



# Summary of Proposed Language for Manual 11: Energy & Ancillary Services Market Operations

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Manual 11: Energy & Ancillary Services Market Operations,  
Revision 118

- Introduced as part of 5 Minute Dispatch and Pricing problem statement
  - LMP Verification Enhancements and Clarifications
- Increase Transparency
  - Offers a more robust way to finding a suitable replacement for de-energized pricing nodes (pnodes)
- Opportunity to enhance existing Dead Bus Replacement Logic

- Required to produce LMPs for all pnodes in the PJM network model for all intervals, including de-energized pnodes
- Per M-11, automated de-energized pnode replacement logic in LPC is used to find the closest suitable live pnode for a given de-energized pnode
  - Same station, same voltage level
  - Same station, different voltage level
  - Nearest neighboring station
  - If the automated process cannot find a suitable replacement, the pnode is manually replaced as part of the LMP verification process
  - RT Market Operators also review de-energized pnodes that are automatically replaced by the engine to determine if a more optimal bus should be used

- New logic is based on Dijkstra algorithm to finding suitable replacement for de-energized pnodes
  - Uses least impedance path to find a suitable source
  - If the automated process cannot find a suitable replacement, the pnode is manually replaced as part of the LMP verification process (same to today)
  - Market Operators also review de-energized pnodes that are automatically replaced by the engine to determine if a more optimal bus should be used (same to today)
  - To be implemented in both the Day-ahead and Real-time Market Clearing Engines

- Section 2.7.2: Determination of LMPS for De-Energized Busses
  - Updated language to reflect new logic
- Section 4b.1: Overview of the Non-Synchronized Reserve Market
  - Updated to remove inaccurate language
  - Commitments for NSR assignments from dispatch run are used for settlement (not from pricing run)
- Section 10.4.1: Metered Data
  - Updated to reference correct attachment
  - Attachment C instead of D of Manual 19

- Clarify generation resource's fuel cost policy only needs to be updated when opting in to intraday updates for the cost-based schedule
- M-11 language cleanup from 2019 FCP changes which removed the FCP requirement for zero cost resources
- Opportunity to update M11 as part of on-going endorsement efforts
- Changes were not included in the first read at the December MIC or December MRC

	<b>MIC</b>	<b>MRC</b>
First Read	12.1.2021	12.15.2021
Endorsement	1.12.2022	1.26.2022

- New Dead Bus Replacement Logic & Manual revision to be effective March 1, 2022

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**De-Energized Bus Replacement – Manual 11 Revisions**



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