



# **PJM RTEP – 2014 Project Proposal Window 1 Problem Statement & Requirements Document**

## **2014 RTEP Thermal Baseline Contingency, Generator Deliverability & Common Mode Outage, Load Deliverability and N-1-1 Thermal**

PJM Interconnection

Original Document: June 27, 2014

Version 1

**Email: [RTEP@pjm.com](mailto:RTEP@pjm.com) with any questions or clarifications and include a reference to 2014 RTEP Proposal Window 1**

**REQUEST FOR PROPOSAL – 2014 RTEP Project Proposal Window**

**I. Purpose of Proposal**

PJM seeks technical solution alternatives (hereinafter referred to as “Proposals”) to resolve potential reliability criteria violations on facilities identified below in accordance with planning criteria (PJM, NERC, SERC, RFC, and Local Transmission Owner criteria).

**II. Criterion applied by PJM to for this proposal window:**

- A) Thermal Baseline Contingency Analysis**
- B) Generator Deliverability & Common Mode Outage Procedure**
- C) Load Deliverability Thermal & Load Deliverability Voltage**
- D) N-1-1 Thermal**

**III. Terminology**

For Proposal windows PJM will distribute a spreadsheet of potential violations on facilities identified through a series of analyses. The following column headings are generally representative of the data fields that will be used to identify the specific facility and other factors of the output of this analysis. Additional information deemed necessary by PJM will be provided on a separate tab along with the results file

Column Headings	Title	Description
FG #	Flowgate Number	A sequential numbering of the identified potential violations
Fr Bus	From Bus Number	PSSE model Bus number corresponding to one end of line identified as a potential violation
Fr Name	From Bus Name	PSSE model Bus name corresponding to one end of line identified as a potential violation
To Bus	To Bus Number	PSSE model Bus number corresponding to other end of line identified as a potential violation
To Name	To Bus Name	PSSE model Bus name corresponding to other end of line identified as a potential violation
CKT	Circuit	Circuit number of identified potential violation

KVs	Kilovolt level (A/B)	Kilovolt level of both sides of potential violation, if A does not equal B, potential violation is a transformer
Areas	Area Numbers (A/B)	Area numbers of both ends of potential violation (A=From Bus Area Number, B=To Bus Area Number) If A does not equal B, potential violation is a tie line
Rating	Line Rating	Applicable Thermal rating (MVA) of line
DC Ld(%)	Direct Current Loading percentage	Percentage above 'Line Rating' determined from DC testing
AC Ld(%)	Alternating Current Loading percentage	Percentage above 'Line Rating' determined from AC testing
Cont Type	Contingency Type	Contingency Categorization (potential options include: Single, Bus, Line_FB, Tower)
Contingency	Contingency Name	Contingency Name as identified in associated contingency file

**IV. Analysis Procedure**

PJM Planning follows a documented procedure for all RTEP analysis as set forth in PJM Manual 14B. This problem statement requires participants to perform analysis to identify solutions to potential violations identified using RTEP procedures detailed in Manual 14B, section 2.3, RTEP Reliability Planning at:

<http://pjm.com/~media/documents/manuals/m14b.ashx>

Additionally, all proposed solutions must adhere to PJM Transmission Owner Criteria:

<http://www.pjm.com/planning/planning-criteria/to-planning-criteria.aspx>

PJM performs a preliminary quality assessment of the analysis in coordination with PJM Transmission Owners, Generation Owners, Neighboring Transmission Owners, and any other affected parties. In this quality assessment PJM reviews potential violations as determined by the analytical tools used throughout RTEP analysis. Through this coordination PJM seeks to identify only the violations for inclusion in the proposal window process. As PJM works through this quality assessment and continues to develop the RTEP analysis, it is possible that identified potential violations will be removed from the potential violation list as determined by PJM Planning. It is also possible that as the analysis continues, other potential violations that were not on the potential violation list originally are added to that list as deemed necessary by PJM Planning.

This process is intended to develop upgrades to address system reliability criteria violations and market efficiency projects. PJM will regularly retool analysis based on updated system information to ensure that solutions addresses the identified violations, do not cause any new violations, and are still needed to address reliability criteria and/or market efficiency projects.

## V. Scope of Work

Through this Proposal window PJM is seeking solutions to identified Reliability Criteria violations.

### Objectives

1. Develop solutions to identified potential violations;
2. Solutions should not cause any additional violations (Such as: Thermal, Voltage, Short Circuit or Stability). If additional violations are caused by the solutions, this should be addressed within proposal package; and
3. Adhere to all PJM, NERC, SERC, RFC and Local Transmission Owner Criteria

### What PJM Provides:

The following data and related information is required for this project and is expected to be available from PJM:

#### Modeling Data:

The following data is provided (Please note these files are CEII):

1. **Base power flow case.** This case has been developed based on the ERAG MMWG 2013 Series 2019 Summer case in PSS/E version 32 (separate file).
2. **Contingency list.** All Contingency Types (Single, Bus, Tower, Line w/ stuck breaker).
3. **Subsystem File.** Identifying all subsystem zones to be considered in analysis.
4. **Monitor File** Identifying specific ranges of facilities by area and kV level to be considered in analysis.
5. **Applicable ratings if different from what is in case**

### Response back to PJM (Deliverables)

The following must be provided no later than the close of the window. Please use the PJM provided templates to describe the high level details of your proposal. If the proposer wishes to include more detail, additional narrative may be added to address specifics of your proposal including, but not limited to:

1. Description of the proposed solution and violation(s) it resolves.
  - a) Describe to PJM if the project should be considered only as a whole or if portions of the project should be considered as well.
2. Detailed analysis report on proposed solutions, including:
  - a) Breaker one-line diagrams to illustrate system topology
  - b) Spreadsheets (e.g. Output of analysis showing solution to identified issue)
  - c) High level estimate of:
    - i. Time to construct the proposed solutions

- ii. Cost estimates with a description of assumptions (e.g. base cost, risk and contingency (R&C) costs, and total cost)
    - iii. Availability of right of ways
  3. Equipment parameters and assumptions
    - a) All parameters (Ratings, impedances, mileage, etc.)
    - b) For reactive devices, settings and outputs
    - c) For synchronous machines, MW and MVAR output assumptions
  4. Complete set of power flow and dynamic cases containing proposed solutions (all cases should be solvable, not containing any non-convergence issues, in line with industry standards). If possible, provide a PSS/E IDEV file so that the modeling of the proposal may be easily applied to other models (please only use unused bus numbers for the creation of new busses). Please contact PJM with any questions. Provide any other necessary data including critical contingency files to reproduce the proposed solutions. All cases and data files for dynamic simulations must be in PSS/E ver. 32 format.
  5. Any other supporting documentation required by PJM that is required to perform verification review, that isn't explicitly stated in this document.
  6. Submission of Deliverables
    - a) Preferred - VIA electronic mail to [RTEP@pjm.com](mailto:RTEP@pjm.com)
    - b) Alternate (e.g.: DVD or flash/thumb drive) - VIA FedEx to Nancy Muhl, PJM Interconnection, 2750 Monroe Boulevard, Audubon, PA 19403

PJM requires all proposal solutions, both upgrades to existing facilities and Greenfield projects, to complete the 2014 RTEP Proposal Window Template:

<http://pjm.com/~media/planning/rtep-dev/expan-plan-process/ferc-order-1000/rtep-proposal-windows/2014-rtep-proposal-window-template.ashx>

If the proposal is a greenfield solution then, the 'Greenfield Project Proposal Template' must also be included in the project proposal package to provide company evaluation and constructability information:

<http://www.pjm.com/~media/planning/rtep-dev/expan-plan-process/ferc-order-1000/order-1000-greenfield-project-proposal-template.ashx>

Proposing entities are required to provide a public and non-public version of the project proposal. Proposing entities should expect that PJM will post the public version of the proposals after the close of the window. The public version must include redactions for any CEII information and information which the proposing entity deems is business proprietary and confidential (Note: PJM reserves the right to review the proposing entity's proposed redactions to ensure the appropriate level of transparency while protecting confidential and proprietary information and CEII)

## Timeline

Friday, 6/27/2014, Opening of 2014 RTEP Project Proposal Window 1

Monday, 7/28/2014, Close of 2014 RTEP Project Proposal Window 1

- All proposals and pre-qualification documentation due by 07/28/2014

Action	Target Date
Recipients submit pre-qualification packages and updates to PJM*	On or before 7/28/2014
PJM distributes RFP to RTEP proposal window participants	6/27/2014
RFP recipients submit questions to PJM	6/27/2014 – 7/28/2014
PJM distributes answers to questions to all recipients*	6/27/2014 – 7/28/2014
Recipients submit proposals to PJM**	On or before 7/28/2014

\*PJM will maintain confidentiality of individual proposals for the duration of the window.

\*\*Any proposals received after close of the proposal will not be accepted.

## Document Revision History

**June 27, 2014**  
Original File Posted