



12.8: Northeastern North Carolina RTEP Overview

PJM operates the BES transmission facilities (and others monitored at lower voltages), within the northeastern North Carolina footprint shown on Map 12.38, including those of Dominion North Carolina Power (DOM).

The transmission system in northeastern North Carolina delivers power to customers from native generation resources and via power transfers across tie-line facilities with the rest of the PJM system by way of Virginia to the north and with adjoining systems in the rest of North Carolina to the west and south.

Critical RTEP Issues and Upgrades

PJM’s annual RTEP process assesses transmission facilities in Northeastern North Carolina for compliance with NERC reliability criteria violations. This can include identification of the need for new baseline enhancements and for network upgrades to accommodate the interconnection of new generating resources within the Dominion TO zone.

Map 12.38: PJM Service Area in Northeast North Carolina

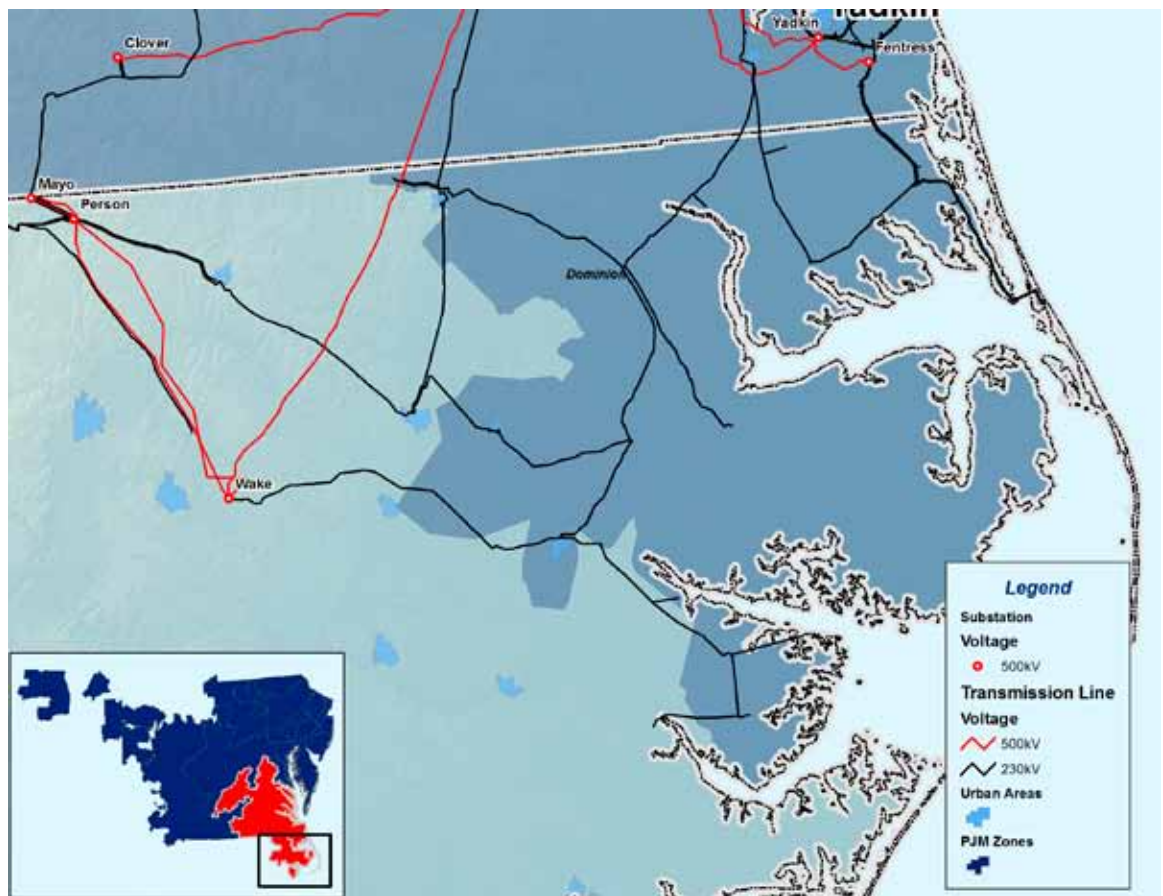


Table 12.34: Critical Issues in Northeast North Carolina

RTEP Topic	Report Section	Importance
Load Growth Trends	2.1	10-year forecasted peak power demand for individual TO zones
Load Management Trends	2.2	Impacts of Load Management as a capacity resource
Generator Interconnection Plans	2.3	New sources of electric power to meet customer demand
Wind and other renewable fuel sources	2.3.3, 2.3.4	Potential for wind and other renewable fuel generating resources to meet RPS requirements
Generator Deactivations	2.4	Impact on transmission requirements from generation removed from operation
Merchant Transmission Interconnection Plans	2.5	Impact of merchant transmission interconnection requests
2014 BES Upgrades Below Backbone 500 kV Level	8.4	Resolving zone-specific NERC-based reliability criteria violations
Market Efficiency Studies	10.2	Assessing RTEP upgrades for potential market efficiency benefits
Operational Performance	2.6, 8.5	Addressing transmission performance observed in actual operations
Long-term PJM Challenges	13.1, 13.2, 13.3, 13.4, 13.5, 13.6	Impacts of ATSI, new LDAs, PRD, smart grid, FERC policy, state policy, RPS
2010 RTEP Sensitivity Studies	13.7	Sensitivity tests related to load, generation and loop flow parameters

These and other key critical RTEP issues are summarized in Table 12.34 which also identifies the other sections of this report where additional discussion may be found.

12.8.1 – Load Growth and Existing Generation

Internal Load Growth

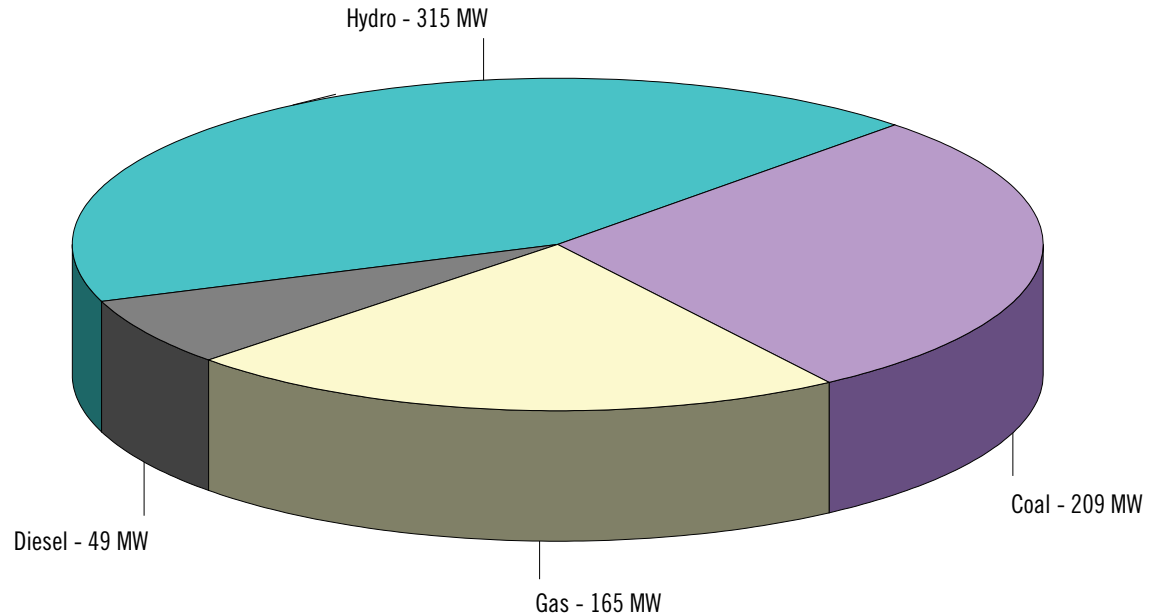
Load Growth for summer and winter periods for all PJM Transmission Owner zones is shown in **Section 12.0.2**. The peak summer load growth rate forecast for the Dominion Transmission Owner zone is 2.2 percent over the 10-year period through 2019. Dominion’s peak winter load growth rate is expected to be 1.7 percent over the 10-year period through 2018/19.

Forecasted loads are modeled in power flow studies used to develop PJM’s RTEP through December 2009. PJM’s RTEP includes baseline transmission upgrades to meet expected 2014 peak load conditions. PJM’s ongoing RTEP process continues to study anticipated needs for additional transmission expansion plans to meet load growth requirements beyond 2014 as well.

Existing Generating Capability

Figure 12.16 provides a snapshot of the existing installed capacity by fuel type in northeastern North Carolina.

Figure 12.16: Existing Installed Capacity in Northeast North Carolina



*** NOTE**

Values presented in this figure comprise installed capacity as of December 31, 2009 that is located within the PJM RTO and eligible to participate in RPM auctions. Specifically regarding wind, this figure does not include any additional wind powered generation that received capacity injection rights during the second half of 2009 but which would be expected to participate in future RPM auctions. Nominal ratings of wind-powered facilities are typically many times larger than installed capacity values, as discussed and presented in **Section 2.3.4**.

12.8.2 – Generator Interconnection Requests

PJM’s generator interconnection queue for northeastern North Carolina contained two interconnection requests, through January 31, 2010. Project P43, a 78 MW wood burning unit at 115 kV, and Project U1-031, an 80 MW wood burning unit at 230 kV are presently active in PJM’s interconnection study process. These projects are shown on Map 12.39.

12.8.3 – Generation Deactivations

No deactivation requests have been submitted for generators located in the PJM area of northeastern North Carolina, through December 31, 2009.

12.8.4 – Merchant Transmission Interconnection Requests

No merchant transmission interconnection requests have been received by PJM for northeastern North Carolina, through January 31, 2010.

Map 12.39: Queued Generation interconnection Requests in Northeast North Carolina

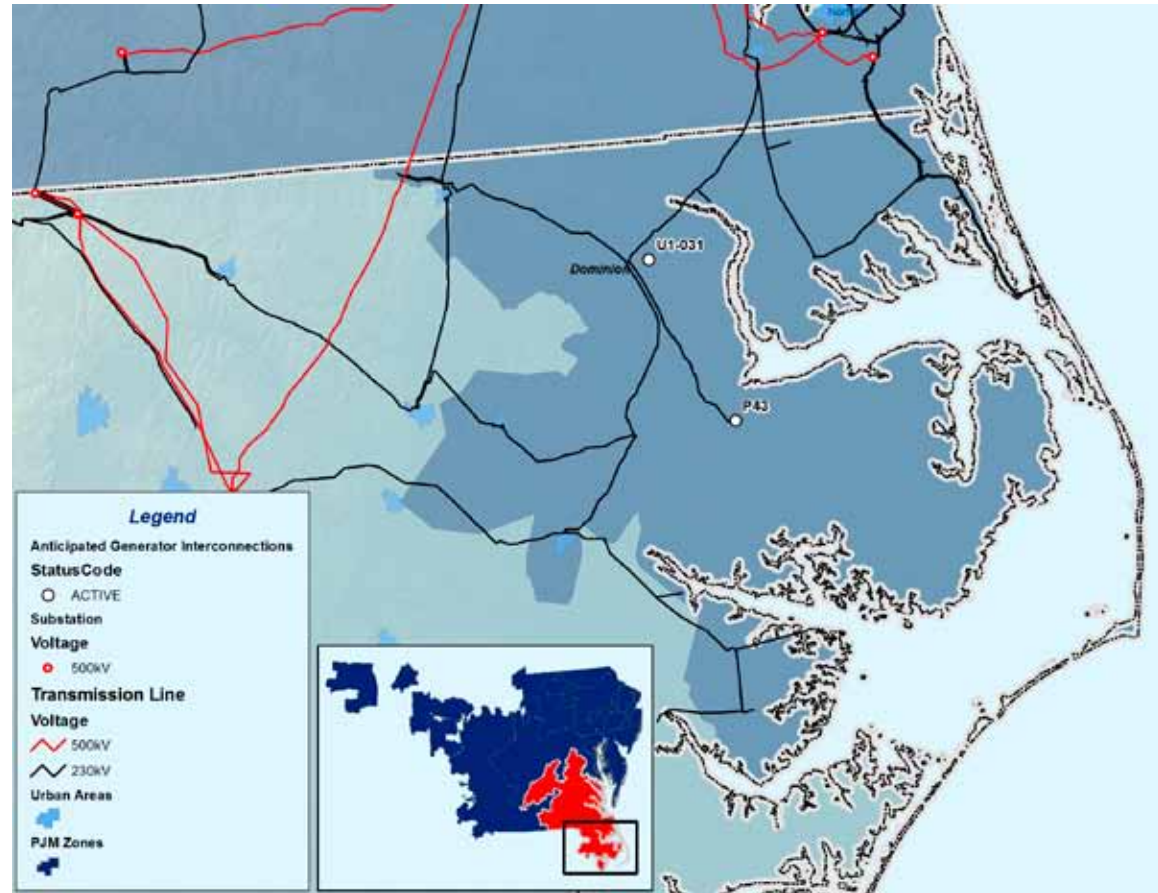


Table 12.35: Major 2009 RTEP Plans in North Carolina

	Upgrade	System Upgrade Drivers									Date	Cost (M)	TO Zone(s)	2009 TEAC Review
		Baseline Upgrades					Network Upgrades			Supplemental Upgrade				
		Baseline Load Growth / Deliverability & Reliability	Congestion Relief - Economic	Operational Performance	Generator Deactivation	TO Criteria Violation	Generation Interconnection	Merchant Transmission Interconnection	Long-term Firm Transmission Service	Criteria Compliance other than for Baseline				
1	Build a 2nd Shawboro – Elizabeth City 230 kV line	▲									June 2014	22	Dominion	9/16/2009
2	Install 50-100 MVAR variable reactor banks at Carolina, Doods, Everetts, Idylwood, N. Alexandria, N. Anna, Suffolk and Valley 230 kV substations			▲							December 2011	48	Dominion	7/15/2009

12.8.5 – Transmission Expansion Plans

New RTEP planned transmission upgrades in northeastern North Carolina greater than \$5 million approved by the PJM Board during 2009 are listed in Table 12.35 and shown on Map 12.40.

A complete listing of all other PJM Board-approved BES reinforcements – baseline enhancements as well as network upgrades to accommodate interconnection requests – can be found on PJM’s Web site via the following URL: <http://www.pjm.com/planning/rtep-upgrades-status.aspx>.

12.8.6 – Interconnection Requests for Generation Powered by Renewable Fuel Sources

PJM’s RTEP process offers a structure that assures consistent, equal opportunity across fuel types while flexible enough to adapt to specific technical realities and market challenges. Presently, PJM’s queues includes two interconnection requests in northeastern North Carolina for generating plants fueled by wood, Projects P43 and U-1-031, as shown on Map 12.39.

Map 12.40: Major 2009 RTEP Plans in northeastern North Carolina

