



# **TAG Meeting**

## **March 11, 2014**

**ElectriCities Office**  
**Raleigh, North Carolina**



# **TAG Meeting Agenda**

- 1. Administrative Items – Rich Wodyka**
- 2. FERC Order No. 1000 - Rule on Transmission Planning and Cost Allocation – Ben Harrison**
- 3. 2014 Study Activities and Study Scope – Mark Byrd**
- 4. Operations Reliability Coordination Agreement (ORCA) Report – Bob Pierce**
- 5. Regional Studies Update – Bob Pierce**
- 6. 2014 TAG Work Plan Update – Rich Wodyka**
- 7. TAG Open Forum – Rich Wodyka**



**FERC Order No. 1000 Rule on  
Transmission Planning and  
Cost Allocation  
Compliance Update**

**Ben Harrison – Duke Energy Carolinas  
on behalf of the North Carolina Transmission  
Planning Collaborative**



## NCTPC Regional Compliance Filings

- Oct 11, 2012 – DEC/DEP submitted regional compliance filing.
- Feb 21, 2013 – FERC issued order rejecting the NCTPC as an Order No. 1000 region.
- Mar 25, 2013 – DEC/DEP filed a request for rehearing/clarification of the order.
- ***Dec 19, 2013 – FERC issued order largely denying the DEC/DEP rehearing request. Order required some changes to the NCTPC local planning process. Duke given 60 days to submit revised compliance filing.***



## **SERTP Filings**

- May 22, 2013 – DEC/DEP submitted a revised Order No. 1000 regional compliance filing with FERC.
- July 10, 2013 – SERTP Sponsors submitted their interregional compliance filing – haven't received any FERC response.
- July 18, 2013 – FERC order on the SERTP regional compliance filing.



## **SERTP Filings (cont.)**

- Aug 19, 2013 – SERTP Sponsors filed for rehearing of the July 18<sup>th</sup> order – haven't received any FERC response.
- Sept 30, 2013 – SERTP Sponsors filed with FERC the following:
  1. A request for an extension of time till January 14, 2014 to submit their revised regional compliance filing; and
  2. Requested an effective date of June 1, 2014 to implement the Order No. 1000 regional compliance.
- Oct 17, 2013 – FERC granted the above Sept 30<sup>th</sup> requests.
- Dec 19, 2013 – SERTP stakeholder webinar on the revised regional compliance proposal.



## **SERTP Filings (cont.)**

- *Jan 14, 2014 – DEC/DEP along with other SERTP Sponsors submitted the 2<sup>nd</sup> Regional Compliance Filing (for Duke – only filed the transmittal letter).*
- *Feb 10, 2014 – DEC/DEP submitted 2<sup>nd</sup> Regional Compliance Filing which included revised NCTPC local areas as well as SERTP regional compliance areas.*



# NCTPC Local Changes Filed

- ***Revised definition of a Local Project to be:***
  - ***A transmission facility that is (1) located solely within the combined Duke-Progress transmission footprint and (2) not selected in the regional transmission plan for regional cost allocation.***
- ***Public Policy Changes***
  - ***Clarified that in determining whether a transmission need is driven by a public policy requirement, the OSC will examine whether there is in fact a transmission need.***
  - ***Added tariff language to make clear that the NCTPC would post on its website an explanation of why suggested transmission needs driven by public policy requirements introduced by stakeholders were not selected for further evaluation, if that ever occurred.***
  - ***Clarified that the development of solutions in the local planning process will include solutions to public policy transmission needs.***





# Implementation

- *Jun 1, 2014 – Effective date for the Order No. 1000 NCTPC local process and the SERTP regional process to begin.*
- *SERTP Sponsors are undergoing a number of preparatory activities in support of the June 1 implementation date.*



# Transmission Planning Stakeholder Participation

- NCTPC – NCTPC will continue to function as the “local” transmission planning venue.
  
- SERTP – The regional planning process for Order No. 1000 purposes will be through the SERTP.
  - ❖ SERTP website link: <http://www.southeasternrtp.com>
  - ❖ Sign-up for SERTP email updates:  
[http://www.southeasternrtp.com/email\\_signup.asp](http://www.southeasternrtp.com/email_signup.asp)



# Questions ?





# **NCTPC 2014 Study Activities and Study Scope**

**Mark Byrd**  
**Duke Energy Progress**



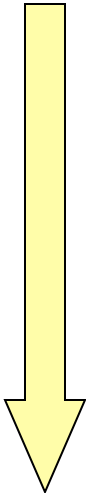
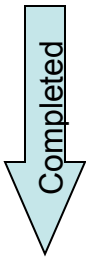
# Studies for 2014

- **Annual Reliability Study**
  - **Assess DEC and DEP transmission systems' reliability and develop a single Collaborative Transmission Plan**
  
- **Special Request from NCUC**
  - **Assess potential impact of external transfers on the transmission grid in North Carolina**



# Steps and Status of the Reliability 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**





## **Study Assumptions Selected**

- **Study Years for reliability analyses:**
  - Near-term: 2019 Summer, 2019/2020 Winter
  - Longer-term: 2024 Summer
- **LSEs provided:**
  - Input for load forecasts and resource supply assumptions
  - Dispatch order for their resources
- **Interchange coordinated between Participants and neighboring systems**



# Study Criteria Established

- **NERC Reliability Standards**
  - **Current standards for base study screening**
  - **Current SERC Requirements**
- **Individual company criteria**





# Study Methodologies Selected

- **Thermal Power Flow Analysis**
- **Each system (DEC and DEP) will be tested for impact of other system's contingencies**



## **Base Case Models Developed**

- **Started with 2013 series MMWG cases**
- **Latest updates to detailed models for DEC and DEP systems are included**
- **Adjustments were made based on additional coordination with neighboring transmission systems**
- **Planned transmission additions from updated 2013 Plan were included in models**



# Resource Supply Options Selected

- **Last year**
  - Hypothetical 1000 MW import/export scenarios
  - Coordination with PJM for modeling transfers
- **This year**
  - Special request from NCUC



## **Special Request from NCUC**

- **NCUC requested Joint Study involving NCTPC, PJM, MISO, and NERC**
- **PJM capacity auction for 2016/17 delivery year resulted in approximately 7500 MW from generation outside of PJM**
- **Study should consider whether this generation that is external to PJM could cause congestion on the transmission grid in North Carolina**
- **Draft scope document is being reviewed by the participating parties**



# **Enhanced Transmission Access Requests**

- **TAG memo was distributed on February 4, 2014 requesting input**
- **The deadline for input was February 18, 2014**
- **Sierra Club request**



# Technical Analysis

- **Conduct thermal screenings of the 2019 and 2024 base cases**



## **Problems Identified and Solutions Developed**

- **Identify limitations and develop potential alternative solutions for further testing and evaluation**
- **Estimate project costs and schedule**



## **Collaborative Plan Projects Selected**

- **Compare all alternatives and select preferred solutions**

## **Study Report Prepared**

- **Prepare draft report and distribute to TAG for review and comment**





# Questions ?





**MISO/Entergy Integration  
Operations Reliability Coordination  
Agreement (ORCA)**

**Bob Pierce  
Duke Energy Carolinas**



## MISO/Entergy Integration

**Midcontinent Independent System Operator (MISO)** intends to operate the MISO South Region and the MISO Midwest Region, which is currently the same footprint as the MISO Balancing Authority Area (“MISO Midwest Region”), as a single Balancing Authority Area (“BAA”)



# MISO/Entergy Integration

## MISO South

- Entergy Operating Companies (including, but not limited to, Entergy Arkansas, Inc., Entergy Gulf States Louisiana, L.L.C., Entergy Louisiana LLC, Entergy Mississippi, Inc., Entergy New Orleans, Inc. and Entergy Texas, Inc.),
- Louisiana Energy and Power Authority,
- Lafayette Utilities System,
- South Mississippi Electric Power Association,
- Cleco Corporation,
- NRG/Louisiana Generating, LLC (including West Memphis, North Little Rock and Conway)

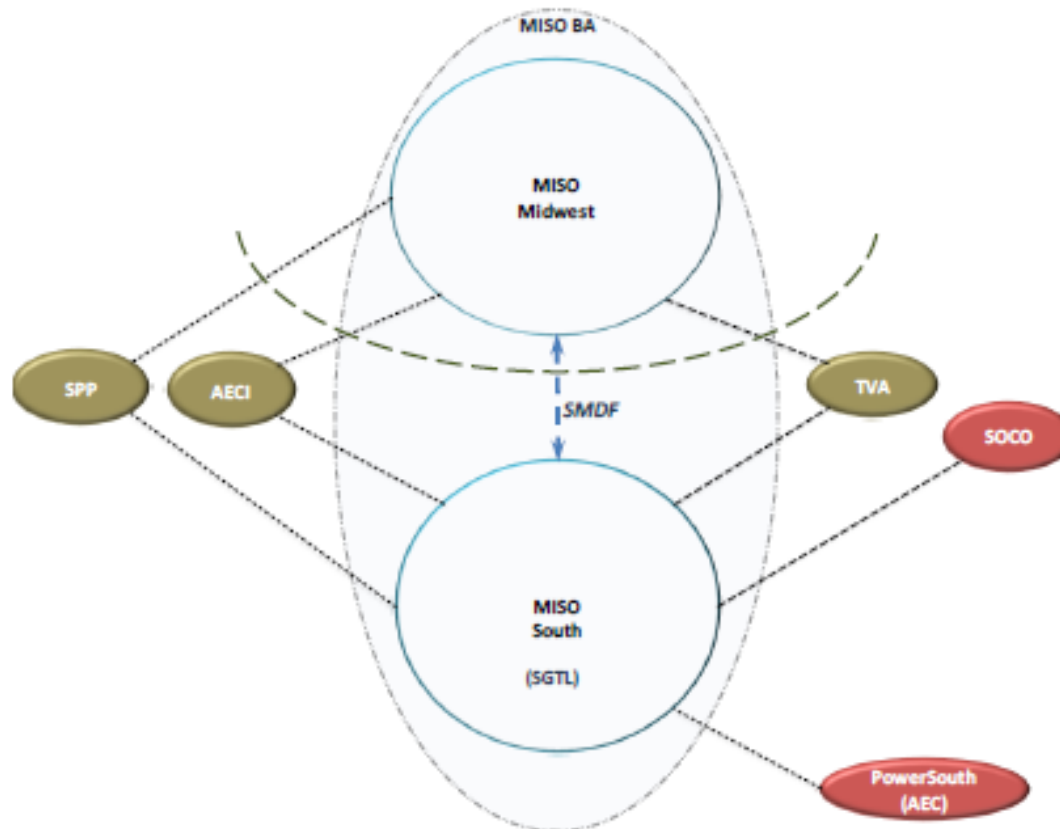


## MISO/Entergy Integration

- The Joint Parties (SPP, TVA, Southern, AECI, PowerSouth, Louisville Gas and Electric, and Kentucky Utilities) entered into an Operating Reliability Coordination Agreement (ORCA) with MISO.
- The ORCA provides a long term road map for coordination and study between the Parties to ensure reliability in the consolidated MISO BA that stretches from the gulf coast through middle America to the US Canadian border.



# MISO/Entergy Integration





## ORCA Phase Description

Phase 1	Phase 2	Phase 3
<b>Through April 19 2014*</b>	<b>Through Oct. 01 2014*</b>	<b>Through April 01 2015</b>
2000MW Dispatch Flow Limit	Dispatch Flow limit set with two day ahead process*	Dispatch Flow limit set with one day ahead process*
MISO adjusts Dispatch Flow between 1500MW and 2000MW for congestion	Respect 2 day ahead Dispatch Flow limit	Respect 1 day ahead dispatch flow limit
If Dispatch Flow < 1500MW, use pre-existing congestion management processes (TLR)	If Dispatch Flow < 2 DA Limit, use pre-existing congestion management processes (TLR)	If Dispatch Flow < 1 DA Limit, use pre-existing congestion management processes (TLR)
Use Intra-day adjustment process to increase limit*	Use Intra-day adjustment process to increase limit*	Use Intra-day adjustment process to increase limit*
Develop Phase 2 process	Develop Phase 3 process	Develop Seams Agreement

\* or upon completion of testing and validation



## ORCA Implementation Status

- MISO and Joint Parties are working on key provisions of the ORCA
  - ORCA was filed and is part of MISO tariff. MISO cannot change or deviate from terms of agreement
- Criteria to identify <5% flowgates
  - Goal is to develop efficient localized processes that do not unnecessarily impede BES transactions
    - ORCA provides implementation of proactive, efficient, reciprocal localized mitigation processes for control of congestion on non-coordinated flowgates
    - Joint Party position includes use of Dispatch Flow and/or Dispatch Flow limit restrictions to manage congestion on non-coordinated flowgates. Per ORCA, should only use in the event localized mitigation is unavailable or deemed to be ineffective
- Intra-Day Total Dispatch Flow Limit
  - Purpose is to ensure that the system is operated to the System Operating Limit (SOL) and is not artificially constrained by the Dispatch Flow limit
    - Initial agreement to move forward as part of Dispatch Flow methodology compromise.
    - Joint Parties have linked issue with resolving process for handling non-coordinated flowgates
- Operational Transition Period (OTP) Phase 2 Limits
  - MISO has presented proposal to Joint Parties. Discussion continues.





## Operations Since Integration

- Operations since integration continue to go well
  - Consistent with the goals of the ORCA
    - Conservative operating protocol during transitional period allowing operators to gain experience with potentially changing flow patterns
- Dispatch Flow reliably managed using unit commitments and binding constraints in the Security Constrained Economic Dispatch
  - Operator communications with TVA and SOCO have gone well and have occurred when Dispatch Flow approached or exceeded the 2000 MW temporary Dispatch Flow limit
  - Significantly reduced TLRs in South Region RC Area since integration
    - Market dispatch is working well to manage congestion

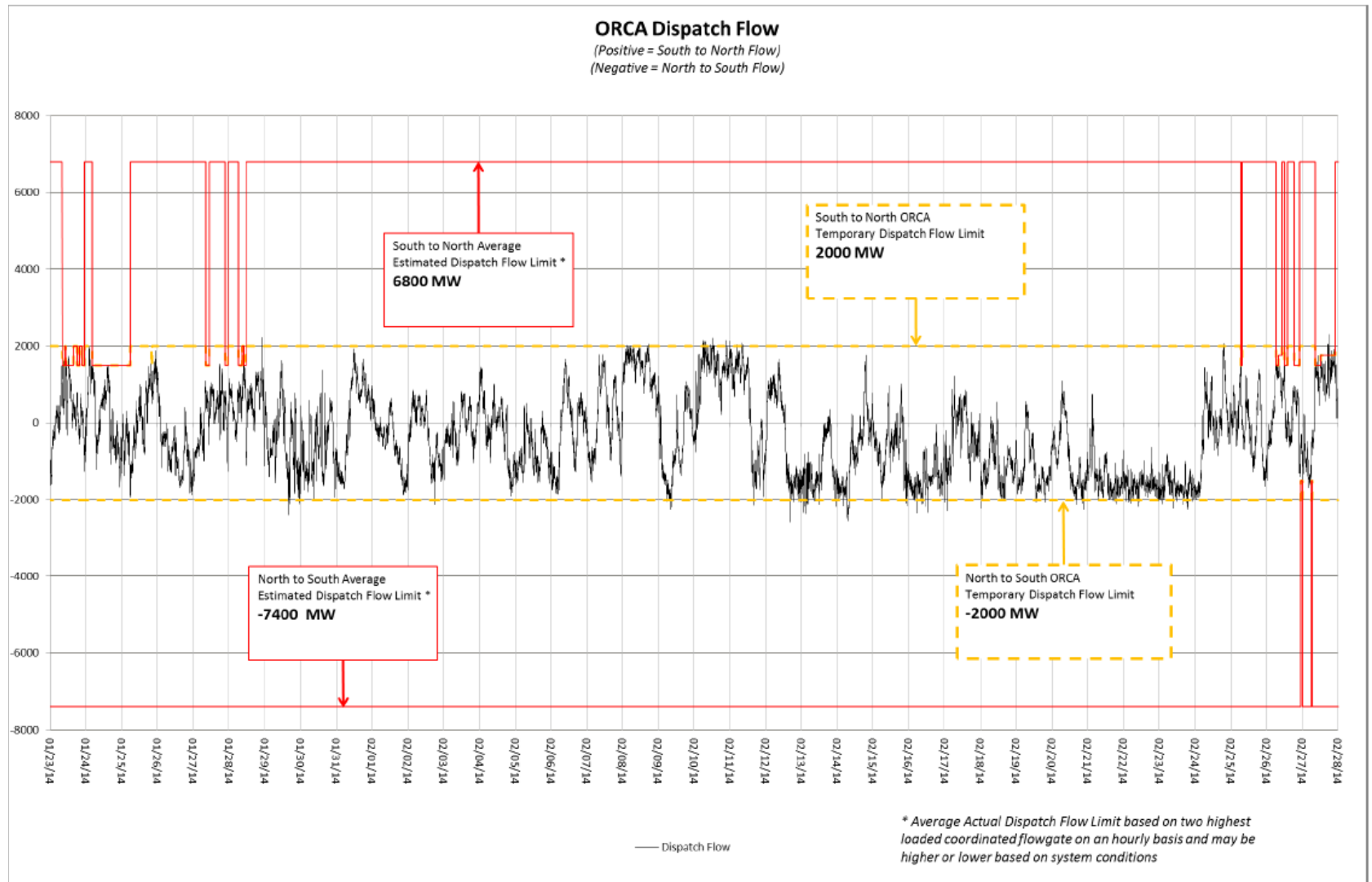


## Operations Since Integration (cont.)

- 2000MW dispatch flow limit continues to be extremely conservative
  - In general, flows in TVA and SOCO have been 90% or less on monitored coordinated flow gates of their System Operating Limits (SOLs) when Dispatch Flow reached or exceeded 2000 MW
  - There continues to be additional transfer capability
    - Exceptions have been during extreme cold conditions in Northeast
    - Unusual level of Northeast imports results in large parallel flows across TVA system causing congestion on Volunteer-Phipps Bend flowgate
      - Not driven by MISO South-Midwest Dispatch Flows
    - TLR and Normal RC to RC coordination have worked well to manage congestion



# North Carolina Transmission Planning Collaborative





## MISO SMWG/Market Subcommittee

- SPP JOA & ORCA related issues get a lot of discussion in the MISO SMWG & Market Subcommittees on how they affect operations and planning.
- Changing Dispatch Flow Methodology in MISO South to control flow on interface to be based on Gen – Load less approximate impact of transactions.



## SPP Complaint at FERC

- Related to SPP's concern about EES integration into MISO
- FERC sided with MISO on use of SPP's contract path capacity - a single 1000 MW connection
- DC Circuit Court of Appeals vacated and remanded FERC's ruling – arbitrary & capricious
- SPP has sent MISO bill for transmission service



- Continue to monitor ORCA implementation activities
- Provide report on activities and related issues at future TAG Meetings.



# *Questions ?*





# Regional Studies Reports

**Bob Pierce - Duke**





# DOE National Congestion Study



## **Recent Nation-wide Trends Affecting Transmission Constraints and Congestion Since the 2009 Congestion Study**

- Transmission constraints and congestion are influenced both by broad, economy-wide trends or conditions and by unique regional and sometimes local circumstances.
- Several broad, nation-wide trends have affected transmission usage patterns since the publication of the 2009 Congestion Study. Most, but not all, of these trends have tended to reduce the incidence of congestion and its economic costs.

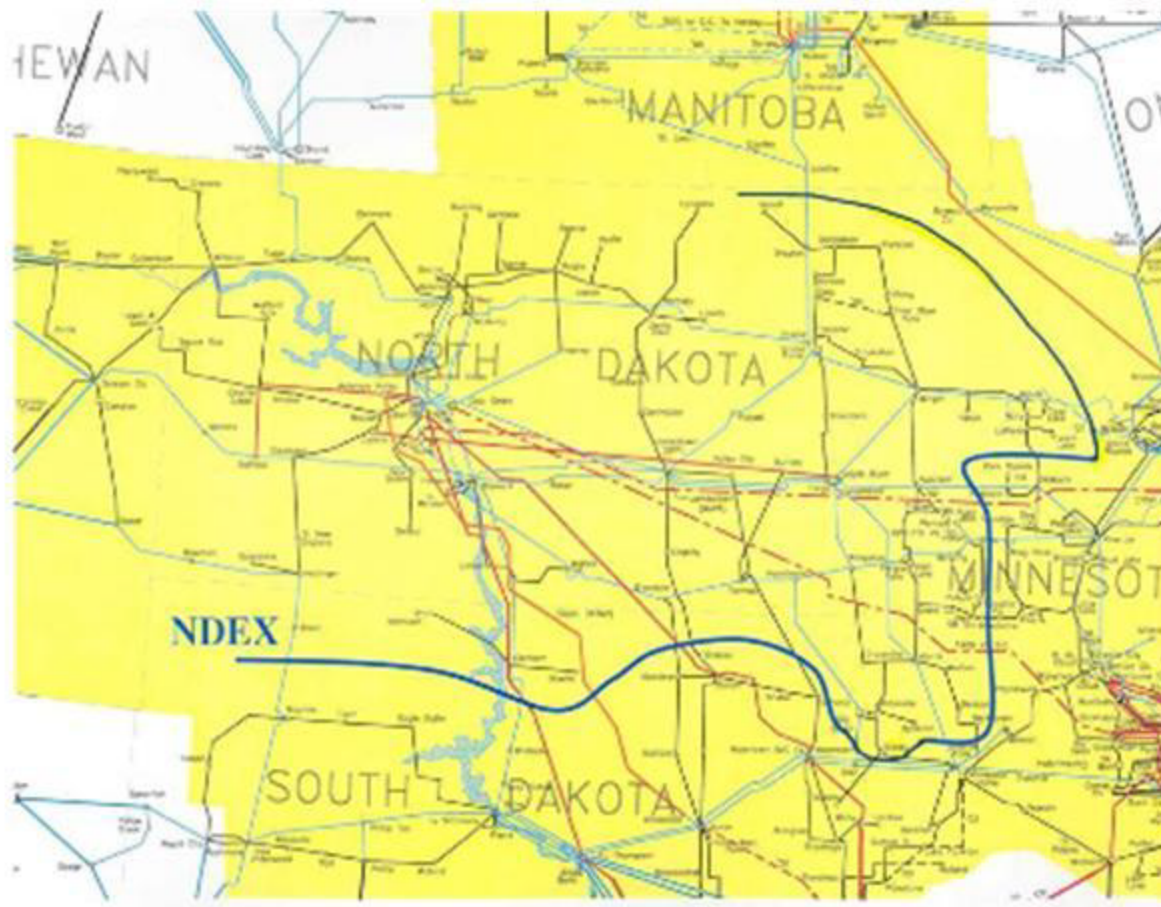


### **These trends are:**

- Modest economic growth since the end of the 2008 recession. Slower economic growth has reduced the rate of electricity demand growth. Lower electricity demand frequently means lower transmission usage and lower congestion.
- State and federal governments and many utilities are implementing policies to improve energy efficiency. These improvements in efficiency put downward pressure on electricity demand across the country.
- Compliance with state RPSs requirements. In response to the RPSs, renewable output has risen sharply. Increased generation from renewables in remote locations, though generally beneficial, is increasing congestion in some areas. The following slide shows the North Dakota Export Limit (NDEX), a long constraint that crosses parts of North Dakota, Minnesota, and South Dakota.



## North Carolina Transmission Planning Collaborative





## **North Carolina** Transmission Planning Collaborative

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- Abundant supplies of natural gas, at low prices. Two effects:
  1. Some gas-fired generators are being used more intensively, and some coal-fired generators are being used less intensively. Because the gas plants are often sited closer to load centers than the capacity being displaced, transmission usage and congestion are reduced.
  2. Lower natural gas costs mean somewhat lower overall fuel costs for generation, and lower overall wholesale electricity prices. This means that even if a transmission constraint forces a buyer to purchase from an alternate generator, the cost premium to the buyer may be lower than previously.
  
- Construction of major new transmission projects in many areas has also helped to reduce congestion.



- New environmental regulations affect the composition and usage of regional generation fleets. As coal-fired and other plants are retired or retrofitted, grid operators will modify dispatch patterns according to the economics of available generation and transmission capacity in relation to fluctuating electricity demand. Appropriate actions will be taken to maintain grid reliability, but congestion may increase or decrease in specific locations. The full effects of this complex interaction will not be known for several years.
  
- Recent trends in retirement of both nuclear and coal-fired power plants have been changing generation profiles in many areas of the country.



### **Regional Findings: Southeast**

The Southeast region covers North and South Carolina, Tennessee, Arkansas, Georgia, Alabama, Mississippi, Louisiana, Florida and parts of (non-ERCOT) Texas. It includes some or all of the NERC regions of SERC, SPP and FRCC (Florida).

The Department's findings regarding congestion in the Southeast are:

- There are no clear trends in the application of administrative congestion management procedures over the period 2006-2011 with the exception of an increase in level 5 TLR's called by ICTE (Entergy's Independent Coordinator of Transmission).
- There are no reports of persistent transmission constraints within the region.
- Transmission is being built in coordination with generation additions following long-standing planning practices overseen by state and regional protocols.



- The DOE has asked for comments from governors, state PUC chairs, and heads of regional entities. After reviewing and considering responses and suggestions concerning this draft, the DOE plans to make any appropriate changes and then release the revised draft for public comment.
- After the close of the public comment period, the DOE will review and consider all comments received, make changes as appropriate, and issue a final version of the *National Electric Transmission Congestion Study*.





# **Southeast Inter-Regional Participation Process (SIRPP)**



# SIRPP

Final Cases are posted and preliminary study results should be available in early April



# SIRPP

## ➤ Finalize 2014 economic studies scope

No.	Requestor	Source	Sink	Amount (MW)	Step 2?	Year
1	Deral Danis, Clean Line Energy	Shelby	TVA/SOCO	3500	Yes	2018
2	Deral Danis, Clean Line Energy	Sullivan	PJM/VACAR	3500	Yes	2018
3	Wayne Van Liere, LG&E/KU	TVA	LG&E/KU	700	No	2016
4	Bob Carbonaro, Santee Cooper	Duke	Santee Cooper	500	No	2015
5	Bob Carbonaro, Santee Cooper	SOCO	FRCC	500	No	2015

	To be studied
	Not to be studied



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



# **Carolinas Offshore Wind Integration Case Study (COWICS)**



# COWICS

## PHASE II

Task 4, Stability Analysis

Task 5, Operation Reliability Assessment

Task 6, Production Cost Analysis



# **SERC Long Term Study Group Update**



# **SERC Long Term Study Group**

- Building 2014 series of LTSG cases





# Eastern Interconnection Planning Collaborative (EIPC)



# EIPC

- Refining stakeholder scenario analyses –  
Drought Study



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



# NERC Reliability Standards Update



- TPL-001-4 approved by FERC decision but required additional requirements for study of known planned outages in NTPH, no word from FERC
- BES definition – new guideline document
- DEC – preparing for SERC audit in May



# *Questions ?*





# 2014 TAG Work Plan

**Rich Wodyka**  
**ITP**



# 2014 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

## Enhanced Access Planning Process

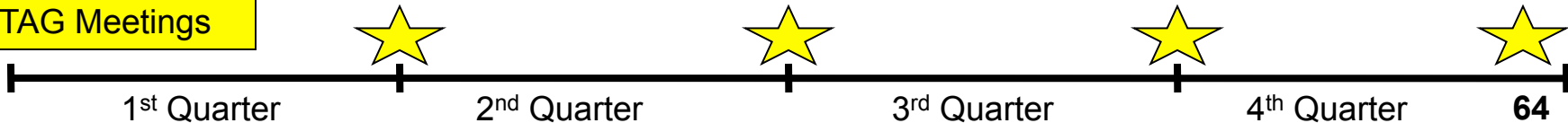
- Propose and select enhanced access scenarios and interface
  - Perform analysis, identify problems, and develop solutions
  - Review Enhanced Access Study Results

## Coordinated Plan Development

- Combine Reliability and Enhanced Results
  - OSC publishes DRAFT Plan
  - TAG review and comment

## FERC Order 1000 Updates

TAG Meetings







## ***2014 TAG Work Plan***

### **January – February**

- **2014 Study – Finalize Study Scope of Work**
  - ✓ **Receive final 2014 Reliability Study Scope for comment**
  - ✓ **Review and provide comments to the OSC on the final 2014 Study Scope**
  - ✓ **Receive request from OSC to provide input on proposed Enhanced Transmission Access scenarios and interfaces for study**
  - ✓ **Provide input to the OSC on proposed Enhanced Transmission Access scenarios and interfaces for study**



**March 11, 2014**

***TAG Meeting***

➤ **2014 Study Update**

- ✓ **Receive a progress report on the Reliability Planning study activities**

➤ **Order 1000 Update**

- ✓ **Receive an update on the NCTPC activities as they relate to Order 1000 compliance**

➤ **Operations Reliability Coordination Agreement (ORCA)**

- ✓ **Receive an update on the ORCA activities**



## **April - May - June**

### **➤ 2014 Study - Technical Analysis, Problem Identification, and Solution Development**

- 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**
- TAG will be requested to provide input to the OSC and PWG on any proposed alternative solutions to the problems identified through the technical analysis**



## **April - May - June**

### ***TAG Meeting***

#### **➤ 2014 Study Update**

- Receive a progress report on the Reliability Planning study activities and preliminary results
- Receive update status of the upgrades in the 2013 Collaborative Plan

#### **➤ Order 1000 Update**

- Receive an update on the NCTPC activities as they relate to Order 1000 compliance

#### **➤ Operations Reliability Coordination Agreement (ORCA)**

- Receive an update on the ORCA activities



## **July - August - September**

### **➤ 2014 Study Update**

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

### **➤ 2014 Selection of Solutions**

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



## **July - August - September**

### ***TAG Meeting***

#### **➤ 2014 Study Update**

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

#### **➤ Order 1000 Update**

- Receive an update on the NCTPC activities as they relate to Order 1000 compliance**

#### **➤ Operations Reliability Coordination Agreement (ORCA)**

- Receive an update on the ORCA activities**



## **October - November - December**

### **➤ 2014 Study Update**

- Receive and comment on final draft of the 2014 Collaborative Transmission Plan report**
- Discuss potential study scope for 2015 studies**



# **October - November - December**

## ***TAG Meeting***

### **➤ 2014 Study Update**

- Receive presentation on the draft report of 2014 Collaborative Transmission Plan**
- Discuss potential study scope for 2015 studies**

### **➤ Order 1000 Update**

- Receive an update on the NCTPC activities as they relate to Order 1000 compliance**

### **➤ Operations Reliability Coordination Agreement (ORCA)**

- Receive an update on the ORCA activities**





# Questions ?





**TAG**  
**Open Forum Discussion**

*Comments or Questions?*