Transmission Advisory Group Meeting

April 26, 2007

Raleigh, NC

TAG Meeting Agenda
April 26, 2007

1. Administrative Items
2. NCTPC Supplemental Report on the 2006 Collaborative Transmission Plan
3. 2007 NCTPC Study Scope and Status
4. FERC Order 890
5. TAG Open Forum

2006 NCTPC Supplemental Report & Updated Collaborative Transmission Plan

Bryan Guy

April 26, 2007

Summary of the 2006 Collaborative Plan & Report Published in January 2007

- **The original 2006 Plan is comprised of 16 Duke & Progress projects totaling more than $400 million in capital investment**
  - **Only projects with projected cost of $10 million or more are listed in the Plan**
- **Incremental cost to import 600 MW from Duke to Progress East - $131 million**

2006 Supplemental Report

- **In August 2006, one additional resource supply scenario study was added to the resource supply option analysis to evaluate a 1,200 MW import from Duke to Progress East**
- **The purpose of the March 22nd DRAFT Supplemental Report is to:**
  - Report on results of the additional analyses performed to evaluate a transfer of 1,200 MW from Duke to Progress East.
  - Update the preferred solutions presented in the 2006 Collaborative Transmission Plan published in January 2007 based on the additional analysis performed.

2006 Supplemental Report

As a result of the additional analysis, a preferred solution that modifies the original 2006 Collaborative Transmission Plan was developed as follows:

- **Added project:**
  - Pleasant Garden to Asheboro 230 kV line, including replacing the Asheboro 230/115 kV transformers. This project ***replaces*** Buck to Asheboro 230 kV line in the updated Plan.
- **Modified project:**
  - Harris to Durham 230 kV line has been modified in the updated Plan. The Harris to RTP 230 kV section of the line is included in the updated Plan. However, the RTP to Durham 230 kV section of the line is deferred, since this section of the line is not needed within the 10 year planning horizon.

2006 Supplemental Report

- **Deferred projects:**
  - Third Wake 500/230 kV transformer has been deferred beyond the 10 year planning horizon.
  - Cape Fear to Siler City 230 kV line has been deferred beyond the 10 year planning horizon.
- **Advanced project:**
  - Antioch 500/230 kV transformer capacity addition has been advanced by one year.

Pleasant Garden-Asheboro 230 kV Line June 1, 2011

- Description
  - Construct 20 miles of new 230 kV line between Duke's Pleasant Garden 500 kV Substation and Progress' Asheboro 230 kV Substation.
- Need
  - Address loadings on Progress' Badin-Tillery-Biscoe-Asheboro 115 kV corridor and Rockingham-Lilesville 230 kV Lines. Defers Cape Fear-Siler City 230 kV line project beyond 10 year horizon and delays need to upgrade the Durham-RTP 230 kV line. More comprehensive joint study to be conducted.
- Cost
  - $29 M

Harris-RTP 230 kV Line

June 1, 2011

- Description
  - Establish RTP 230 kV Switching Station
  - Conversion of existing 115 kV line to 230 kV
  - Construction of new 230 kV transmission between Amberly and Green Level; and between Harris and Apex.
- Need
  - With a Harris unit down, an outage of the common tower Method-East Durham 230 kV line and Method-Durham 230 kV line causes the Cary Regency Park-Durham 230 kV line to exceed its rating.
- Cost
  - $30 M

Summary of Updated 2006 Collaborative Plan as a Result of the Supplemental Analysis

- The updated Plan is now comprised of 14 Duke & Progress projects totaling slightly less than $300 million in capital investment (pending TAG review and OSC approval)
- The updated Plan represents a better technical solution with a savings of over $100 million
- Incremental cost to import from Duke to Progress East:
  - 600 MW is $68 million
  - 1,200 MW is $71 million

Comparison of Original and Updated 2006 Plan & Study Results

	Original 2006 Plan & Study Results	Updated 2006 Plan & Study Results
No. of Projects	16	14
Cost of Projects*	$403 million	$294 million
Incremental Cost to Import an additional 600 MW from Duke to Progress East	$131 million	$68 million
Incremental Cost to Import an additional 1,200 MW from Duke to Progress East	Not studied	$71 million

* Includes Projects > $10 Million

Questions?
or
Comments

NCTPC 2007 Study Scope & Status

Denise Roeder

April 26, 2007

Purpose of Study

- **Assess Duke and Progress transmission systems' reliability and to develop a single Collaborative Transmission Plan**
- **Also assess Enhanced Access Study requests provided by Participants or TAG members**

Transmission System Planning

- **Duke and Progress shared their planning practices and criteria among Participants**
- **PWG identified many similarities and some differences - all comply with NERC reliability standards and SERC requirements**
- **Will continue to evaluate the differences and examine potential common planning practices and criteria that will be used in future studies**

Overview of the Study Process

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

Study Assumptions Selected

- ✓ **Study Year - 2012 Summer and 2011/2012 Winter for near term reliability analysis**
- ✓ **Study Year - 2016 Summer for longer term reliability analysis**
- ✓ **LSEs provided input for load forecasts and resource supply assumptions**
- ✓ **LSEs provided dispatch order for their resources**
- ✓ **Coordinated interchange between Participants and neighboring systems**

Study Criteria Established

- ✓ **NERC Reliability Standards**
- ✓ **SERC Requirements**
- ✓ **Individual company criteria**

Models and Cases Developed

- ✓ Latest available VSTE cases were selected & updated for study years
- ✓ Combined detailed model for Duke and Progress was prepared
- ✓ Planned transmission additions from updated 2006 Plan were included in models
- ✓ Base case scenarios were established

Study Methodologies Selected

- ✓ **Thermal Power Flow Analysis**
  - **Duke and Progress Contingencies**
  - **Duke and Progress Monitored Elements**
- ✓ **Voltage, stability, short circuit, phase angle analysis will be performed as needed**

Technical Analysis Performed

- ✓ **Thermal screenings of the 2012 and 2016 base reliability cases have been performed**
- ✓ **No unexpected or unexplainable results to date based on comparison of:**
  - **Results from the 2012 case to the results of the 2011 base reliability case from last year's study**
  - **Results from the 2012 case to the 2016 case**

Technical Analysis to be Performed

- **Develop and screen resource supply option cases**
  - **Perform import analysis, similar to the analysis performed in the 2006 Study, on select interfaces with neighboring Control Areas**
  - **Perform analysis of additional generation resources in various locations within North Carolina**

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?
or
Comments

FERC Order 890
Open Access Transmission Tariff Reform on Regional Transmission Planning

Overview of NCTPC Process and Current Compliance to Order

April 26, 2007

Order 890 Final Rule requires that:

- Transmission Providers participate in a coordinated, open and transparent planning process on both a local and regional level.
- Each Transmission Provider's planning process must meet the Commission's nine planning principles, which are Coordination, Openness, Transparency, Information Exchange, Comparability, Dispute Resolution, Regional Coordination, Economic Planning Studies, and Cost Allocation.
- Each Transmission Provider must describe its planning process in its tariff.
- The Commission will allow regional differences in planning processes.

SUMMARY

FERC Order 890 Principles	NCTPC Process Current Compliance with Order
1. Coordination	✓ Compliant
2. Openness	✓ Compliant
3. Transparency	✓ Compliant
4. Information Exchange	✓ Compliant / Partial
5. Comparability	✓ Compliant
6. Dispute Resolution	✓ Compliant / Partial
7. Regional Coordination	✓ Compliant
8. Economic Planning Studies	✓ Compliant
9. Cost Allocation	✓ Compliant / Partial

FERC Order 890 Principles	NCTPC Process Current Compliance with Order
Coordination ➢ **Must be a reasonable and meaningful coordinated process.** ➢ **Transmission Providers meet with customers and neighboring systems to develop a transmission plan on nondiscriminatory basis.**	**Compliant** ✓ NCTPC Process is a coordinated transmission planning process. ✓ Consists of Transmission Providers as well as Load Serving Entities. ✓ Other stakeholders (including customers and neighboring systems) can participate through the Transmission Advisory Group (TAG) open meetings.

FERC Order 890 Principles	NCTPC Process Current Compliance with Order
Openness ➢ **Must be open to all interested parties.** ➢ **Must include safeguards to ensure data and information confidentially.**	**Compliant** ✓ NCTPC Process is open to all interested parties including, but not limited to, transmission and interconnection customers, state commissions and other stakeholders. ✓ Participation Agreement requires the protection of all confidential and proprietary information.

FERC Order 890 Principles	NCTPC Process Current Compliance with Order
Transparency ➢ **Disclosing of planning criteria, assumptions and data along with study methodology, criteria, and processes.** ➢ **Written documentation of the study methodology, criteria, and processes.** ➢ **Reporting on the status of transmission upgrade plans.**	**Compliant** ✓ NCTPC Process does document and post the basic planning criteria, assumptions and data along with the study methodology, criteria, and process. ✓ Makes the planning information publicly available simultaneously to all parties through the TAG process, including the ongoing status of the upgrade plans.

FERC Order 890 Principles	NCTPC Process Current Compliance with Order
Information Exchange ➢ **Must provide all stakeholders a meaningful opportunity to engage in the regional planning process.** ➢ **Must have information exchange guidelines and schedules including submittal from transmission customers.** ➢ **Information must be provided to transmission customers on regular intervals which are identified in advance.**	**Compliant / Partial** ✓ NCTPC Process provides all stakeholders a meaningful opportunity to participate in the NC regional planning process. ✓ NCTPC Process does have information exchange guidelines and schedules for LSEs' data. ► Process to be updated to solicit input from transmission customers as part of the information exchange cycle.

FERC Order 890 Principles	NCTPC Process Current Compliance with Order
Comparability ➢ **Transmission plan must meet the specific service requests of its transmission customers; and treat similarly situated customers comparably in transmission system planning.** ➢ **Customer demand resources should be considered on a comparable basis to the service provided by comparable generation resources, where appropriate.**	**Compliant** ✓ LSEs are participating actively in the development of the transmission plan and having an equal weight in the decision making. ✓ Provides for similarly situated customers to be treated comparably in transmission system planning. ✓ Customer demand resources are considered on a comparable basis.

FERC Order 890 Principles	NCTPC Process Current Compliance with Order
Dispute Resolution ➢ **Must have a dispute mechanism outlined in the OATT which is able to address both procedural and substantive planning issues.** ➢ **Can utilize existing dispute resolution process, but must specifically state how the process will be used to address planning disputes.**	**Compliant / Partial** ✓ NCTPC Issues are resolved through the OSC voting structure which provides for a tie breaker. ✓ Agreement provides for a non-binding opinion from the NCUC Public Staff on any dispute. ► The existing dispute mechanism may need to be altered to address both procedural and substantive planning issues.

FERC Order 890 Principles	NCTPC Process Current Compliance with Order
Regional Participation ➢ **Commission encourages as broad a region as possible but does not mandate any specific geographic scope.** ➢ **Transmission Providers are required to specify the broader region in which they propose to conduct coordinated regional planning.**	**Compliant** ✓ NCTPC Process clearly meets the Commission requirement for Regional Participation. ✓ Both Duke and Progress can specify the broader region (NC along with VACAR/SERC) in which they are already conducting coordinated regional planning.

FERC Order 890 Principles	NCTPC Process Current Compliance with Order
Economic Planning Studies ➢ **Planning process should address more than just reliability.** ➢ **Economic analysis should reflect study of upgrades to integrate new generation resources and / or loads on an aggregated or regional basis.** ➢ **Stakeholders must be able to request a number of economic planning studies annually.**	**Compliant** ✓ NCTPC Process addresses both reliability and enhanced transmission access (economic planning studies). ✓ Economic analysis factors in both new generation and loads on a regional planning basis. ✓ Stakeholders through the TAG process can request enhanced transmission access scenarios to be studied.

FERC Order 890 Principles	NCTPC Process Current Compliance with Order
Cost Allocation ➢ **Does not modify the existing process for which projects to be built by a single TO would be billed under its existing rate structures.** ➢ **Applies only to regional projects that do not fit under existing structures.** ➢ **Each regional transmission planning process can develop its own cost allocation solution.**	**Compliant / Partial** ✓ NCTPC Process does not modify the existing process for which projects to be built by a single TO would be billed under its existing rate structures. ► Cost allocation principles are being developed that would be applied to regional projects that do not fit under the existing structures.

Questions?
or
Comments