TAG Meeting
March 17, 2017

Webinar

DRAFT

TAG Meeting Agenda

1. Administrative Items – Rich Wodyka
2. 2017 Study Activities and Study Scope Update – Orvane Piper
3. Regional Studies Update – Bob Pierce
4. 2017 TAG Work Plan – Rich Wodyka
5. TAG Open Forum – Rich Wodyka

2017 Study Activities and Study Scope Update

Orvane Piper

Duke Energy Carolinas

Studies for 2017

- **Annual Reliability Study**
  - **Assess DEC and DEP transmission systems' reliability and develop a single Collaborative Transmission Plan**
- **Resource Supply Scenarios**
  - **Assess DEC and DEP interface with neighboring systems by modeling hypothetical transfers**
- **No Local Economic Studies or Public Policy Studies submitted for 2017**

2027 Hypothetical Import / Export

Resource From	Sink	Test Level (MW)
PJM	DUK[1]	1,000
SOCO	DUK	1,000
SCEG	DUK	1,000
SCPSA	DUK	1,000
CPLE[2]	DUK	1,000
TVA	DUK	1,000

1 – DUK is the Balancing Authority Area for DEC
2 – CPLE is the eastern Balancing Authority Area for DEP

2027 Hypothetical Import / Export

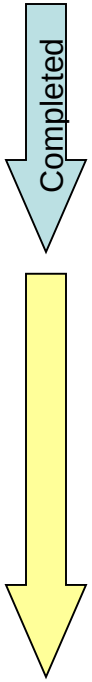
Resource From	Sink	Test Level (MW)
PJM	CPLE	1,000
SCEG	CPLE	1,000
SCPSA	CPLE	1,000
DUK	CPLE	1,000
DUK	SOCO	1,000

2027 Hypothetical Import / Export

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[3]	CPLE	1,000

3 – This hypothetical transfer is intended to evaluate the impact of a 1000 MW Southern Co transaction through the DEC transmission system into CPLE.

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

Study Assumptions Selected

- **Study Year's for reliability analyses:**
  - **Near-term: 2022 Summer, 2022/2023 Winter**
  - **Longer-term: 2027/2028 Winter**
- **LSEs provided:**
  - **Input for load forecasts and resource supply assumptions**
  - **Dispatch order for their resources**
- **Adjustments may be made based on additional coordination with neighboring transmission systems**

Study Assumptions (Cont'd)

DEP Western Area study assumptions:

- Two planned 1x1 combined cycle generating units at Asheville Plant
- Transmission upgrades associated with the installation of the planned generation are modeled

Study Assumptions (Cont'd)

DEP Western Area study assumptions:

- **Imports:**
  - Total of 36-386 MW firm interchange being imported:
    - 0-200 MW from CPLE
    - 0-150 MW from DEC
    - 22 MW from SCPSA
    - 14 MW from TVA
- **Generation**
  - Asheville 1 and 2 coal units shut down for all cases
  - Generation dispatch order:
    - Walters
    - Marshall
    - Asheville 230kV proposed generation
    - Asheville 115 kV proposed generation
    - Asheville CTs

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**

Models and Cases Developed

- **Start with 2016 series MMWG cases**
- **Latest updates to detailed models for DEC and DEP systems will be included**
- **Planned transmission additions from updated 2016 Plan will be included in models**

Technical Analysis

- Conduct thermal screenings of the 2022S, 2022/23W and 2027/28W base cases
- Conduct thermal screenings for hypothetical transfers on 2027/28W case

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 ?

Regional Studies Reports

Bob Pierce

Duke Energy Carolinas

SERC Long Term Study Group Update

SERC Long Term Study Group

- Firm Flow Task Force
- RAWG study support
- 2017 series model development

SERTP

SERTP

- Evaluating 2017 Public Policy proposals
- Building 2017 series SERTP models

http://www.southeasternrtp.com/

NERC Reliability Standards Update

- TPL-001-4
- GMD & EMP
- Solar penetration

TPL-001-4

P5 **Multiple Contingency (Fault plus non-redundant "component of a Protection System" failure to operate)[13]**	**Normal System**	**Delayed Fault Clearing due to the failure of a non-redundant "component of a Protection System"[13] protecting the Faulted element to operate as designed, for one of the following:** **1. Generator** **2. Transmission Circuit** **3. Transformer [5]** **4. Shunt Device [6]** **5. Bus Section**

TPL-001-4

For the purposes of P5 of this standard, components of a Protection System include the following:

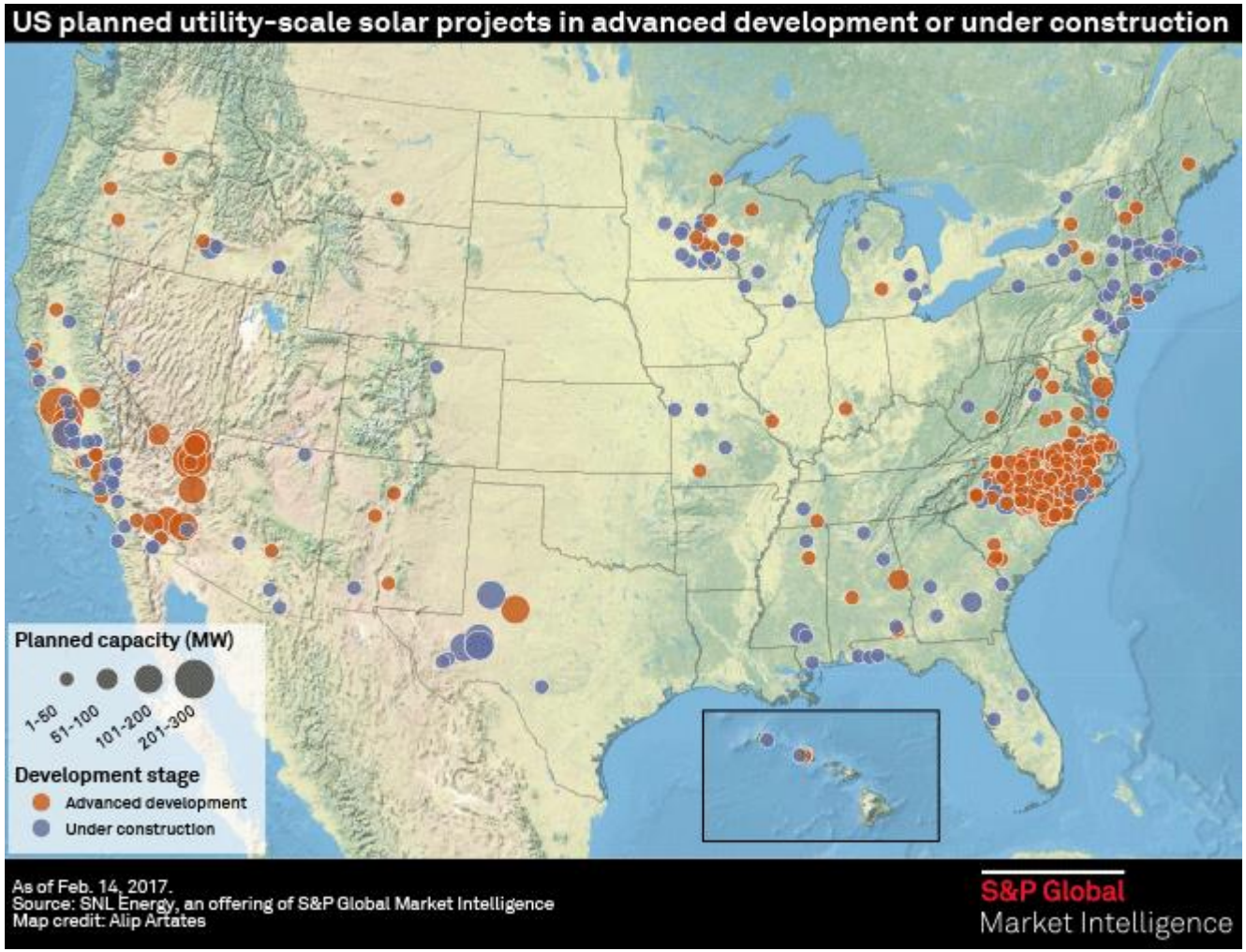
- Protective relays which respond to electrical quantities used for primary protection;
- Communications systems necessary for correct operation of protective functions without alarms centrally monitored;
- Single station DC supply that is not monitored for both low voltage and open circuit, with alarms centrally monitored;
- Control circuitry associated with protective functions through the trip coil(s) of the circuit breakers or other interrupting devices.

GMD & EMP

- TPL-007 – enforceable 7/1/17
- EPRI EMP video

www.epri.com/abstracts/Pages/ProductAbstract.aspx?ProductId=000000003002009587

Solar penetration



Solar penetration

Issues

- Voltage regulation
- Voltage ride-through
- Frequency regulation
- UFLS coordination

Questions ?

2017 TAG Work Plan

Rich Wodyka

Administrator

2017 NCTPC Overview Schedule

Reliability Planning Process

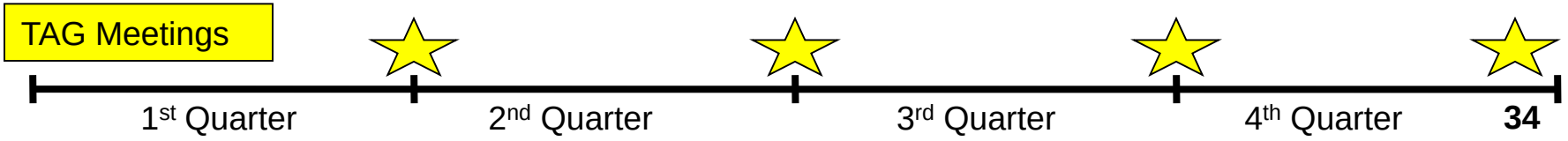
- Evaluate current reliability problems and transmission upgrade plans
- Perform analysis, identify problems, and develop solutions
- Review Reliability Study Results

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



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 – 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 17th

- **2017 Study Update**
  - ✓ **Receive a progress report on the Reliability Planning study activities and 2017 Study Scope**
    - ***Provide comments on the final 2017 Study Scope to Rich Wodyka at rawodyka@aol.com by March 31st.***
  - ✓ **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 Requests**

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 ?