



Balancing Operating Reserves Charge Allocation Status Quo

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Operating Reserves

- Accounting for Operating Reserve is performed daily
- Pool-scheduled resource is eligible to receive credits for providing Operating Reserve in day-ahead market and, provided that resource is available for entire time specified in its offer data, in balancing market
- Total resource offer amount for generation, including startup and no-load costs as applicable, is compared to its **Total Energy Market Value** for specified operating period segments during day
 - If Energy Market Value < Offer Amount, difference is credited to PJM Member

**Total
Energy
Market
Value**

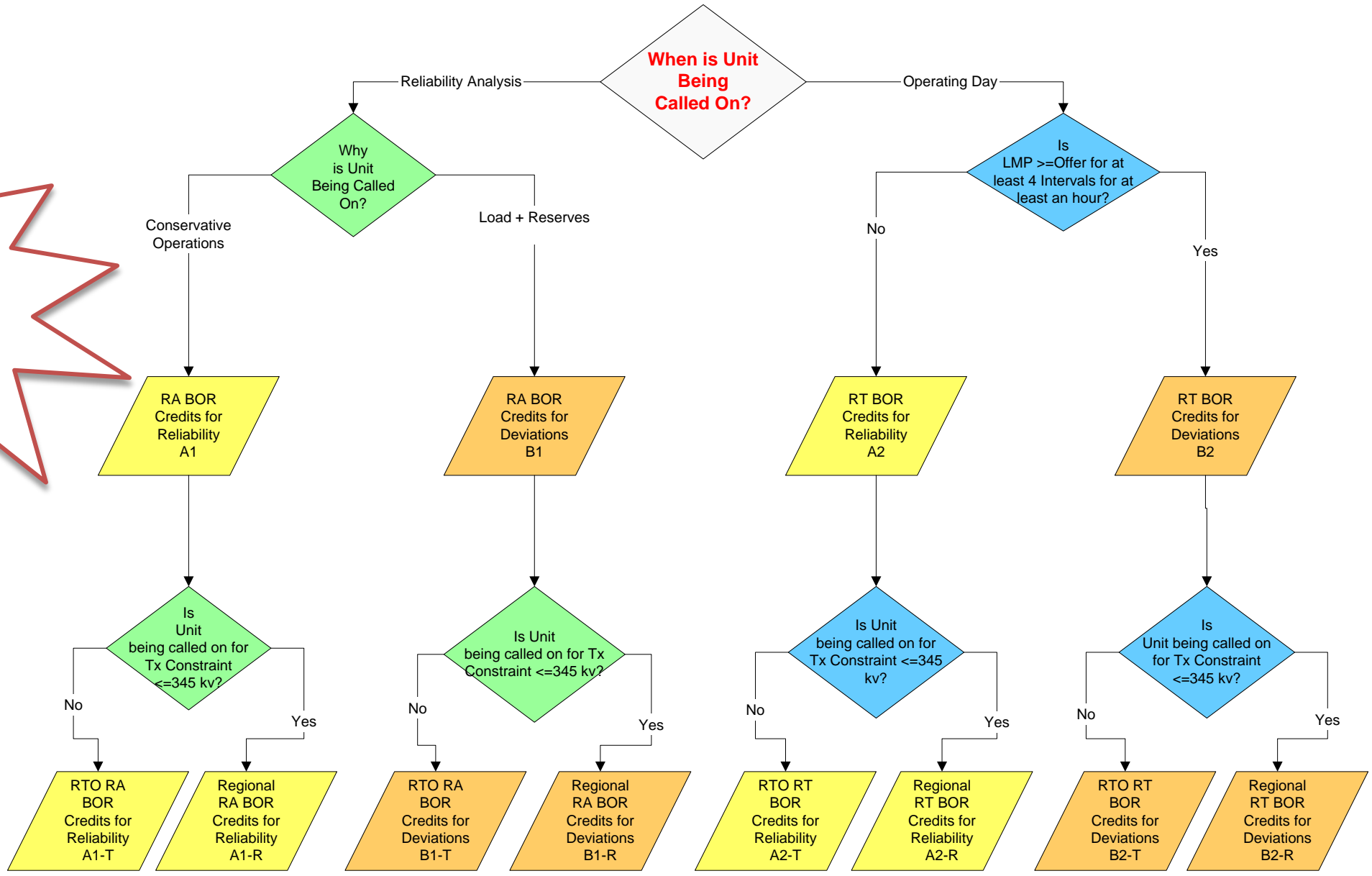
- *Any amounts credited for ...*
 - Day-ahead scheduling reserve in excess of day-ahead scheduling reserve offer plus opportunity cost
 - Synchronized reserve in excess of synchronized reserve offer plus opportunity cost
 - Non-synchronized reserve in excess of opportunity cost
 - Resources providing reactive services

Balancing Operating Reserve Cost Analysis (BORCA)

- PJM conducts BORCA to determine reason why Operating Reserve credit is earned so charges can be properly allocated
- PJM also calculates Regional Balancing Operating rate for cost of Operating Reserves that result from actions to control transmission constraints that are solely within pre-defined regions in RTO
 - BOR credits associated with constraint of $\leq 345\text{kV}$ are allocated regionally
- Additional costs of Operating Reserves that result from actions to control transmission constraints that benefit entire RTO are allocated equally to deviations across entire RTO

Balancing Operating Reserve Cost Allocation

BORCA separates TOTAL COST (credits) of BORs into 8 buckets



BOR Charges

- Total daily cost of operating reserve in balancing market related to resources identified as **Credits for Reliability** allocated based on regional shares of real-time load (without losses) plus exports
- Total daily costs of BOR related to resources identified as **Credits for Deviations** is allocated based on regional shares of real-time locational deviations from day-ahead scheduled quantities
 - Cleared generation offers not following PJM dispatch instructions
 - Cleared Demand Resources not following cleared Day-Ahead offer
 - Cleared INC offers and purchase transactions
 - Cleared demand bids, DEC bids, and sale transactions

Balancing Operating Reserve Charge (BLI 1375)

Reliability

Total BOR Credits for Reliability
(Total MWh Delivered to Load + Exports)

**Regional Rate for
BOR Credits for
Reliability**



**Participant Total MWh
Energy Delivered to Load + Exports
in Region**

- RTO region defined as East region, West region, & exports that are at interfaces or hubs not completely contained in either East or West region
- West region defined as AEP, AP, ATSI, ComEd, DEOK, DUQ, Dayton, & EKPC transmission zones
- East region defined as AE, BGE, DOM, Penelec, PEPCO, Meted, PPL, JCPL, PECO, Delmarva, PSEG, & Rockland transmission zones

Balancing Operating Reserve Charge (BLI 1375)

Deviations

- RTO region defined as East region, West region, & exports that are at interfaces or hubs not completely contained in either East or West region
- West region defined as AEP, AP, ATSI, ComEd, DEOK, DUQ, Dayton, & EKPC transmission zones
- East region defined as AE, BGE, DOM, Penelec, PEPCO, Meted, PPL, JCPL, PECO, Delmarva, PSEG, & Rockland transmission zones

Total BOR Credits for Deviations
(Total MW Deviations)

Regional Rate
for BORs for
Deviations



Total MW Deviations of
Participant
(by Region)

Other Charge Allocation Examples

- Pro-rata share of real-time load plus exports
 - Balancing Transmission Congestion
 - Balancing Transmission Losses
 - Synchronous Condensing
- Pro-rata share of day-ahead load plus exports
 - Day-ahead Operating Reserves

Other Charge Allocation Examples

- Real-time load ratio share within a transmission zone
 - Reactive Service
- Pro-rata obligation share of credits
 - Regulation
 - Tier 1 and Tier 2 Synchronized Reserve
 - Non-Synchronized Reserve