



TAG Meeting December 12, 2018

Webinar



TAG Meeting Agenda

- 1. Administrative Items – Rich Wodyka**
- 2. 2018 Collaborative Transmission Plan Study Report – Orvane Piper and Mark Byrd**
- 3. 2019 Study Scope Discussion – Mark Byrd**
- 4. Regional Studies Update – Bob Pierce**
- 5. 2018 TAG Work Plan Update and 2019 TAG Work Plan Preview – Rich Wodyka**
- 6. TAG Open Forum – Rich Wodyka**



2018 Study Activities Update

Orvane Piper - DEC

Mark Byrd - DEP



Steps and Status of the Study Process

- 1. Assumptions Selected**
- 2. Study Criteria Established**
- 3. Study Methodologies Selected**
- 4. Models and Cases Developed**
- 5. Technical Analysis Performed**
- 6. Problems Identified and Solutions Developed**
- 7. Collaborative Plan Projects Selected**
- 8. Study Report Prepared**

Completed



Studies for 2018

- **Annual Reliability Study**
 - **Assess DEC and DEP transmission systems' reliability and develop a single Collaborative Transmission Plan**
- **Local Economic Studies**
 - **Assess serving 300 MW hypothetical loads at 6 potential economic development sites that would have a choice of Electric Provider**



Annual Reliability Studies

- **2023 Summer: near term**
- **2023/2024 Winter: near-term**
- **2028/2029 Winter: long-term**



Major Projects in 2018 Plan

Reliability Project	TO	Planned I/S Date
Ballantyne Switching Station, Construct	DEC	12/19
Rural Hall 100 kV, Install SVC	DEC	12/19
Orchard Tie 230/100 kV, Construct	DEC	12/20
Windmere 100 kV Line, Construct	DEC	12/21



Major Projects in 2018 Plan (continued)

Reliability Project	TO	Planned I/S Date
NTE II, Generator Interconnection	DEC	12/21
Wilkes Tie 230/100 kV, Construct	DEC	12/23
Harley 100 kV Lines (Tiger - Campobello) Reconductor	DEC	TBD



Major Projects in 2018 Plan (continued)

Reliability Project	TO	Planned I/S Date
Castle Hayne 230kV Substation, Convert to Double Breaker	DEP	6/18
Asheville Plant, Replace 2-300 MVA 230/115 kV Banks with 2-400 MVA Banks, Reconductor 115 kV Ties to Switchyard, Upgrade Breakers, and Add 230 kV Capacitor Bank	DEP	11/18
Raeford 230 kV Substation, Loop-in Richmond - Ft Bragg Woodruff St 230 kV Line and Add 3rd Bank	DEP	12/18
Cane River 230 kV Substation, Construct 150 MVAR SVC	DEP	12/19



Major Projects in 2018 Plan (Continued)

Reliability Project	TO	Planned I/S Date
Asheboro-Asheboro East 115kV North Line Reconductor	DEP	6/19
Delco 230kV Substation, Convert to Double Breaker	DEP	6/19
Sutton - Castle Hayne 115 kV North Line - Rebuild	DEP	12/19
Jacksonville - Grants Creek 230 kV Line and Grants Creek 230/115 kV Substation	DEP	6/20



Major Projects in 2018 Plan (Continued)

Reliability Project	TO	Planned I/S Date
Newport - Harlowe 230 kV Line, Newport SS and Harlowe 230/115 kV Substation	DEP	6/20
Brunswick #1 – Jacksonville 230 kV Line, Loop into Folkstone 230 kV Substation	DEP	6/24
Craggy-Enka 230 kV Line, Construct	DEP	12/25
Durham - RTP 230 kV Line, Reconductor	DEP	TBD



Comparison to Previous Collaborative Transmission Plan

	2017 Plan	2018 Plan
Number of projects with an estimated cost of \$10 million or more each	17	19
Total estimated cost of Plan	\$426 M	\$657 M

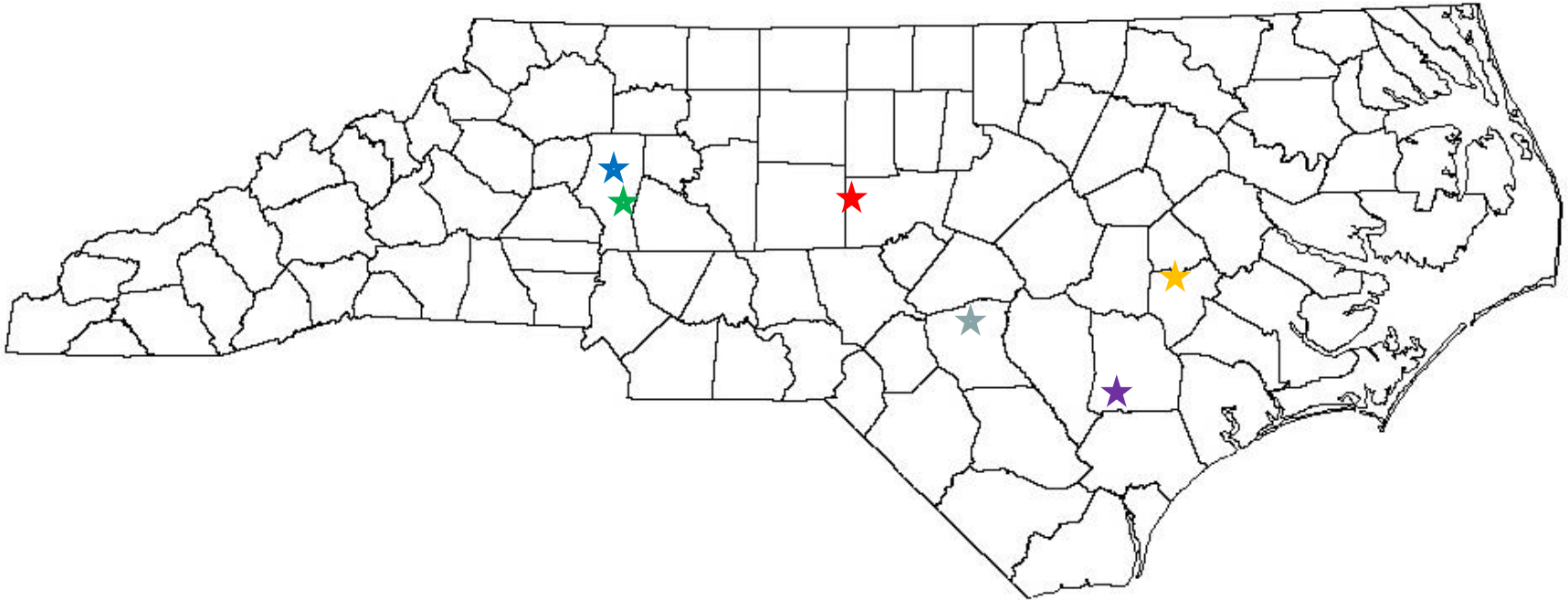


Studies for 2018

- **Annual Reliability Study**
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- **Local Economic Studies**
 - **Assess serving 300 MW hypothetical loads at 6 potential economic development sites that would have a choice of Electric Provider**



North Carolina Transmission Planning Collaborative



- ★ Chatham-Siler City Advanced Manufacturing Site
- ★ GTP Parcel 1
- ★ Highway 70 East
- ★ Peppercorn Plantation
- ★ SouthPark Phase II – Duplin County Business & Industry
- ★ US 401 North Site



Highway 70 East - DEC

- **Interconnection**
 - **Switching Station**
 - **230 kV fold-in's (1.34 miles, 1.6 miles)**
- **Network Upgrades**
 - **No additional projects identified beyond what was identified in base reliability results for 2028/2029 Winter**



Peppercorn Plantation – DEC (Marshall 230 kV)

- **Interconnection**
 - **Switching Station**
 - **Double circuit 230 kV tap line (8 miles)**
- **Network Upgrades**
 - **No additional projects identified beyond what was identified in base reliability results for 2028/2029 Winter**



Peppercorn Plantation - DEC (Mitchell River 230 kV)

- **Interconnection**
 - **Switching Station**
 - **Double circuit 230 kV tap line (7.28 miles)**
- **Network Upgrades**
 - **No additional projects identified beyond what was identified in base reliability results for 2028/2029 Winter**



Chatham-Siler City AMS - DEP

- **Interconnection**
 - **Switching Station**
 - **(2) 230 kV tap lines (0.6 mile)**
- **Network Upgrades**
 - **Upgrade Rockingham-West End 230 kV West Line (7.96 miles)**



SouthPark Phase II – Duplin Co - DEP

- **Interconnection**
 - **Switching Station**
 - **(2) 230 kV tap lines (0.1 mile)**
- **Network Upgrades**
 - **No additional projects identified beyond what was identified in base reliability results for 2028/2029 Winter**



US 401 North - DEP

- **Interconnection**
 - **Switching Station**
 - **(2) 230 kV tap lines (2.6 mile)**
- **Network Upgrades**
 - **Upgrade Rockingham-West End 230 kV West Line (7.96 miles)**
 - **Upgrade Erwin-Fayetteville East 230 kV Line (4.09 miles)**



GTP Parcel 1 - DEP

- **Interconnection**
 - **(2) 230 kV tap lines (7.8 miles)**
- **Network Upgrades**
 - **Uprate the current transformer ratios for 2 lines leaving Wommack 230 kV Sub**



**Local Economic Studies
Hypothetical Loads Transmission Costs**

<u>Name</u>	<u>Estimated Interconnection Costs, \$</u>	<u>Estimated Network Upgrade Costs, \$</u>	<u>BAA</u>
Chatham-Siler City Advanced Manufacturing Site	\$ 11,800,000	\$ 15,920,000	DEP
GTP Parcel 1	\$ 23,250,000	\$ 500,000	DEP
Highway 70 East	\$ 17,500,000	\$ -	DEC
Peppercorn Plantation (Option 1)	\$ 28,500,000	\$ -	DEC
Peppercorn Plantation (Option 2)	\$ 27,000,000	\$ -	DEC
SouthPark Phase II – Duplin County Business & Industry	\$ 10,300,000	\$ -	DEP
US 401 North Site	\$ 17,860,000	\$ 24,100,000	DEP



Study Report Prepared

- **TAG is requested to provide any input to the OSC on the 2018 Collaborative Transmission Plan Study Report.**
- **Provide input by **January 4, 2019** to Rich Wodyka (rawodyka@aol.com)**



Questions ?





2019 Study Scope Discussion

Mark Byrd - DEP



2018 Study

- **Base reliability case analysis – 2023 summer and 2023-2024 winter and 2028-2029 winter**
 - **An “All Firm Transmission” Case(s) will be developed which will consider all confirmed long term firm transmission reservations with roll-over rights applicable to the study year(s)**
 - **DEC and DEP generation down cases will be created from the common Base Case**
- **Alternate scenarios/sensitivities – 2028-2029 winter. Assess serving 300 MW hypothetical loads at 6 potential economic development sites that would have a choice of Electric Provider**



2019 Proposed Study Scope

- **Base reliability case analysis – 2024 summer and 2024-2025 winter and 2029 summer**
 - **An “All Firm Transmission” Case(s) will be developed which will consider all confirmed long term firm transmission reservations with roll-over rights applicable to the study year(s)**
 - **DEC and DEP generation down cases will be created from the common Base Case**
- **Alternate scenarios/sensitivities – 2029 summer. Possibly hypothetical transfers but TBD**



Past Studies' Alternate Scenarios

- **Hypothetical Imports/Exports re-evaluated every other year (last performed in 2017)**
 - 1000 MW transfers
- **Hypothetical NC Generation**
 - Fossil Fuel
 - Wind Energy
 - Off-shore – NCTPC only and NCTPC-PJM Joint Study
- **Retirement of Coal Units**



Local Economic Study Requests

- **Propose economic hypothetical scenarios to be studied as part of the transmission planning process**
- **Requests can include in, out and through transmission service**
- **Official TAG request to be distributed in early January 2019**



Public Policy Study Requests

- **Provide input on public policies that are driving the need for local transmission for study**
- **Official TAG request to be distributed in early January 2019**



TAG Input Request

- **TAG is requested to provide any additional input to the OSC on the 2019 Study Scope, any additional suggested study scenarios, as well as input on Local Economic Study Requests and Public Policy Study Requests.**
- **Stakeholder feedback is needed!**
- **Provide input by **February 5, 2019** to Rich Wodyka – Administrator (rawodyka@aol.com)**



Questions?





Regional Studies Reports

Bob Pierce
Duke Energy Carolinas



SERC Long Term Study Group Update



SERC Long Term Study Group

- Completed work on 2018 series of MMWG cases

- 2023 Summer Study Report showed acceptable levels of transfer capability and no unanticipated projects being required in DEC/DEP
 - Report will be publicly available in April 2019



SERTP



SERTP

- 2018 SERTP Annual Transmission Planning Summit and Assumptions Input Meeting at GTC headquarters, tomorrow in Tucker, GA.
- Will discuss the regional transmission plan, economic study results and assumptions to be used in next year's transmission plan.



<http://www.southeasternrtp.com/>



NERC Reliability Standards Update



NERC

- SOL/IROL related standards update
- SPIDER
- Frequency response
 - No change in SERC over last 5 years
 - Impact of IBR's
 - EIPC work
 - MMWG – add low inertia/minimum load case and guidance on load & generator modeling



Questions ?





2018 TAG Work Plan

Rich Wodyka
Administrator



2018 NCTPC Overview Schedule

Reliability Planning Process

- Evaluate current reliability problems and transmission upgrade plans
 - Perform analysis, identify problems, and develop solutions
 - Review Reliability Study Results

Local Economic Planning Process

- Propose and select Local Economic Studies and Public Policy Study scenarios
 - Perform analysis, identify problems, and develop solutions
 - Review Local Economic Study and Public Policy Results

Coordinated Plan Development

- Combine Reliability and Local Economic Study and Public Policy Results
 - OSC publishes DRAFT Plan
 - TAG review and comment

TAG Meetings





January - February – March

- **2018 Study – Finalize Study Scope of Work**
 - ✓ Receive request from OSC to provide input on proposed Local Economic Study scenarios and interfaces for study
 - *TAG provide input to the OSC on proposed Local Economic Study scenarios and interfaces for study – **No TAG requests received***
 - ✓ Receive request from OSC to provide input in identifying any public policies that are driving the need for local transmission
 - *TAG provide input to the OSC in identifying any public policies that are driving the need for local transmission for study - **No TAG requests received***
 - ✓ Receive final 2018 Reliability Study Scope for comment
 - *TAG review and provide comments to the OSC on the final 2018 Study Scope*



January - February – March

First Quarter TAG Meeting – **March 27th**

➤ 2018 Study Update

- ✓ Receive a report on the Local Economic Study scope and any public policy scenarios that are driving the need for local transmission for study - ***No TAG requests received***
- ✓ Receive a progress report on the Reliability Planning study activities and the final draft of the 2018 Study Scope



April - May – June

Second Quarter TAG Meeting – *June 19th*

- **2018 Study Update**
 - ✓ **Receive a progress report on study activities**

 - ✓ **Receive a mid-year update on the status of the upgrades in the 2017 Collaborative Transmission Plan**



July - August – September

Third Quarter TAG Meeting – **September 25th**

➤ 2018 Study Update

- ✓ Receive a progress report on the study activities and preliminary results
- ✓ TAG is requested to provide feedback to the OSC on the technical analysis performed, the problems identified as well as proposing alternative solutions to the problems identified
- ✓ Provide feedback to Rich Wodyka (rawodyka@aol.com) by **October 19th**



October - November - December

Fourth Quarter TAG Meeting – *December 12th*

➤ 2018 Selection of Solutions

- ✓ TAG will receive feedback from the OSC on any alternative solutions that were proposed by TAG members

➤ 2018 Study Update

- ✓ Receive and discuss final draft of the 2018 Collaborative Transmission Plan Report
- ✓ Discuss potential study scope for 2019 studies



Questions ?





2019 TAG Work Plan

Rich Wodyka
Administrator



2019 NCTPC Overview Schedule

Reliability Planning Process

- Evaluate current reliability problems and transmission upgrade plans
 - Perform analysis, identify problems, and develop solutions
 - Review Reliability Study Results

Local Economic Planning Process

- Propose and select Local Economic Studies and Public Policy Study scenarios
 - Perform analysis, identify problems, and develop solutions
 - Review Local Economic Study and Public Policy Results

Coordinated Plan Development

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 - **Receive request from OSC to provide input on proposed Local Economic Study scenarios and interfaces for study**
 - *TAG provide input to the OSC on proposed Local Economic Study scenarios and interfaces for study*
 - **Receive request from OSC to provide input in identifying any public policies that are driving the need for local transmission**
 - *TAG provide input to the OSC in identifying any public policies that are driving the need for local transmission for study*
 - **Receive final 2019 Reliability Study Scope for comment**
 - *TAG review and provide comments to the OSC on the final 2019 Study Scope*



January - February – March

First Quarter TAG Meeting – **March 13th**

➤ 2019 Study Update

- Receive a report on the Local Economic Study scope and any public policy scenarios that are driving the need for local transmission for study
- Receive a progress report on the Reliability Planning study activities and the final 2019 Study Scope



April - May – June

Second Quarter TAG Meeting – TBD

- **2019 Study Update**
 - **Receive a progress report on study activities**
 - **Receive update status of the upgrades in the 2018 Collaborative Plan**



July - August – September

Third Quarter TAG Meeting – TBD

➤ 2019 Study Update

- Receive a progress report on the study activities and preliminary results
- TAG is requested to provide feedback to the OSC on the technical analysis performed, the problems identified as well as proposing alternative solutions to the problems identified



October - November - December

Fourth Quarter TAG Meeting – TBD

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➤ 2019 Study Update

- **Receive and discuss final draft of the 2019 Collaborative Transmission Plan Report**
- **Discuss potential study scope for 2020 studies**



Questions ?





TAG
Open Forum Discussion

Comments or Questions?