

# Performance Score Update

Regulation Market Issues Senior Task  
Force

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Performance Compliance

- Working to enhance/improve performance scoring for regulation
  - Performance Score Calculation (Matrix Item 15, 16, 16A, 16B, 16C)\*
    - \*16A, 16B, 16C New Matrix Items*
  - Regulation Participation Threshold (Matrix Item 17, 18B)
  - Regulation Qualification Testing (Matrix Item 14)

- Performance Score Calculation
  - Reevaluating the calculation of accuracy, delay and precision and the inclusion of all three components
    - PJM sees the intent of all components as important but is looking for the best way to represent them in the calculation.
    - PJM is also ensuring the performance calculation will account appropriately for when resources are not following the signal. (resource duration, basepoint issues, etc.)
  - Status Quo:  $1/3$  accuracy +  $1/3$  delay +  $1/3$  precision

- Performance Score Calculation
  - Status Quo: 1/3 accuracy + 1/3 delay + 1/3 precision
    - Current calculations being revisited

### Accuracy & Delay Calculation:

$$\text{Correlation Score}_{\delta=0 \text{ to } 5 \text{ Min}} = r_{\text{Signal, Response}(\delta, \delta+5\text{Min})}$$

$$\text{Delay Score} = \text{Abs} \left| \frac{\delta - 5 \text{ Minutes}}{5 \text{ Minutes}} \right|$$

### Precision Calculation:

$$\text{Error} = \text{Avg of Abs} \left| \frac{\text{Response} - \text{Regulation Signal}}{\text{Hourly Average Regulation Signal}} \right|$$

$$\text{Precision Score} = 1 - \frac{1}{n} \sum \text{Abs}(\text{Error})$$

- Regulation Participation Threshold
  - Participation in regulation needs to be held to a higher standard than the current 40% threshold.
  - PJM believes the participation threshold should be equivalent to the qualification threshold.
    - Changes in qualification testing and/or performance score may change proposing the participation threshold equivalent to qualification threshold.

- Regulation Qualification Testing
  - Qualification testing requirements to stay status quo
  - Performance scoring of qualification test will be in line with new proposed calculation
  - Threshold of qualification test (currently 75%) will be evaluated once performance metrics are finalized