TAG Meeting
December 7, 2015

ElectriCities Office
Raleigh, NC

TAG Meeting Agenda

1. Administrative Items – Rich Wodyka
2. Joint Inter-Regional Study Follow up Report – Sam Waters
3. Western Carolina Modernization Project Update – Sam Waters
4. 2015 Collaborative Transmission Plan Study Report – Orvane Piper
5. 2016 Study Scope Discussion – James Manning
6. Operations Reliability Coordination Agreement (ORCA) Report – Bob Pierce
7. Regional Studies Update – Bob Pierce
8. 2015 TAG Work Plan Update and 2016 TAG Work Plan Preview – Rich Wodyka
9. TAG Open Forum – Rich Wodyka

Status Report on the Joint NCTPC/MISO/PJM Study of the PJM 2016/17 Base Residual Capacity Auction Results

Presented at the NCTPC Transmission Advisory Group

by

Sam Waters

General Manager, Transmission Planning

Duke Energy

December 7, 2015

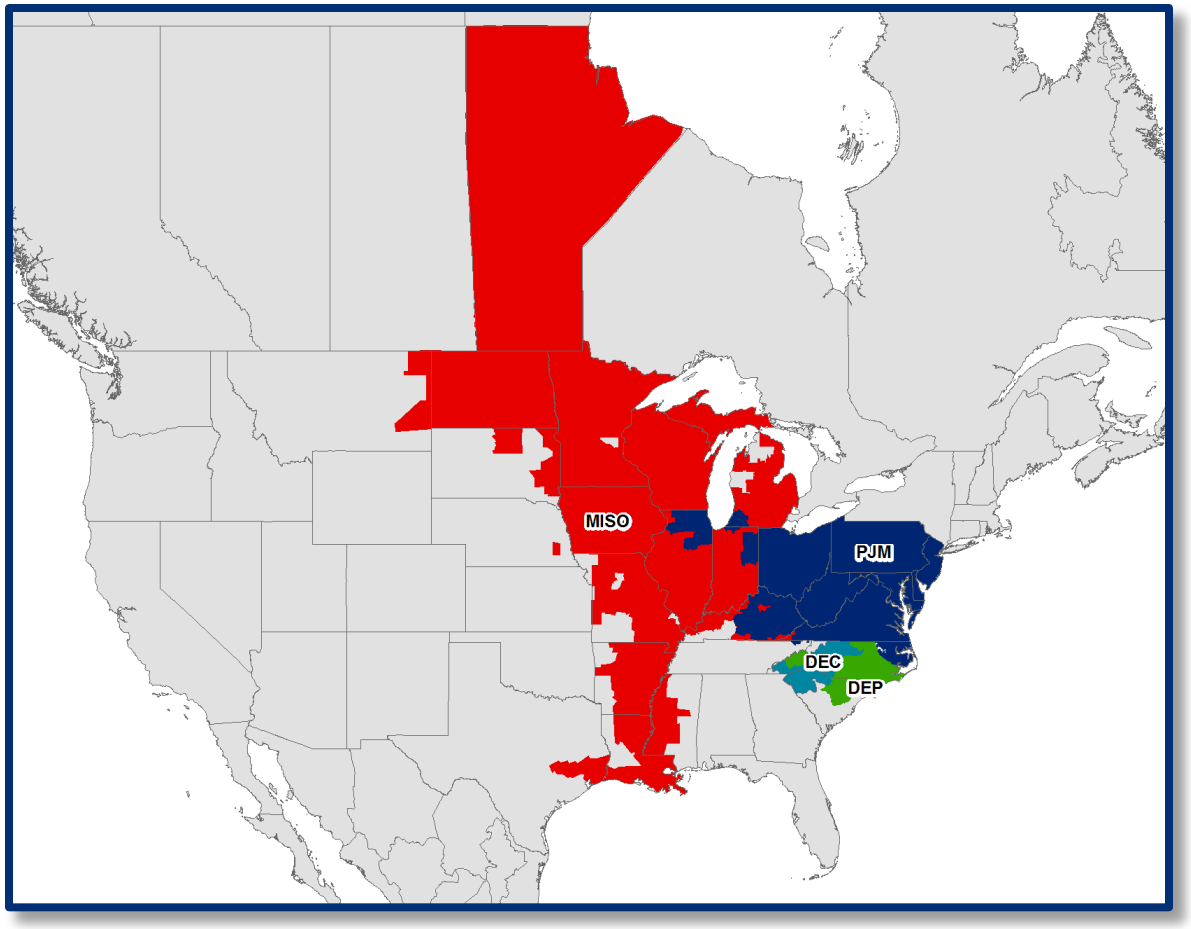
Joint Study

- **In December of 2013, the NCUC requested that the NCTPC, PJM and MISO jointly address whether imports into PJM from MISO resulting from the capacity auction (Base Residual Auction) conducted by PJM for the 2016/17 delivery year would exacerbate loop flows on the transmission grid in North Carolina. Specifically the study participants were asked:**

  1. **Whether such potential congestion would likely require Duke Energy Carolinas (DEC) and Duke Energy Progress (DEP) to alter their joint dispatch in a manner that increases costs for North Carolina customers; and**

  2. **Whether the planned imports would reduce the reliability of the transmission grid serving North Carolina.**

Joint Study



Geographical representation of the study areas

Joint Study

Current Status

- **The study was completed and results presented to the TAG on October 9, 2015.**

- **As a followup to a 9/30/15 meeting at PJM, a conference call was held on October 30 to discuss future steps to ensure coordination between PJM and the NCTPC/Duke on issues related to capacity auctions.**

  PJM issued a letter to Sam Waters at Duke Energy on November 20, providing:

  - ✓ **A link to the methodology used by PJM in calculating the Capacity Import Limit used in capacity market clearing.**
  - ✓ **A commitment to review with Duke Energy the capacity limiting facilities on the Duke energy system.**
  - ✓ **A commitment to provide a listing of the cleared resources identified in future capacity market base residual auctions.**

- **The operating guide agreed to by PJM and Duke Energy has been finalized and signed.**

Joint Study

Next Steps

Confirmation of the completion of the Joint Study requested by the NCUC will be communicated back to the Commission, with a description of the Operating Procedure agreed to and the commitments for future activities from PJM.

Questions ?

Update on Plans for Serving the Asheville Area

Presented at the NCTPC Transmission Advisory Group

by

Sam Waters

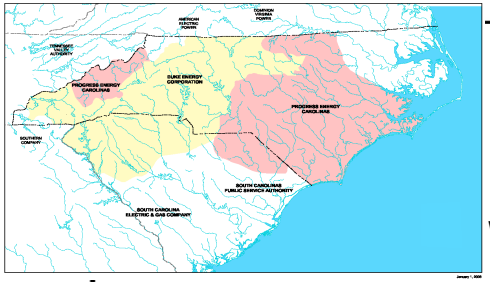
General Manager, Transmission Planning

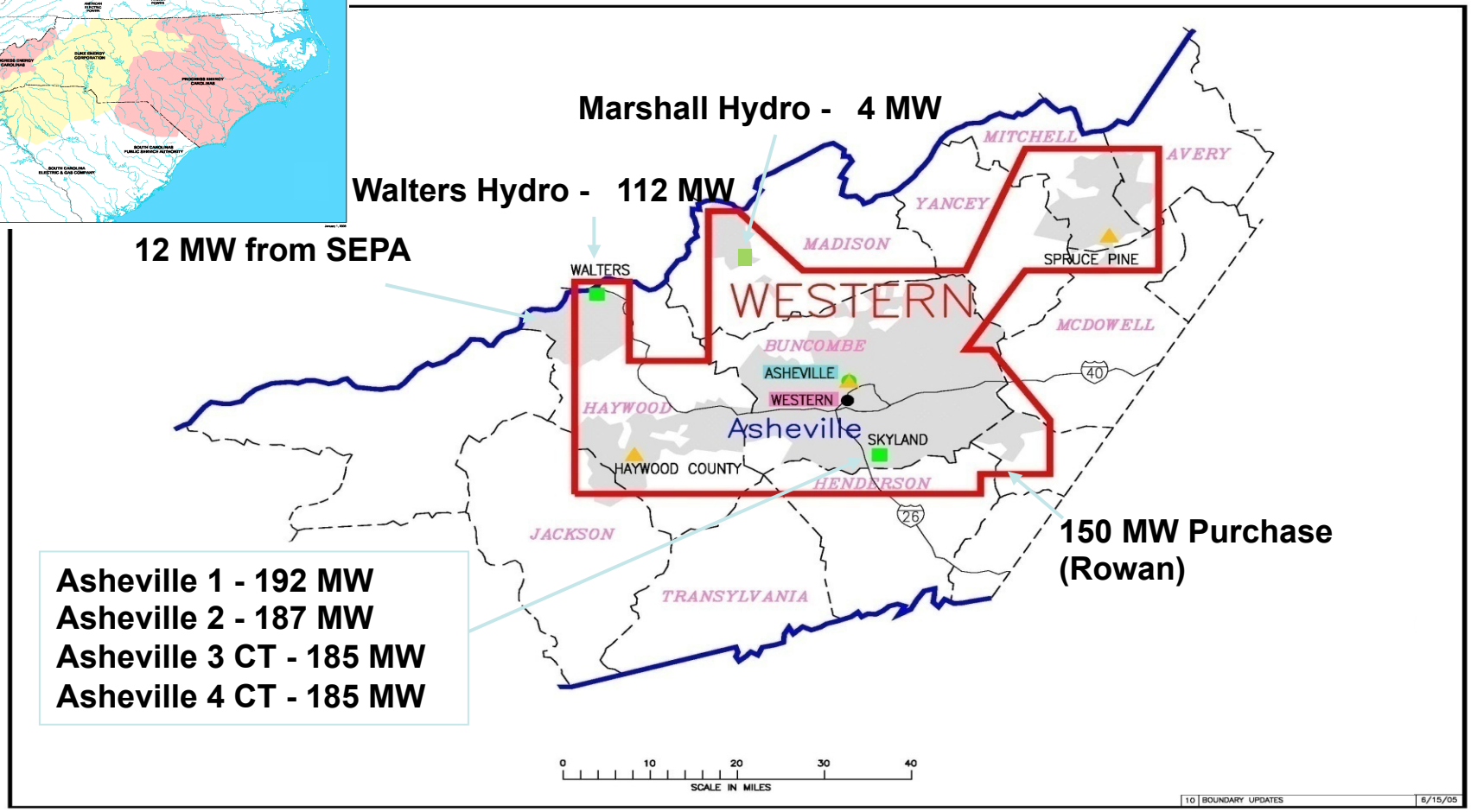
Duke Energy

December 7, 2015

Serving the Asheville area and meeting environmental requirements

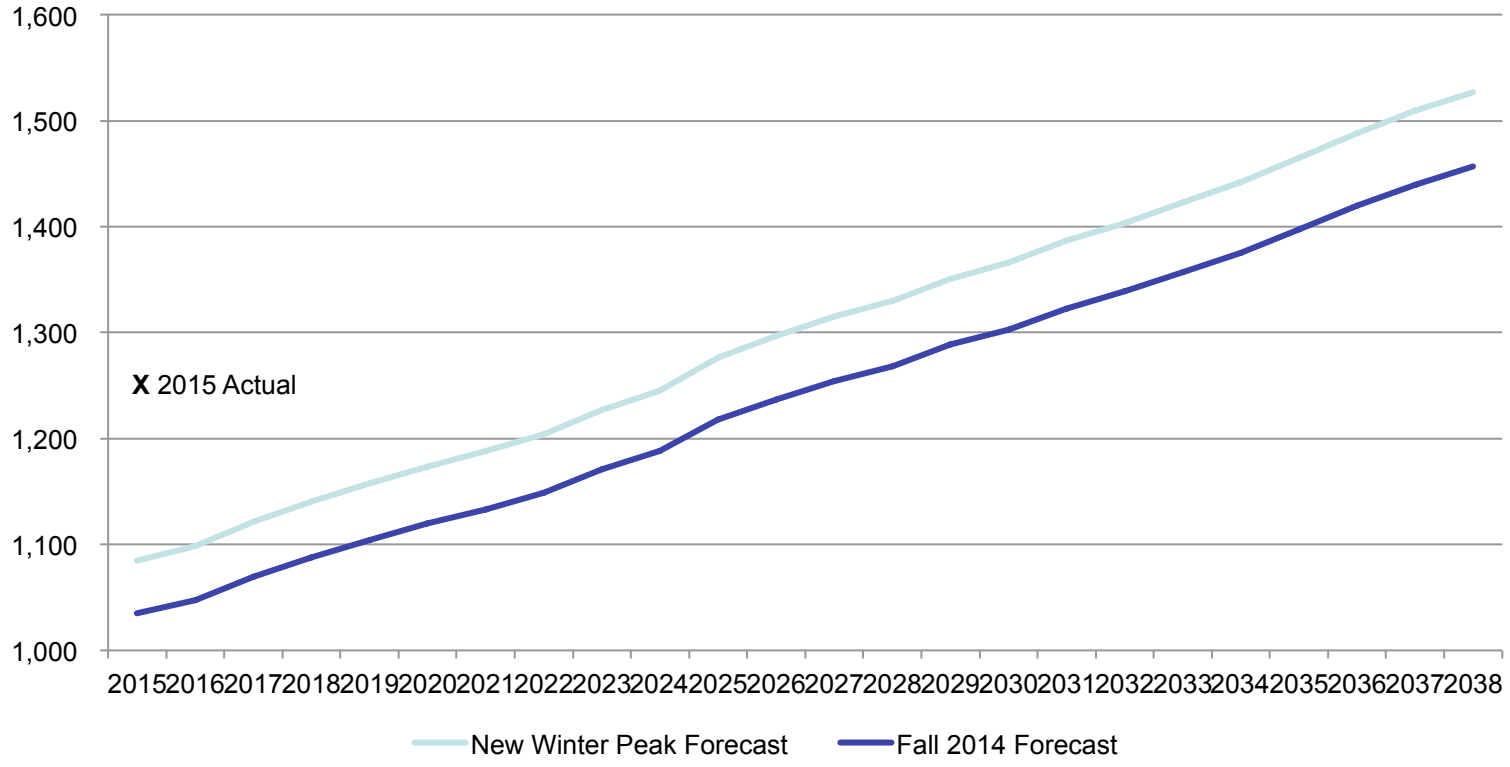
- In 2013/2014, the reality of reduced natural gas prices led to examination of possible additional transmission capacity into the Asheville area to alleviate uneconomic dispatch of the existing coal units. Recently experienced winter peak demands and expected load growth also factored into the studies.
- Coal ash issues and the issuance of the Clean Power Plan added consideration of closing the existing coal units to reducing their operating hours. The possibility of expansion of natural gas supplies into the region enhanced the viability of replacing the coal units with combined cycle capacity, but also put pressure on the decision schedule.
- In May, 2015, Duke Energy proposed the Western Carolinas Modernization Project (WCMP), which included the Foothills substation and transmission line to add 600 MW of firm transmission service into Asheville, as well as shutdown and replacement of the coal units with a 700 MW 2X1 combined cycle. This plan was the most economic means of closing the coal units, adding new capacity for current and future loads, and ensuring long term reliability to 2030 or beyond.
- After significant public opposition, Duke Energy has withdrawn the WCMP plan, and proposed an alternative plan with 2-1X1 combined cycles and no new transmission lines into the Asheville area. Existing transmission ties into Asheville would be upgraded if additional transmission capacity is needed. Upgrades will be examined as part of the 2015/16 planning cycle.





Total available resources – 1,027 MW plus 400 MW of firm E-W transmission

Asheville Winter Peak Forecast



Actual peak demand – 1,183 MW (2014)

Cold and wind will continue to punish Upstate, threaten power (2/17/15 Greenville News)

Transmission Projects Included in the WCMP

DEP Projects

- Construction of a new 700-750 MW 2X1 Combined Cycle
- Construction of Craggy-Enka 230 kV Line
- Replace transformer banks at Asheville Plant
- Add capacitors, terminations, replace breakers

  Total transmission cost ~$60 million*

DEC Projects

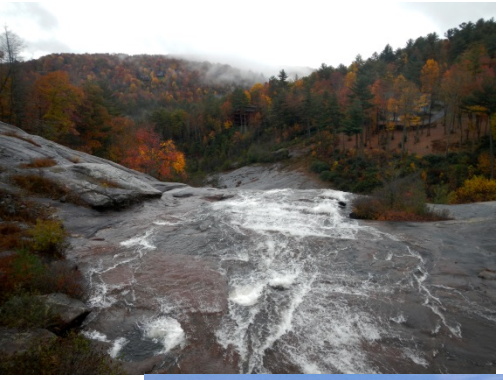
- Construct Foothills 500/230 kV Substation on existing 500 kV line
- Construct Foothills 230 kV Double Circuit to Asheville (~40 miles)
- Upgrade existing 100 kV lines (~ 11 miles)
- Add capacitors, shunt reactors, ancillary upgrades

  Total transmission cost ~ $173 million*

Note that these transmission projects are identified as the result of formal Transmission Service Requests.

* Results from early TSR studies

MAP REMOVED per
CEII REQUIREMENTS



Western NC is a tough place to build new transmission (or anything else)

A series of public hearings was held regarding the siting of the proposed Foothills line. Population in Western NC may be sparse, but they are vocal:

Duke received 9k comments on modernization project. Public meetings were attended by as many as 300-400 participants. Some of the headlines in local newspapers:

In North Carolina, power line foes challenge Duke's energy demand forecast

In Western North Carolina, landowners, conservationists concerned about Duke project

Editorial: Independent study needed on power line

Alliance forms to oppose Duke transmission line from Asheville to Campobello

Current status of planning for the Asheville area:

- **The large 2X1 combined cycle has been replaced by 2 smaller 1X1 units approximately 250-280 MW each**
- **The 600 MW TSR through DEC has been withdrawn and not replaced with a subsequent request at this time**
- **The Foothills substation and transmission line are being cancelled**
- **The new Craggy-Enka line in DEP-West has been deferred**
- **No line upgrades in DEC are planned at this time, but will be examined in the next planning cycle.**

						Asheville Planning and Operating Reserves - Winter									
Assumes rollover of existing 150 MW firm transmission reservation and updated forecast															
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Winter Peak Demand (Estimated updated forecast)	1,082	1,093	1,110	1,129	1,146	1,170	1,187	1,199	1,214	1,243	1,259	1,278	1,297	1,310	1,333
DSM/Conservation Impact	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Winter Peak Demand	1,082	1,093	1,110	1,129	1,146	1,170	1,187	1,199	1,214	1,243	1,259	1,278	1,297	1,310	1,333
Generation Resources															
Asheville Unit 3 CT	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185
Asheville Unit 4 CT	185	185	185	185	185	185	185	185	185	185	185	185	185	185	185
Walters Hydro	112	112	112	112	112	112	112	112	112	112	112	112	112	112	112
Marshall Hydro	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Asheville Unit1 Coal	192	192	192	192	-	-	-	-	-	-	-	-	-	-	-
Asheville Unit 2 Coal	187	187	187	187	-	-	-	-	-	-	-	-	-	-	-
Asheville 1x1 CC #1					280	280	280	280	280	280	280	280	280	280	280
Asheville 1x1 CC #2					280	280	280	280	280	280	280	280	280	280	280
Total Generation Capability	865	865	865	865	1046	1046	1046	1046	1046	1046	1046	1046	1046	1046	1046
Purchased Power	150	150	150	150	0	0	0	0	0	0	0	0	0	0	0
Firm Transmission Reservations F-W	550	550	550	550	550	550	550	550	550	550	550	550	550	550	550
Transmission Reserve M	200	200	200	200	280	280	280	280	280	280	280	280	280	280	280
Total Import Capability - Existing	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750
Incremental Transmission import Capability	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Import Capability - Existing	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750
Import Capability Available above firm + TRM	0	0	0	0	-80	-80	-80	-80	-80	-80	-80	-80	-80	-80	-80
RESERVE CALCULATIONS															
Firm Import required to meet peak demand - no contingencies	67	78	95	114	100	124	141	153	168	197	213	232	251	264	287
Firm transmission available	400	400	400	400	550	550	550	550	550	550	550	550	550	550	550
Net firm transmission available above peak import needs - no contingency	333	322	305	286	450	426	409	397	382	353	337	318	299	286	263
Net import capability available above peak import needs - no contingency	683	672	655	636	650	626	609	597	582	553	537	518	499	486	463
First contingency loss of generation	192	192	192	192	280	280	280	280	280	280	280	280	280	280	280
Net firm transmission available above peak import needs - first contingency	141	130	113	94	170	146	129	117	102	73	57	38	19	6	(17)
Net import capability available above peak import needs - first contingency	491	480	463	444	370	346	329	317	302	273	257	238	219	206	183
Second contingency loss of generation	187	187	187	187	280	280	280	280	280	280	280	280	280	280	280
Net firm transmission available above peak import needs - second contingency	(46)	(57)	(74)	(93)	(110)	(134)	(151)	(163)	(178)	(207)	(23)	(242)	(261)	(274)	(297)
Net import capability available above peak import needs - second contingency	304	293	276	257	90	66	49	37	22	(7)	(23)	(42)	(61)	(74)	(97)

The new plan will buy a few years before additional resources or transmission lines are needed , assuming a return to "normal" peaks, and maintaining current import capability.

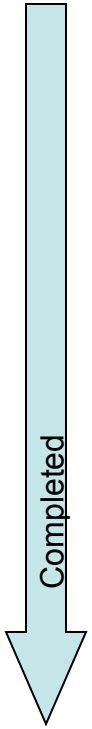
Questions ?

2015 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

Study Assumptions

- Western Carolinas Modernization Transmission Projects included in the models
- Asheville 1 and 2 coal units not available for dispatch
  - Proposed combined cycle plant in Asheville not included
- 150 MW DUK-CPLW transfer terminated after 2019
- 1000 MW of CPLE-CPLW transfer capability
  - Summer models will use 600 MW of CPLE-CPLW transfer
  - Winter models will use 700 MW of CPLE-CPLW transfer

Studies for 2015

- **Annual Reliability Study**
  - **Assess DEC and DEP transmission systems' reliability and develop a single Collaborative Transmission Plan**
- **Resource Supply Option Scenarios**
  - **Assess DEC and DEP interfaces with neighboring systems by modeling hypothetical transfers**
- **Local Economic Study Scenarios**
  - **Assess scenarios submitted by stakeholders**

Annual Reliability Study

- **Study years:**
  - **2020 Summer**
  - **2020/21 Winter**
  - **2025 Summer**

Major Projects in 2015 Plan

Reliability Project	TO	Planned I/S Date
Reconductor Norman 230 kV Lines (McGuire-Riverbend)	DEC	12/15
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

Major Projects in 2015 Plan (Continued)

Reliability Project	TO	Planned I/S Date
Sutton-Castle Hayne 115 kV North line Rebuild	DEP	6/18
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
Brunswick #1 – Jacksonville 230 kV Line Loop-In to Folkstone 230 kV substation	DEP	6/24
Durham - RTP 230 kV Line, Reconductor	DEP	6/24

Comparison to Previous Collaborative Transmission Plan

	2014 Plan	2015 Plan
Number of projects with an estimated cost of $10 million or more each	7	8
Total estimated cost of Plan	$209 M	$156 M

Resource Supply Options
Hypothetical Transfers

Resource From	Sink	Test Level (MW)
PJM	DUK	1,000
SOCO	DUK	1,000
SCEG	DUK	1,000
SCPSA	DUK	1,000
CPLE	DUK	1,000
TVA	DUK	1,000

Resource Supply Options
Hypothetical Transfers

Resource From	Sink	Test Level (MW)
PJM	CPLE	1,000
SCEG	CPLE	1,000
SCPSA	CPLE	1,000
DUK	CPLE	1,000
DUK	SOCO	1,000

Resource Supply Options
Hypothetical Transfers

Resource From	Sink	Test Level (MW)
PJM	DUK / CPLE	1,000 / 1,000
DUK / CPLE	PJM	1,000 / 1,000
CPLE	PJM	1,000
DUK	PJM	1,000
SOCO	PJM	1,000

Technical Analysis
Hypothetical Transfers

- **No issues were observed that do not have planned mitigation.**

Local Economic Study Request #1

- **661 MW transfer from TVA's Shelby 500 kV Sub to DEC/DEP control areas**
  - **Allocated to DEC and DEP based on share of combined load**
    - **397 MW to DEC**
    - **264 MW to DEP**

Local Economic Study Request #1

- **No issues were observed that do not have planned mitigation.**

Local Economic Study Request #2

- **Forced outage(s) of multiple nuclear units on DEC and DEP systems**
  - **DEC: McGuire 1 & 2, Catawba 1 & 2**
  - **DEP: Harris 1**
  - **Replace generation internally first and then equally from SOCO (2200 MW) & PJM (2200 MW)**
    - **SOCO: 1700 MW to DEC, 500 MW to DEP**
    - **PJM: 1700 MW [AEP] to DEC, 500 MW [DVP] to DEP**

Local Economic Study Request #2

- **Transmission projects required for both DEC and DEP**

Local Economic Study Request #2

Reliability Project	TO	Estimated Cost
Fisher 230 kV (Central-Shady Grove Tap)	DEC	$35 M
Parr 230 kV (VC Summer-Newport)	SCEG/ DEC	$85 M
Newport 500/230 kV	DEC	$20 M
		$140 M

Local Economic Study Request #2

Reliability Project	TO	Estimated Cost
Darlington-(SCPSA)S. Bethune 230 kV Line – Coordinate upgrade with SCPSA	DEP/ SCPSA	$10 M
Convert Camden Jct to a 230 kV Sub and Construct Camden Jct-(SCPSA)Camden 230 kV Line (~5 miles)	DEP/ SCPSA	$18 M
		$28 M

TAG Input Request

- TAG is requested to provide any input to the OSC on the 2015 Collaborative Transmission Plan Study Report.
- Provide input by January 8, 2016 to Rich Wodyka (rawodyka@aol.com)

Questions ?

2016 Study Scope Discussion

James Manning

NCEMC

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 2016

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 2016

2016 Study

- **Base reliability case analysis – 2021 summer and winter and 2026 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 – 2021 / 2026 summer**

Past Studies' Alternate Scenarios

- **Hypothetical Imports/Exports re-evaluated every other year**
  - **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 2016 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 1, 2016 to**

Rich Wodyka – Administrator
(rawodyka@aol.com)

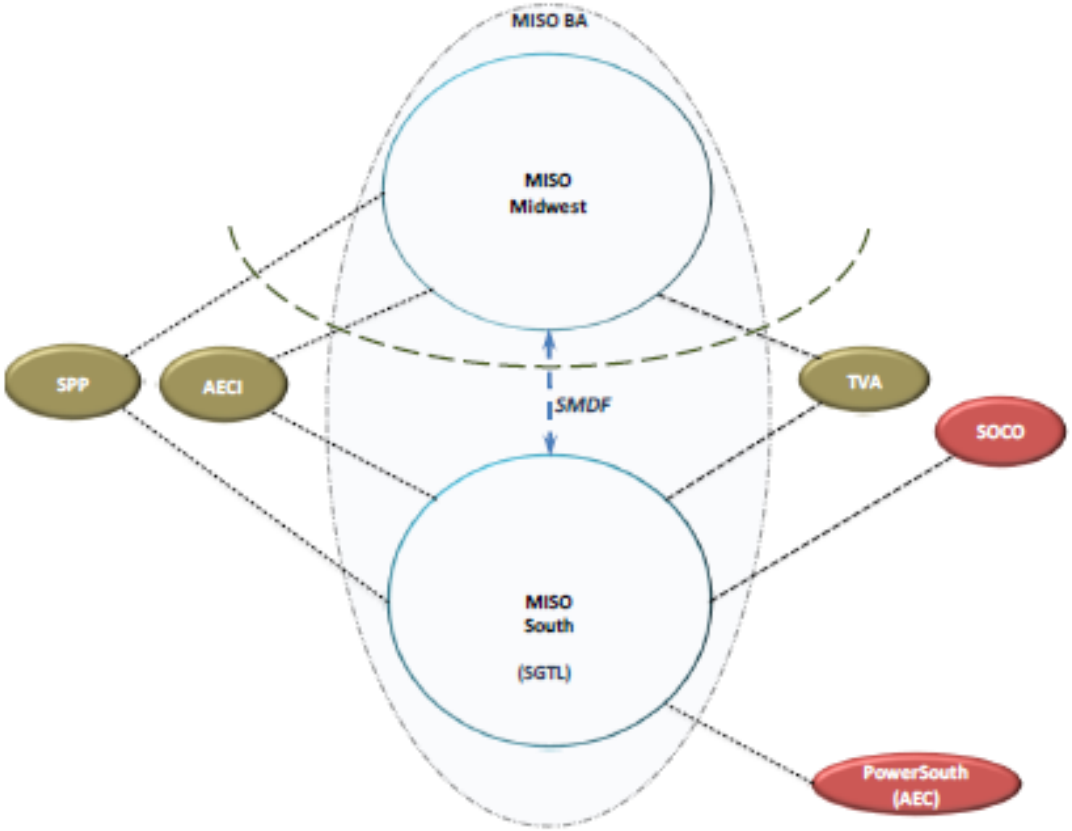
Questions ?

MISO/Entergy Integration Operations Reliability Coordination Agreement (ORCA)

Bob Pierce

Duke Energy Carolinas

MISO/Entergy Integration



Settlement

- ORCA - support Entergy's integration into MISO
- Contentious due to claims by SPP & Joint Parties that this integration was utilizing other transmission systems without adequate compensation or reliability considerations
- Settlement agreement filed with FERC on October 13, 2015

Settlement

- Financial compensation for use of SPP's and the Joint Parties' transmission systems
- FERC Chief Administrative Law Judge approved implementation of the compensation and the transfer limit provisions of the settlement agreement to become effective on February 1, 2016
- Remains in effect pending final Commission approval

Settlement

- MISO will limit its internal transfers over SPP's system to 3,000 MW in the north-to-southbound direction and 2,500 MW in the south-to-northbound direction, unless the settling parties agree otherwise
- FERC Commission Staff Counsel has submitted comments to the FERC Commission (on November 2, 2015) recommending that the Commission accept the settlement
- FERC Commission still needs to issue a final order accepting the settlement

Settlement

- MISO will pay $16 million (or $8 million annually) to settle all claims for compensation for the period of 1/29/14 – 1/31/16, with 60% of that total going to SPP and the remaining 40% going to the joint parties.

- For the period 2/1/16 – 1/31/17, MISO will pay $16 million — split evenly between SPP and the joint parties — "for available system capacity usage in each direction, subject to a true-up based on the actual capacity factor and any compensation adjustments … for that period."

Settlement

- For the remaining years of the settlement period, compensation will be calculated until the initial term of the agreement expires on 1/31/21, according to a formula based on the capacity factor for the prior year. Thereafter, the agreement will be subject to annual 12-month extensions until one or more party provides notice of its wish to terminate the deal.

Questions ?

Regional Studies Reports

Bob Pierce

Duke Energy Carolinas

SERC Long Term Study Group Update

SERC Long Term Study Group

- Nearing completion of work on 2015 series of MMWG cases
  - Includes PJM BRA interchange for 2016/17
- 2020 Summer Study Report showed acceptable levels of transfer capability and no unanticipated projects being required
- Report will be publicly available in April 2016

Carolinas Transmission Coordination Arrangement (CTCA)

CTCA

- Studied 2020 and 2026 Summer
- Report posted on NCTPC and OASIS websites

CTCA

TABLE A
DUKE ENERGY PROGRESS
SUMMARY OF POTENTIAL RELIABILITY ISSUES
2020 SUMMER PEAK

	Element	Contingency	Potential Issue	Potential Solution
P01	Rockingham-Wadesboro Tap 230 kV Line	Harris Gd (TRM) Rockingham-West End 230 kV East Line	Loading (99.8 %)	Existing Operating Procedure Opens West End Terminal [2021]
P02	Marion-Dillon Tap 115 kV Line	Brunswick 1 Gd (TRM) Weatherspoon-Latta 230 kV Line	Loading (95.7%)	Existing Operating Procedure Opens Marion Terminal [2023]
P03	Shaw AFB-Eastover (SCEG) 115 kV Line	Robinson 2 Gd (TRM) Sumter-Canadys (SCEG) and Sumter-Wateree (SCEG) 230 kV Lines	Loading (90.0%)	Future Operating Procedure Opens Shaw AFB-Eastover (SCEG) [2026]

CTCA

TABLE C
DUKE ENERGY CAROLINAS
SUMMARY OF POTENTIAL RELIABILITY ISSUES
2020 SUMMER PEAK

	Element	Contingency	Potential Issue	Potential Solution
D01	Great Falls-Wateree 100 kV Line 1/2 (Wateree)	Rainey CC Gm Great Falls-Wateree 100 kV Line 2/1 (Wateree)	Loading (115.1 %)	Existing Operating Procedure [2020]
D02	High Rock-Tuckertown 100 kV Lines (Yadkin Facilities)	Belews Creek 1 Gm Pleasant Garden-Woodleaf 500 kV Line with Shunt Reactor (Godbey)	Loading (115.4 %)	Existing Operating Procedure [2020]
D03	Badin-Tuckertown 100 kV Lines (Yadkin Facilities)	Belews Creek 1 Gm Pleasant Garden-Woodleaf 500 kV Line with Shunt Reactor (Godbey)	Loading (102.6 %)	Existing Operating Procedure [2020]

CTCA

TABLE C (continued)
DUKE ENERGY CAROLINAS
SUMMARY OF POTENTIAL RELIABILITY ISSUES
2020 SUMMER PEAK

	Element	Contingency	Potential Issue	Potential Solution
D07	Parkwood 500/230 kV Transformer 5	Roxboro 4 Gd (TRM) Parkwood 500/230 kV Transformer 6	Loading (100.7 %)	New Operating Procedure [2020] Trip Parallel Bank or Open 500 kV line
D10	Red Rose-Lancaster Retail -Mini Ranch Retail 100 kV Line (Monroe)	Harris Gd (TRM) Morning Star 230/100 kV Transformer 4, Morning Star-Newport 230 kV Line (Sandy Ridge)	Loading (98.5 %)	8.94 miles 2/0 Cu Reconductor [2022]
D15	Beckerdite-Willow Creek 100 kV Line (Linden St Black)	Harris Gd (TRM) Beckerdite-Willow Creek 100 kV Line (Linden St Black)	Loading (100.9 %)	9.74 miles 477 ACSR Reconductor [2020]

CTCA

TABLE D
DUKE ENERGY CAROLINAS
SUMMARY OF POTENTIAL RELIABILITY ISSUES
2026 SUMMER PEAK

	Element	Contingency	Potential Issue	Potential Solution
D17	Stamey-Fourth Creek Tap 100 kV Line (McClain Black)	Belews Creek 1 Gm Stamey-Fourth Creek Tap 100 kV Line (McClain White)	Loading (109.7 %)	9.94 miles 2-477 ACSR Reconductor [2027] Accelerated 7 Years
D18	Mitchell River-Surry Yadkin 7 100 kV Line (Bannertown White)	Belews Creek 1 Gm Mitchell River-Bannertown 100 kV Line (Bannertown Black)	Loading (102.0 %)	6.46 miles 336 ACSR Reconductor [2026] Accelerated 7 Years
D22	Cliffside 230/100/44 kV Transformer A2	Cliffside 5 Gm Cliffside 230/100/44 kV Transformer A1 Close 44 kV Bank A2	Loading (98.9 %)	New Transformer Capacity Needed [2027] Accelerated 2 Years
D23	Beckerdite 230/100 kV Transformer 3	Dan River CC Gm Beckerdite 230/100 kV Transformer 1	Loading (107.2 %)	Replace Existing Bank 2 or 3 with New 400 MVA [2026] Accelerated 4 Years

MAP REMOVED per CEII REQUIREMENTS

Eastern Interconnection Planning Collaborative (EIPC)

EIPC

- Screening results for 2025 S & W presented during stakeholder webinar
- No notable issues identified
- Presentation available on website
- Stakeholder input on scenarios due 1/29/16

EIPC

	Action	Date	Complete
1	EIPC Webinar on Status of Roll-up Case Development and Possible Scenarios for 2016	November 17, 2015	X
2	Post Draft Roll-up Report	December 11, 2015	
3	Regional Meetings:	December - February	
	a. Present 2025S and 2025W roll-up base cases		
	b. Present results of roll-up case contingency and transfer testing		
	c. Additional discussion on possible scenarios		
	d. Stakeholder feedback on possible scenarios and which scenarios to select		
4	Stakeholder Written Input on Possible Scenarios and the Draft Roll-up Report Due	January 29, 2016	
5	Post FINAL Roll-up Report	February 12, 2016	

EIPC

	Action	Date	Complete
6	EIPC Webinar to discuss stakeholder feedback on scenario options and prioritize scenarios to be studied in 2016	February 26, 2016	
7	Stakeholder final comments on the scenarios due to regional process or to EIPC@tva.gov	March 2, 2016	
8	EIPC Consideration of comments on scenario selection and final determination of scenarios	March, 2016	
9	Final scenario descriptions and remaining 2016 Schedule posted	March 21, 2016	
10	SSMLFWG Begins Work on Scenarios	March 31, 2016	

http://www.eipconline.com/

SERTP

SERTP

- 2015 SERTP Annual Transmission Planning Summit and Assumptions Input Meeting, 12/15/15 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

- CIP-014 Physical Security
- TPL-001-4
- Project 2015-10 Single Points of Failure

Questions ?

2015 TAG Work Plan Update

Rich Wodyka
Administrator

2015 NCTPC Overview Schedule

Reliability Planning Process

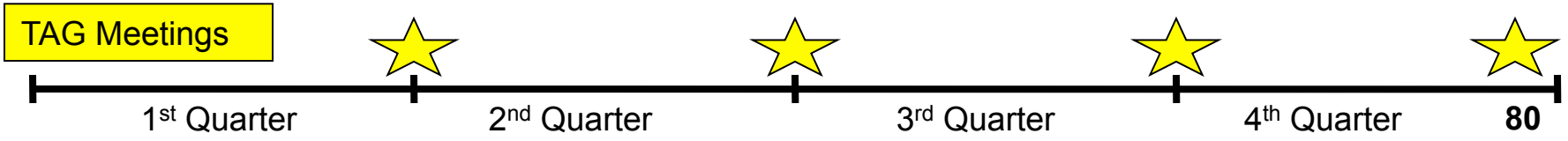
- Evaluate current reliability problems and transmission upgrade plans
- Perform analysis, identify problems, and develop solutions
- Review Reliability Study Results

Local Economic Planning Process

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

Coordinated Plan Development

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



2015 TAG Work Plan

January – February

- **2015 Study – Finalize Study Scope of Work**
  - ✓ **Receive final 2015 Reliability Study Scope for comment**
  - ✓ **Review and provide comments to the OSC on the final 2015 Study Scope**
  - ✓ **Receive request from OSC to provide input on proposed Economic Study scenarios and interfaces for study**
  - ✓ **Provide input to the OSC on proposed Local Economic Study scenarios and interfaces for study**

March

TAG Meeting – March 10th

- **2015 Study Update**
  - ✓ **Receive a progress report on the Reliability Planning study activities**
  - ✓ **Receive a report on the Local Economic Study scope**

- **Operations Reliability Coordination Agreement (ORCA)**
  - ✓ **Receive an update on the ORCA activities**

April - May - June

TAG Meeting – June 8th

- **2015 Study Update**
  - ✓ **Receive a progress report on the Reliability and Local Economic Planning study activities**
  - ✓ **Receive update status of the upgrades in the 2014 Collaborative Plan**

- **Operations Reliability Coordination Agreement (ORCA)**
  - ✓ **Receive an update on the ORCA activities**

July - October

- **2015 Study Update**
  - ✓ **Receive a progress report on the Reliability and Local Economic 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**
- **2015 Selection of Solutions**
  - **TAG will receive feedback from the OSC on any alternative solutions that were proposed by TAG members**

July - October

TAG Meeting – October 12, 2015

- **2015 Study Update**
  - ✓ **Receive a progress report on the Reliability and Local Economic Planning study activities and preliminary results**

- **Operations Reliability Coordination Agreement (ORCA)**
  - ✓ **Receive an update on the ORCA activities**

November - December

- **2015 Study Update**
  - ✓ **Receive and comment on final draft of the 2015 Collaborative Transmission Plan report**
  - ✓ **Discuss potential study scope for 2016 studies**

October - November - December

TAG Meeting – December 7, 2015

- **2015 Study Update**
  - ✓ **Receive presentation on the draft report of 2015 Collaborative Transmission Plan**
  - ✓ **Discuss potential study scope for 2016 studies**

- **Operations Reliability Coordination Agreement (ORCA)**
  - ✓ **Receive an update on the ORCA activities**

Questions ?

2016 TAG Work Plan Preview

Rich Wodyka
Administrator

2016 NCTPC Overview Schedule

Reliability Planning Process

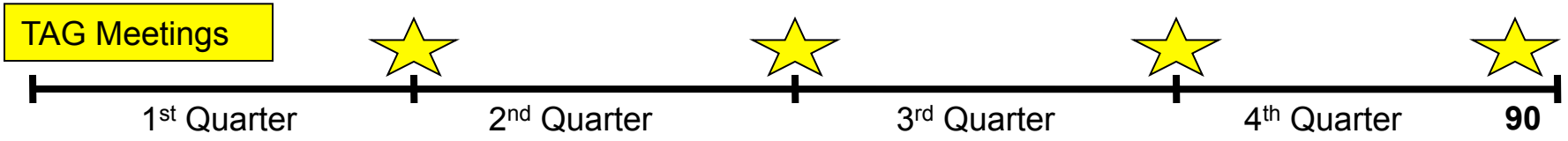
- Evaluate current reliability problems and transmission upgrade plans
- Perform analysis, identify problems, and develop solutions
- Review Reliability Study Results

Local Economic Planning Process

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

Coordinated Plan Development

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



2016 TAG Work Plan

January – February - March

- **2016 Study – Finalize Study Scope of Work**
  - **Receive final 2015 Reliability Study Scope for comment**
    - ***Review and provide comments to the OSC on the final 2016 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**
    - ***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

- **2016 Study Update**
  - **Receive a progress report on the Reliability Planning study activities**
  - **Receive a report on the Local Economic Study scope**

- **Operations Reliability Coordination Agreement (ORCA)**
  - **Receive an update on the ORCA activities**

April - May - June

Second Quarter TAG Meeting – TBD

- **2016 Study Update**
  - **Receive a progress report on the Reliability and Local Economic Planning study activities**
  - **Receive update status of the upgrades in the 2015 Collaborative Plan**

- **Operations Reliability Coordination Agreement (ORCA)**
  - **Receive an update on the ORCA activities**

July – August – September

- **2016 Study Update**
  - **Receive a progress report on the Reliability and Local Economic 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**
- **2016 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

- **2016 Study Update**
  - **Receive a progress report on the Reliability and Local Economic Planning study activities and preliminary results**

- **Operations Reliability Coordination Agreement (ORCA)**
  - **Receive an update on the ORCA activities**

October - November - December

- **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 TBD

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

- **Operations Reliability Coordination Agreement (ORCA)**
  - **Receive an update on the ORCA activities**

Questions ?

TAG
Open Forum Discussion

Comments or Questions ?