



# **TAG Meeting December 13, 2016**

**NCEMC Office  
Raleigh, NC**



# **TAG Meeting Agenda**

- 1. Administrative Items – Rich Wodyka**
- 2. 2016 Collaborative Transmission Plan Study Report – Orvane Piper**
- 3. 2017 Study Scope Discussion – Mark Byrd**
- 4. Regional Studies Update – Bob Pierce**
- 5. 2016 TAG Work Plan Update and 2017 TAG Work Plan Preview – Rich Wodyka**
- 6. TAG Open Forum – Rich Wodyka**



# **2016 Collaborative Transmission Plan Report**

**Orvane Piper  
Duke Energy Carolinas**



## 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



## Study Assumptions

- **Proposed combined cycle plants in Asheville included**
  - Upgrades associated with combined cycle plants included
- **Asheville 1 and 2 coal units not available for dispatch**
- **CPLW Resources**
  - 150 MW import from DUK not included
  - 400 MW import from CPLE
  - 36 MW import (SCPSA/TVA)
  - CPLW generation



## **Studies for 2016**

- **Annual Reliability Study**
  - **Assess DEC and DEP transmission systems' reliability and develop a single Collaborative Transmission Plan**
  
- **Sensitivities**
  - **Assess DEC and DEP transmission systems' ability to perform under hypothetical scenarios**



# Annual Reliability Study

- **Study years:**
  - **2021 Summer**
  - **2021/22 Winter**
  - **2026 Summer**



## Major Projects in 2016 Plan

<b>Reliability Project</b>	<b>TO</b>	<b>Planned I/S Date</b>
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	12/19
Cane River 230 kV Substation, Construct 150 MVAR SVC	DEP	12/19
Reconductor Harley 100 kV Lines (Tiger - Campobello)	DEC	6/21





## Major Projects in 2016 Plan (Continued)

<b>Reliability Project</b>	<b>TO</b>	<b>Planned I/S Date</b>
Fort Bragg Woodruff St 230 kV Sub, Replace 150 MVA 230/115 kV transformer with two 300 MVA banks & reconductor Manchester 115 kV feeder	DEP	12/16
Raeford 230 kV substation, loop-in Richmond-Ft Bragg Woodruff St 230 kV Line and add 3rd bank	DEP	6/18
Sutton-Castle Hayne 115 kV North line Rebuild	DEP	6/18



## Major Projects in 2016 Plan (Continued)

<b>Reliability Project</b>	<b>TO</b>	<b>Planned I/S Date</b>
Jacksonville-Grants Creek 230 kV Line and Grants Creek 230/115 kV Substation	DEP	6/20
Newport-Harlowe 230 kV Line, Newport SS and Harlowe 230/115 kV Substation	DEP	6/20
Durham - RTP 230 kV Line, Reconductor	DEP	6/24
Brunswick #1 – Jacksonville 230 kV Line Loop-In to Folkstone 230 kV substation	DEP	6/24



## ***Comparison to Previous Collaborative Transmission Plan***

	<b>2015 Plan</b>	<b>2016 Plan</b>
<b>Number of projects with an estimated cost of \$10 million or more each</b>	<b>8</b>	<b>10</b>
<b>Total estimated cost of Plan</b>	<b>\$156 M</b>	<b>\$214 M</b>



## **Sensitivity #1**

- **Forced outage of multiple nuclear units**
  - **Study year 2026 Summer**
  - **DEP's Brunswick Units (1 & 2)**
  - **Capacity replacement equally from Southern Company and PJM Market.**



## Sensitivity #1 (Continued)

<b>Reliability Project</b>	<b>TO</b>	<b>Estimated Cost</b>
Reconductor Marion - Mullins 115kV line	DEP	\$9 M
Reconductor Shaw AFB-Eastover (SCEG) 115 kV line	DEP	\$8 M
		<b>\$17 M</b>



## **Sensitivity #2**

- **Identification of permanent transmission upgrades to eliminate use of specific operating procedures / guides**
  - **Study year 2026 Summer**
  - **1 DEC/DEP operating procedure**
  - **4 DEP operating procedures**



## Sensitivity #2 (Continued)

<b>Reliability Project</b>	<b>TO</b>	<b>Estimated Cost</b>
Install Series Reactors on Wateree-Great Falls 100 kV	DEC	\$5 M
Reconductor Rockingham-West End 230 kV	DEP	\$8 M
Reconductor Marion-Dillon Tap 115 kV	DEP	\$15 M
		<b>\$28 M</b>



## **TAG Input Request**

- **TAG is requested to provide any input to the OSC on the 2016 Collaborative Transmission Plan Study Report.**
- **Provide input by **January 4, 2017** to Rich Wodyka – Administrator ([rawodyka@aol.com](mailto:rawodyka@aol.com))**





# *Questions ?*





# **2017 Study Scope Discussion**

**Mark Byrd  
Duke Progress**



# Study Process Steps

- 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**



# Collaborative Study Assumptions

## ➤ Study years

- Short term (5 yr) and long term (10 yr) base reliability analysis
- Alternate model scenarios

## ➤ Thermal power flow analysis

- DEP and DEC contingencies
- DEP and DEC monitored elements
  - Internal lines
  - Tie lines



## Study Inputs

- **LSEs provide:**
  - **Inputs for load forecasts and resource supply assumptions**
  - **Dispatch order for their resources**
- **Area interchange coordinated between Participants and neighboring systems**



# **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 January 2017**



# 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 January 2017**



## 2017 Study

- **Base reliability case analysis – 2022 summer and 2022-2023 winter and 2027 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 – 2027 summer**





## **Past Studies' Alternate Scenarios**

- **Hypothetical Imports/Exports re-evaluated every other year (last performed in 2015)**
  - 1000 MW transfers
- **Hypothetical NC Generation**
  - Fossil Fuel
  - Wind Energy
    - Off-shore – NCTPC only and NCTPC-PJM Joint Study
- **Retirement of Coal Units**



## **TAG Input Request**

- **TAG is requested to provide any additional input to the OSC on the 2017 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 3, 2017** to Rich Wodyka – Administrator ([rawodyka@aol.com](mailto: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 2016 series of MMWG cases
  - Much more attention paid to interchange coordination
- 2021 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 2017
- Polar Vortex Loop Flow Study
- Firm Flow Task Force



# **Carolinas Transmission Coordination Arrangement (CTCA)**



# CTCA

- Studied 2018/19W and 2022 Summer
- Expanded scope under TPL-001-4
- Results/Report expected in first quarter of 2017





# Eastern Interconnection Planning Collaborative (EIPC)



# EIPC Stakeholder Meetings

- Regional Planning processes
  - SERTP
  - SCRTP
  - SPP
  - Florida
  - New England ISO
  - New York ISO
  - PJM
  - MISO
  
- Order 1000 Inter-regional processes (seams)



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



# SERTP



## SERTP

- 2016 SERTP Annual Transmission Planning Summit and Assumptions Input Meeting, 12/15/16 in Atlanta
- 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



- SERC MRRE audit of DEP/DEC
- NERC GridSecCon 2016 - phishing
- TPL-001-4/IRO-017-1 Outage Coordination (4/17)





# *Questions ?*





# 2016 TAG Work Plan Update

**Rich Wodyka**  
**Administrator**



## 2016 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

- No Local Economic Studies or Public Policy Studies were proposed by Stakeholders
- Perform Additional Sensitivities Studies

### Coordinated Plan Development

- Reliability Study Results
- OSC publishes DRAFT Plan
- TAG review and comment

TAG Meetings



1<sup>st</sup> Quarter

2<sup>nd</sup> Quarter

3<sup>rd</sup> Quarter

4<sup>th</sup> Quarter

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## ***2016 TAG Work Plan***

### **January - February - March**

- **2016 Study – Finalize Study Scope of Work**
  - ✓ **Receive final 2016 Reliability Study Scope for comment**
    - *Review and provide comments to the OSC on the final 2016 Study Scope – **Provide Comments by March 31st***
  - ✓ **Receive request from OSC to provide input on proposed Local Economic Study scenarios and interfaces for study**
    - *Provide input to the OSC on proposed Local Economic Study scenarios and interfaces for study – **No Requests***
  - ✓ **Receive request from OSC to provide input in identifying any public policies that are driving the need for local transmission**
    - *Provide input to the OSC in identifying any public policies that are driving the need for local transmission for study – **No Requests***



# January - February - March

## First Quarter TAG Meeting – March 14<sup>th</sup> Webinar

### ➤ 2016 Study Update

- ✓ Receive a progress report on the Reliability Planning study activities and 2016 Study Scope
- ✓ *Provide comments on the final 2016 Study Scope to Rich Wodyka at [rawodyka@aol.com](mailto:rawodyka@aol.com) by March 31<sup>st</sup>.*



## **April - May - June**

### **Second Quarter TAG Meeting – *Delayed until July 19th***

#### **➤ 2016 Study Update**

- ✓ Receive a progress report on the Reliability Planning study activities**
- ✓ Receive update status of the upgrades in the 2015 Collaborative Plan**



## **July - August - September**

### **➤ 2016 Study Update**

- ✓ Receive a progress report on the Reliability Planning study activities and preliminary results**
- ✓ TAG will be requested to provide input to the OSC and PWG on the technical analysis performed, the problems identified as well as proposing alternative solutions to the problems identified**



# July - August - September

## Third Quarter TAG Meeting – **September 12th**

### ➤ 2016 Study Update

- ✓ Receive a progress report on the Reliability Planning study activities and preliminary results
- ✓ **TAG is requested to provide input on any proposed alternative solutions to Rich Wodyka at [rawodyka@aol.com](mailto:rawodyka@aol.com) by October 7<sup>th</sup>.**





## **October - November - December**

### **➤ 2016 Selection of Solutions**

- ✓ **TAG will receive feedback from the OSC on any alternative solutions that were proposed by TAG members by the end of October.**

### **➤ 2016 Study Update**

- ✓ **Receive and comment on final draft of the 2016 Collaborative Transmission Plan report**
- ✓ **Discuss potential study scope for 2017 studies**



## October - November - December

### Fourth Quarter TAG Meeting – **December 13th**

#### ➤ 2016 Study Update

- ✓ Receive presentation on the final draft report of 2016 Collaborative Transmission Plan
- ✓ Discuss potential study scope for 2017 studies



# Questions ?





# 2017 TAG Work Plan Preview

**Rich Wodyka**  
**Administrator**



## 2017 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



1st Quarter

2nd Quarter

3rd Quarter

4th Quarter

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## ***2017 TAG Work Plan***

### **January - February - March**

- **2017 Study – Finalize Study Scope of Work**
  - **Receive final 2017 Reliability Study Scope for comment**
    - *Review and provide comments to the OSC on the final 2017 Study Scope*
  - **Receive request from OSC to provide input on proposed Local Economic Study scenarios and interfaces for study**
    - *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**
    - *Provide input to the OSC in identifying any public policies that are driving the need for local transmission for study*



# January - February - March

## First Quarter TAG Meeting –TBD

### ➤ 2017 Study Update

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



## **April - May - June**

### **Second Quarter TAG Meeting – TBD**

#### **➤ 2017 Study Update**

- **Receive a progress report on study activities**
- **Receive update status of the upgrades in the 2016 Collaborative Plan**





## **July - August - September**

### **➤ 2017 Study Update**

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

### **➤ 2017 Selection of Solutions**

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



# **July - August - September**

## **Third Quarter TAG Meeting – TBD**

### **➤ 2017 Study Update**

- Receive a progress report on the study activities and preliminary results**



## **October - November - December**

### **➤ 2017 Study Update**

- **Receive and comment on final draft of the 2017 Collaborative Transmission Plan Report**
- **Discuss potential study scope for 2018 studies**



# **October - November - December**

## **Fourth Quarter TAG Meeting – December TBD**

### **➤ 2017 Study Update**

- Receive presentation on the final draft report of 2017 Collaborative Transmission Plan**
- Discuss potential study scope for 2018 studies**



# Questions ?





# **TAG**

## **Open Forum Discussion**

**Comments or Questions?**