230-69 kV Substation with bundled 1272.	$29.7	54
SCPSA5	Move the Lexington delivery point from the Columbia – Lyles 115 kV Line to a new terminal at the Columbia 115-69 kV Substation and rebuild the Columbia – Lyles 115 kV Line with 795 ACSR.	$35.7	36
SCPSA8	Replace Newberry 230-69 kV 100 MVA Transformers with 150 MVA Transformers.	$18.0	69
SCPSA13	Add a second 230-69 kV transformer at Cedar Knoll rated for 150 MVA.	$14.9	52
	TOTAL	$176.5	92

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Preliminary Results – DESC

DESC – SCPSA 1000 MW
2030/31 Winter Study

Constrained Facility	% Base Loading	% Study Loading	Contingency	Project
Lyles – Columbia 115 kV SCPSA Tie	<90	115.3	Open Toolebeck – Aiken 230kV SCPSA Tie and Batesburg – Newberry 230kV	DESC8
Faber Place Bus Sections	<90	111.0	Open Williams – Charity 230kV SCPSA Tie and Carnes – Mateeba 230kV	DESC9

*DESC has Op Guides to reduce some base case overloads that would not be relied on in transfer cases

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Preliminary Results – DESC

DESC – SCPSA 1000 MW
2030/31 Winter Study

Project	Description	Cost ($M)	Duration (Months)
DESC8	Upgrade limiting elements on Lyles – Columbia 115 kV SCPSA Tie.	0.039	18
DESC9	Upgrade Faber Place Bus Sections.	0.141	24
	TOTAL	0.180	24

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2025 Economic Planning Scenarios

Linear Transfer Results – DESC & SCPSA

#	Source	Sink	Amount (MW)	Year	FCITC Limit	Limit/Contingency
1	DESC	SC	1977.4	2035S	No Limit Found	N/A
2	SC	DESC	2158.9	2035S	No Limit Found	N/A
3	DESC	SC	1000	2030/31W	No Limit Found	N/A

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

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
- FERC issued notice granting to extend the SERTP/SCRTP Order 1920 by 6 months.
  - Regional Compliance Filing Deadline is December 12, 2026
  - Interregional compliance Filing Deadline is February 12, 2027
- Order 1000 process for SCRTP will continue in 2026

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 Transmission Planning and subscribing to SERTP mailbox