



# Manual 15 Reserve Price Formation and Biennial Review Changes

Ilyana Dropkin  
Sr. Engineer I, Performance Compliance  
Members Committee  
September 21, 2022

- Manual 15, Version 41:
  - Impacted Manual Sections: 4.7, 5.7, 6.7, 7.7, 8.1 and 11.7
  - Removed references to Tier 1 and Tier 2 due to the Tier 1/Tier 2 consolidation
  - The Variable Operations and Maintenance component was removed from Synchronized Reserve offers
  - The existing \$7.50/MWh offer margin was reduced to the expected value of the penalty
  - Added the expected value of the penalty calculations
  - Removed Exhibit 10: Steam Unit Synchronized Reserve Example

The Expected Value of Penalty will be calculated and posted on PJM's Website  
Markets and Operations>Ancillary Services>Synchronized Reserve

*Expected Value of Penalty ( $\frac{\$}{MWh}$ ) = Average Penalty \* Average Rate of Nonperformance \* Probability an event will occur*

Where:

Average Penalty is expressed in \$/MWh and calculated as

$$\text{Average Penalty } \left( \frac{\$}{MWh} \right) = \frac{\text{Total Penalty } (\$)}{\text{Total Shortfall } (MWh)}$$

Average Rate of Nonperformance during Synchronized Reserve events is calculated as

$$\text{Average Rate of Nonperformance} = 1 - \text{Average Synchronized Reserve Response Rate}$$

Probability an event will occur is the probability a Synchronized Reserve event that will qualify for nonperformance assessments will occur and calculated as

$$\text{Probability an event will occur} = \frac{\text{Total Hours of Synchronized Reserve Events } \geq 10 \text{ Minutes}}{\text{Total Hours in the Period}}$$

- Manual 15, Version 42:
  - Corrected the CDS mission statement to reflect MIC, not MRC, as the parent committee in Section 1.5
  - Corrected the Incremental Heat Rate equation in Section 2.1
  - Corrected section titles in Section 9.7 and Section 13.3 Exhibit 28
  - Added missing chart and removed outdated no-load calculation in Attachment B
  - Corrected the equation for Basic Nuclear Fuel Cost in Section 3.3.1
  - Replaced “other Fuel-Related Costs” with “Operating Costs” in Sections 4.2 & 6.3.1
  - Removed reference to annual Fuel Cost Policy submission in Section 9.2

- 7.6.2022 CDS
- 7.13.2022 MIC (First Read)
- 8.10.2022 MIC (Vote). The changes were endorsed by MIC.
- 8.24.2022 MRC (First Read)
- **9.21.2022 MRC (Vote)**
- **9.21.2022 MC (Vote)**
- Implementation date for Reserve Price Formation is October 1, 2022. FERC approved PJM's compliance filing in Docket No. EL19-58-012.
- Implementation date for Biennial Review is November 1, 2022

Presenter/SME for Reserve Price  
Formation Changes:  
Ilyana Dropkin,  
[Ilyana.Dropkin@pjm.com](mailto:Ilyana.Dropkin@pjm.com)

SME for Biennial Changes:  
Jennifer Freeman,  
[Jennifer.Freeman@pjm.com](mailto:Jennifer.Freeman@pjm.com)



### Member Hotline

(610) 666 – 8980

(866) 400 – 8980

[custsvc@pjm.com](mailto:custsvc@pjm.com)

**PROTECT THE  
POWER GRID  
THINK BEFORE  
YOU CLICK!**



Be alert to  
malicious  
phishing emails.

**Report suspicious email activity to PJM.**  
(610) 666-2244 / [it\\_ops\\_ctr\\_shift@pjm.com](mailto:it_ops_ctr_shift@pjm.com)

