2015 RTEP Assumptions

2015 RTEP Assumptions

- Load Flow Modeling
  - Power flow models for world load, capacity and topology will be based on the 2020 summer peak case from the 2014 ERAG MMWG series power flow base case
  - Update of adjacent areas with latest topology
  - PJM topology will be based on the 2019 RTEP case that was used in the 2014 RTEP
    - Include all PJM Board approved upgrades through the November 2014 PJM Board of Manager approvals as well as all anticipated February 2015 PJM Board approvals

Locational Deliverability Areas (LDAs)

- Includes the existing 27 LDAs

- Total of 27 LDAs
  - All 27 to be evaluated for the 2018/2019 delivery year RPM base residual auction planning parameters
  - Also evaluated for the 2020 Summer RTEP case

LDA	Description
EMAAC	Global area - PJM 500, JCPL, PECO, PSEG, AE, DPL, RECO
SWMAAC	Global area - BGE and PEPCO
MAAC	Global area - PJM 500, Penelec, Meted, JCPL, PPL, PECO, PSEG, BGE, Pepco, AE, DPL, UGI, RECO
PPL	PPL & UGI
PJM WEST	APS, AEP, Dayton, DUQ, Comed, ATSI, DEO&K, EKPC, Cleveland
WMAAC	PJM 500, Penelec, Meted, PPL, UGI
PENELEC	Pennsylvania Electric
METED	Metropolitan Edison
JCPL	Jersey Central Power and Light
PECO	PECO
PSEG	Public Service Electric and Gas
BGE	Baltimore Gas and Electric
PEPCO	Potomac Electric Power Company
AE	Atlantic City Electric
DPL	Delmarva Power and Light
DPLSOUTH	Southern Portion of DPL
PSNORTH	Northern Portion of PSEG
VAP	Dominion Virginia Power
APS	Allegheny Power
AEP	American Electric Power
DAYTON	Dayton Power and Light
DLCO	Duquesne Light Company
Comed	Commonwealth Edison
ATSI	American Transmission Systems, Incorporated
DEO&K	Duke Energy Ohio and Kentucky
EKPC	Eastern Kentucky Power Cooperative
Cleveland	Cleveland Area

2015 RTEP Assumptions

- New TPL-001-4 Requirement
  - 1.1. System models shall represent:
  - 1.1.1. Existing Facilities
  - **1.1.2. Known outage(s) of generation or Transmission Facility(ies) with a duration**
  - **of at least six months**.
  - 1.1.3. New planned Facilities and changes to existing Facilities
  - 1.1.4. Real and reactive Load forecasts
  - 1.1.5. Known commitments for Firm Transmission Service and Interchange
  - 1.1.6. Resources (supply or demand side) required for Load

- PJM will compile and assess (as a sensitivity) planned outages of generation or Transmission with a duration of at least six months

2015 RTEP Assumptions

- Firm Commitments
  - Long term firm transmission service will be consistent with operations
- Outage Rates
  - Generation outage rates will be based on the most recent Reserve Requirement Study (RRS) performed by PJM
  - Generation outage rates for future PJM units will be estimated based on class average rates

2015 RTEP Load Modeling

- Peak Load
  - Load will be modeled consistent with the 2015 PJM Load Forecast Report
  - The final load forecast data is expected to be available late December 2014
  - Include Demand Response (DR) and Energy Efficiency (EE) that cleared in the 2017/18 BRA

- Light Load
  - Modeled at 50% of the Peak Load forecast per M14B
  - The Light Load Reliability Criteria case will be modeled consistent with the procedure defined in M14B

- Load Management, where applicable, will be modeled consistent with the 2015 Load Forecast Report
  - Used in LDA under study in load deliverability analysis

2015 RTEP Generation Assumptions

- All existing generation expected to be in service for the year being studied will be modeled.

- Future generation with a signed Interconnection Service Agreement, or that cleared in the 2017/18 BRA, will be modeled along with any associated network upgrades.

  – Generation with a signed ISA will contribute to and be allowed to back-off problems.

- Generation with an executed Facility Study Agreement (FSA) will be modeled along with any associated network upgrades.

2015 RTEP Generation Assumptions

- Generation with an FSA will be modeled consistent with the procedures noted in manual 14B
- Generation with an executed FSA will be modeled off-line but will be allowed to contribute to problems in the generation deliverability testing.
  - Generation with an executed FSA will not be allowed to back-off problems.
- Additional generation information (i.e. machine lists) are posted to the TEAC page.

Deactivation Notification Generation

- Generation that has officially notified PJM of deactivation will be modeled offline in RTEP base cases for all study years after the intended deactivation date

- RTEP baseline upgrades associated with generation deactivations will be modeled

- Retired units capacity interconnection rights are maintained in RTEP base cases for 1 year after deactivation at which point they will be removed unless claimed by a queue project

2015 RTEP Assumptions

- All PJM bulk electric system facilities, all tie lines to neighboring systems and all lower voltage facilities operated by PJM will be monitored.

- Contingency analysis will include all bulk electric system facilities, all tie lines to neighboring systems and all lower voltage facilities operated by PJM.

- Thermal and voltage limits will be consistent with those used in operations.

24 Month RTEP

- As part of the 24-month RTEP cycle, a year 7 (2022) base case will be developed and evaluated as part of the 2015 RTEP

- The year 7 case will be based on the 2022 case that was developed as part of this year's 2014 RTEP
  - The case will be updated to be consistent with the 2014 RTEP assumptions.

- Purpose: To identify and develop longer lead time transmission upgrades

Year 2020 Summer RTEP Model Assumptions

- Machine list
  - Updated Capacity Interconnection Rights (CIR's) for existing units
  - Queues with an executed FSA or higher as of 12/11/2014 will be included in the base model
    - Consult posted machine list for exact modeling assumption
    - FSA will be turned off but allowed to contribute to problems in Generator Deliverability
    - Any identified network upgrades driven by included queue projects will also be modeled
    - Any exceptions will be reviewed with TEAC
  - Units that cleared in previous RPM auctions that do not yet have an executed FSA or higher will be modeled
  - 2020 RTEP machine list will be presented at February 2015 TEAC

RTEP – 2020 Model Status

- All TO's provided feedback for final case review
- PJM currently exercising the case for quality control and benchmarking
- Final contingency file review
- Machine List
  - 2020 RTEP machine list is posted with the February 2015 TEAC materials
    - http://pjm.com/~/media/committees-groups/committees/teac/20150212/20150212-year-2020-machine-list-for-2015-rtep-analysis.ashx
  - Stakeholders are encouraged to examine the list and provide PJM feedback

Questions, input or suggestions

– Email RTEP@pjm.com