

# Reserve Price Formation Manual Revisions

Damon Fereshetian  
Sr. Engineer I, Real-Time Market Operations  
Market Implementation Committee  
July 13, 2022

- Several manuals require updates to account for the Reserve Price Formation implementation:
  - Operations Related Manuals:
    - Manual 10: Pre-Scheduling Operations
    - Manual 12: Balancing Operations
    - Manual 13: Emergency Operations
  - Markets and Settlements Related Manuals:
    - Manual 11: Energy & Ancillary Services Market Operations
    - Manual 15: Cost Development Guidelines
    - Manual 28: Operating Agreement Accounting
    - Manual 29: Billing



# Reserve Price Formation Manual Revision Schedule

	Committee	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
Manuals 10, 12, 13	SOS				8/3 ●	★ 9/1			
	OC				8/11 ●	★ 9/8			
	MRC				8/24 ●	★ 9/21			
Manuals 11, 28, 29	MIC				8/10 ●	★ 9/7			
	MRC				8/24 ●	★ 9/21			
Manual 15	CDS			7/6 ○					
	MIC			7/13 ●	★ 8/10				
	MRC				8/24 ●	★ 9/21			
	MC				8/24 ●	★ 9/21			

- *First Read*
- ★ *Endorsement*
- *Info Only*

Go-live for Reserve Price Formation changes is **October 1**



# Revisions to M-11 v122: Reserve Price Formation

- Effective October 1, 2022 several aspects of the PJM Reserve markets will change
  - As a result of Reserve Price Formation efforts, 2018 to-date
    - Consolidation of Tier 1 and Tier 2 Synchronized Reserve products
    - Alignment of reserve products in Day-Ahead and Real-Time
    - Flexible modeling of Reserve subzones
- All revisions to M-11 v122 are meant to be conforming to FERC Orders: EL19-58-000 and ER19-1486-000
  - FERC's response to the PJM February 22, 2022 Compliance Filing is pending

- All Reserve rules will be covered in one overarching section and will merge existing sections:
  - Current section 4: Overview of the PJM Synchronized Reserve Market
  - Current section 4b: Overview of the PJM Non-Synchronized Reserve Market
  - Current section 11: Overview of the Day-ahead Scheduling Reserve Market

- Section 4: PJM Reserve Markets
  - 4.1 Overview of the PJM Reserve Markets
  - 4.2 PJM Reserve Markets Offer Business Rules
    - 4.2.1 Reserve Markets Resource Eligibility
      - 4.2.1.1 Requests for Eligibility for Nuclear, Wind, Solar Resources
      - 4.2.1.2 Economic Load Response Reserve Eligibility
    - 4.2.2 Reserve Resource Offer Requirements
      - 4.2.2.1 Requests for Adjustments to Reserve Maximums
    - 4.2.3 Offer Period Timing
    - 4.2.4 Reserve Markets Resource Offer Structure

- 4.2 PJM Reserve Markets Offer Business Rules (cont.)
  - 4.2.5 Reserve Markets Resource Capability
    - 4.2.5.1 Reserve Markets Capability for Online Generation Resources
    - 4.2.5.2 Reserve Markets Capability for Offline Generation Resources
    - 4.2.5.3 Reserve Markets Capability for Synchronous Condensers
- 4.3 Reserve Requirement Determination
  - 4.3.1 Locational Aspect of Reserves
  - 4.3.2 Creation of new Reserve Subzones
  - 4.3.3 Reserve Demand Curves and Penalty Factors



- 4.4 Reserve Markets Clearing
  - 4.4.1 Product and Locational Substitution
  - 4.4.2 Day-Ahead Reserve Market Clearing
  - 4.4.3 Real-Time Reserve Market Clearing
  - 4.4.4 Reserve Market Clearing Optimization
  - 4.4.5 Determination of Reserve Clearing Prices

- 4.5 Event Performance
  - 4.5.1 Performance Verification
  - 4.5.2 Non-Performance
- 4.6 Reserve Obligations
- 4.7 Bilateral Transactions
- 4.8 Settlements

- Section 2.5.3.3 - Real-time Security Constrained Economic Dispatch Methodology
  - Updated Achievable Target MW calculation
  - Updated definition of up/down ramp rate used
  - Updated diagram to reflect these changes

This enhancement was deployed to production on June 28, 2022

Facilitator:

Lisa Morelli, [Lisa.Morelli@pjm.com](mailto:Lisa.Morelli@pjm.com)

Secretary:

Nick DiSciullo, [Nicholas.DiSciullo@pjm.com](mailto:Nicholas.DiSciullo@pjm.com)

SMEs/Presenters:

Damon Fereshetian, [Damon.Fereshetian@pjm.com](mailto:Damon.Fereshetian@pjm.com)

## Reserve Price Formation Manual Revisions



### 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)

