

Preface

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RTEP Update Since December 31, 2010

PJM President and CEO Terry Boston issued the accompanying PJM Board statement on behalf of the PJM Board on February 28, 2011 entitled, "Planning for Transmission in the 21st Century." In that context, the statement also addresses the Board's decision to suspend the PATH line in light of reduced load growth rates in PJM's January, 2011 published load forecast.

Preliminary 2011 PJM RTEP process analysis suggests that the need for the PATH line has moved several years into the future beyond 2015. This has led the PJM Board to direct transmission owners to suspend efforts on the PATH line pending a more complete analysis in the 2011 RTEP. **Section 5** of this report discusses the PATH suspension.

PJM's 2011 RTEP process will also address the impact of the lower load forecast and other factors on all approved RTEP upgrades, including the MAPP project.



Statement of Terry Boston, President and CEO,
on behalf of the PJM Board of Managers

Planning for Transmission in the 21st Century

February 28, 2011

One of PJM's core functions is planning for new transmission facilities that are needed to ensure the future reliability of our regional electricity system that serves 54 million people. PJM's independent analysis is an important component of the process by which FERC and the States exercise their respective authority over the construction, siting and cost recovery for major new transmission lines in our region.

Through the current Regional Transmission Expansion Plan (RTEP), PJM has identified -- over a 15-year horizon -- when the forecasted power flows in specific areas of the grid would violate national and local standards for reliable operation of the bulk electric system. This process necessarily requires estimating the future demand for electricity, as well as analyzing the committed resources that will serve the demand, in order to determine when and where future power flows will exceed the thermal and voltage limitations of existing transmission facilities.

While any estimate of future economic activity and its effect on both demand and supply is inherently uncertain, PJM generally has found, based on its experience, that the magnitude of uncertainty was limited and that FERC-approved "bright line" tests such as are currently used in the RTEP process could reasonably define the expected date of future reliability violations, thereby allowing PJM to plan for new transmission facilities.

Recent dramatic swings in economic forecasts and evolving public policies (particularly with respect to renewable energy) are adding greater uncertainty to our planning studies. Uncertainty about generation retirements, particularly in response to potential changes in environmental regulations, may also be diminishing the robustness of the current planning criteria.

Moreover, a set of new and greater uncertainties -- not just with load growth estimates but also other key indicators relevant to planning assessments -- are complicating the analysis of future reliability needs. In particular, the growth of Demand Response can contribute to lower expectations for future peak demand, thereby extending the time period when transmission upgrades are needed.

This Board supports both the enhanced competition within PJM markets that comes with greater Demand Response participation and greater opportunities for renewable energy -- but we recognize these factors add significant complexity to analyses of the system's future needs.

Although the current planning studies have become volatile due to significant changes in economic forecasts, this Board remains committed to sharing with PJM stakeholders the latest results of PJM's completed analysis. We report whatever the forecasts are and we respond impartially.



The Potomac Appalachian Transmission Highline (PATH)

Based on analysis conducted in 2007, the PJM Board approved a 765 kV line between the existing Amos substation in West Virginia and the proposed Kemptown substation in Maryland. Subsequent analysis extended the "required in-service date" by which the line was needed to resolve reliability violations to 2015.

As part of its 2011 RTEP, and in response to a request by a Virginia Hearing Examiner, PJM is conducting a series of analyses using the most current economic forecasts and Demand Response commitments, as well as potential new generation resources. Preliminary analysis reveals the expected reliability violations that necessitated PATH have moved several years into the future.

Based on these latest results, the Board has decided to hold the PATH project in abeyance in its 2011 RTEP. The Board further directs the sponsoring Transmission Owners to suspend current development efforts on the PATH project, subject to those activities necessary to maintain the project in its current state, while PJM conducts more rigorous analysis of the potential need for PATH as part of its continuing RTEP process. This action, however, does not, at this time, constitute a directive by PJM to the sponsoring Transmission Owners to cancel or abandon the PATH project.

PJM will complete this more rigorous analysis of the PATH project and other transmission requirements and then report the results to stakeholders when it is available. The Board will review this comprehensive analysis as part of its consideration of the 2011 Regional Transmission Expansion Plan.

Managing Uncertainties in Transmission Planning

Through the Regional Planning Process Task Force and other forums, PJM stakeholders are evaluating the current planning criteria and considering better ways to manage all factors utilized in the exercise of transmission planning.

The PJM Board strongly supports this effort. We consider this collaboration to be one of PJM's most important stakeholder initiatives. While we do not presuppose any specific outcome at this time, we ask PJM members to bring forth recommendations by this fall so that PJM might make appropriate filings and then enact improvements in the planning process at the beginning of 2012.

This region's electricity system faces more challenges in the next 10 years than any other period over the last 100 years. Transmission planners are on the leading edge – identifying future needs amidst growing uncertainties such as a changing fuel mix, increased storage possibilities, greater demand participation, as well as fluctuating forecasts for economic recovery.

We urge stakeholders to find innovative ways to manage these complexities well so that this region keeps -- for the long-term future -- the reliable electric service that drives our economy.

2010 RTEP Report

The report you are reading is published annually by PJM to convey the results of planning studies throughout the previous calendar year and to explain the rationale behind why transmission system upgrades are needed. This document discusses system drivers, reliability criteria violations and upgrades themselves for reporting purposes to facilitate greater Regional Transmission Expansion Plan (RTEP) understanding.

Fundamentally, the RTEP is that ongoing, body of PJM Transmission Expansion Advisory Committee (TEAC) presentation materials and published RTEP Baseline Assessment reports which remains PJM's authoritative source of RTEP information and data.

- PJM TEAC materials can be accessed online from PJM's website via the following URL link: <http://www.pjm.com/committees-and-groups/committees/teac.aspx>.
- PJM RTEP Baseline Assessment reports can also be accessed online from PJM's website via the following URL link: <http://www.pjm.com/planning/rtep-development/baseline-reports.aspx>.

Audience

PJM has crafted this report in particular with federal and state regulators and their staffs in mind to explain and emphasize the interrelationship among the following:

- system upgrade drivers (e.g., load growth, generation addition, generation deactivation)

- reliability criteria violations (e.g., thermal transmission constraints, voltage limits)
- system enhancements needed (e.g., new facilities, upgrades to existing facilities)

Readers of this report are encouraged to participate in the ongoing activities of the PJM Transmission Expansion Advisory Committee (TEAC). This forum provides opportunity for stakeholder participation and advice throughout the RTEP process and for remaining apprised of all evolving aspects of PJM's RTEP – plans and process alike.

Order 890 Compliance

PJM expanded its stakeholder process in 2008 in compliance with FERC's Order 890 to enhance coordinated, open and transparent planning at both regional and local level. PJM and stakeholders already conduct a compliant planning process filed with the Commission and incorporated in Schedule 6 of the PJM Operating Agreement (OA). Valuable stakeholder discussions culminated in the establishment of three Sub-Regional RTEP Committees – Mid-Atlantic, Western and Southern – commissioned to review proposed upgrades of more local concern.

Each Sub-Regional RTEP Committee increases the opportunity for direct stakeholder participation in the planning process from initial assumption setting stages through review of the planning analyses, violations, and alternative transmission expansions. The Subregional RTEP Committee provides a more local forum for gathering and considering planning issues. Interested parties can access Sub-regional RTEP Committee planning process information from PJM's website via the following URL links:

- PJM Mid-Atlantic Sub-Regional RTEP Committee: <http://www.pjm.com/committees-and-groups/committees/ssrtep-ma.aspx>.
- PJM Western Sub-Regional RTEP Committee: <http://www.pjm.com/committees-and-groups/committees/ssrtep-w.aspx>.
- PJM Southern Sub-Regional RTEP Committee: <http://www.pjm.com/committees-and-groups/committees/ssrtep-s.aspx>.

Through the activities of these committees, all PJM stakeholders have a forum to raise issues, propose solutions or alternatives and conduct other related discussions. These meetings are open to all stakeholders interested in the issues under consideration.

Scope of Upgrades Discussed

In 2010 alone, the PJM Board approved over 400 individual Bulk Electric System (BES) upgrades. However, to put reasonable parameters around the scope and length of this report, the upgrades discussed here are generally those whose cost exceeds \$5 million. A complete list of all approved RTEP upgrades, a brief description of facility and driver as well as current status can be found on PJM's website via the following URL link: <http://www.pjm.com/planning/rtep-upgrades-status/construct-status.aspx>.

Queued Interconnection Requests

Generation and merchant transmission interconnection requests are a key part of PJM's RTEP process. Network upgrades discussed in this report are for those queued interconnection

requests that have completed System Impact Studies. From a “going-forward” RTEP power flow modeling perspective, PJM's RTEP process specifies that planning studies model all generation on-line that have a completed System Impact Study. Of these generators, only those with executed Interconnection Service Agreements (ISAs) are permitted to back-off an identified transmission constraint. Over ten years experience with queue activity and generation withdrawal rates has demonstrated that, in this manner, PJM's interconnection process encompasses sound, consistent and reliable planning, minimizing the need for retooling studies that would otherwise be necessitated by those generator interconnection requests that withdraw from the planning process.

For reporting purposes, please note that PJM has included many tables with statistical information about interconnection request activity through queue W4, the window for which closed on January 31, 2011.

RTEP Process information...

This report does not describe the RTEP process itself in great detail. The reader is directed to a number of online resources, including those noted below, to pursue greater understanding of the RTEP process. Detailed information on the RTEP process itself can be found in the following resources, available on PJM's website, as noted further, following:

- The M-14 series of PJM Manuals describe the specific business rules under which PJM effects the entire RTEP Process. Specifically, Manual 14B addresses the details associated with the methodologies associated with the planning

studies and upgrades derived from them as discussed in this report. PJM Manual 14B, “Regional Planning Process” can be found via the following URL link: <http://www.pjm.com/~media/documents/manuals/m14b.ashx>.

- The PJM Operating Agreement, Schedule 6, codifies the overall provisions under which PJM executes its Regional Transmission Expansion Planning Protocol, more familiarly known (and used throughout this document) as the “PJM RTEP Process.” The PJM Operating Agreement can be found on PJM’s website via the following URL link: <http://www.pjm.com/documents/agreements/~media/documents/agreements/oa.ashx>.
- The PJM Open Access Transmission Tariff (OATT) describes the interconnection request process for generating resource interconnection, merchant transmission interconnection as well as specific process provisions to address long-term firm transmission service and Auction Revenue Rights. The PJM OATT can be found via the following URL link: <http://www.pjm.com/documents/agreements/~media/documents/agreements/tariff.ashx>.

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