Circuit Breaker

EPFSTF

August 15, 2022

IMM

Monitoring Analytics

Circuit Breaker Concept

- The desire for a circuit breaker in energy market design is a recognition that there are market design problems in the energy market.
- The circuit breaker is intended to limit the effect of inefficient pricing on the market.
- Identified issues
  - Additivity of reserve penalty factors (ORDC)
  - Use of transmission constraint penalty factors (TCPF)
- The underlying issues should be addressed.
- A circuit breaker should target the specific issues identified, rather than applying a general price cap.

Problem with Price Caps

- **A cap on overall LMP would suppress efficient pricing.**
- **LMPs resulting from cost-based offers using correct short run marginal costs including fuel costs should not be capped.**
  - **Address fuel cost policies**
  - **Address VOM in offer caps**
  - **Address market power in the natural gas market**
- **FERC Order 831 caps offers at the greater of $1,000 per MWh or short run marginal cost up to $2,000 per MWh.**

Transmission Constraint Penalty Factor

- SCED prices at the TCPF when flows exceed the constraint limit in SCED, as reduced from the actual line limit by PJM.
- SCED Limit = Line Limit x Limit Control Percent
  - PJM should not use limit control percent under circuit breaker.
- When the actual or contingency flow is less than the line limit but above the line limit PJM enters in SCED, prices are artificially high.
- Under the circuit breaker, dispatch and pricing should be based on 100 percent of the line limit used in operations.

Circuit Breaker Trigger

- Triggers should be clear and not discretionary.
- Circuit breaker applies immediately with the trigger for the entire RTO and reserve subzone.
- Emergency actions should be a trigger.
  - Manual load dump
  - Voltage reduction
  - Call for demand side resources
- Catastrophic force majeure should be a trigger.
  - Same criteria as used for capacity performance
- Localized events trigger circuit breaker for entire RTO.

IMM Circuit Breaker Proposal

- **Circuit Breaker method**
  - **Only use one ORDC penalty factor in LMP: $850 per MW.**
    - Only one penalty factor added to LMP for shortage pricing.
    - No additivity of multiple ORDC penalty factors.
  - **All reserve prices are capped at $850 per MW.**
    - No additivity of ORDC penalty factors.
  - **Transmission constraint penalty factors**
    - No use of limit control less than 100% in RT SCED and LPC.
  - **No virtuals.**

Monitoring Analytics, LLC
2621 Van Buren Avenue
Suite 160
Eagleville, PA
19403
(610) 271-8050

MA@monitoringanalytics.com
www.MonitoringAnalytics.com