

# The Impacts of New Secondary Reserve Requirements on Day-Ahead and Real-Time Market Clearing Prices

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- Request to see the impacts of increasing the secondary reserve requirements on ancillary service market clearing prices.
- Simulations were done for two sets of days: 1) days that committed MWs were below the new proposed requirements and 2) the last two weeks of May 2024.
- Two scenarios were simulated:
  - “Base” case with the current requirements for secondary reserves.
  - “New” case with the proposed requirements for secondary reserves.
- PROBE Day-Ahead and PROBE Perfect Dispatch were used to run the simulations for the day-ahead and real-time energy markets, respectively.

- For the Day-Ahead energy market, the simulated days and the current and new secondary reserve requirements are as follows:

Day	Current Req. (MW)	New Req. (MW)	Day	Current Req. (MW)	New Req. (MW)
12/25/2022	3,190.0	5,756.0	5/21/2024	3,664.9	5,286.0
7/28/2023	3,473.8	6,836.0	5/23/2024	3,664.9	5,093.0
7/29/2023	3,473.8	5,938.0	5/24/2024	3,664.9	5,187.0
5/17/2024	3,664.9	4,155.0	5/25/2024	3,664.9	4,858.0
5/18/2024	3,664.9	3,944.0	5/27/2024	3,664.9	4,518.0
5/19/2024	3,664.9	4,155.0	5/30/2024	3,664.9	4,178.0
5/20/2024	3,664.9	4,887.0	5/31/2024	3,664.9	4,152.0

Note that May 22, 26, 28 & 29, 2024 were not included due to convergence issues with the simulations.

- For the Real-Time energy market, the simulated days and the current and new secondary reserve requirements are as follows:

Day	Current Req. (MW)	New Req. (MW)	Day	Current Req. (MW)	New Req. (MW)
12/24/2022	3,190.0	5,701.0	5/24/2024	3,664.9	5,187.0
7/27/2023	3,520.2	6,781.0	5/25/2024	3,664.9	4,858.0
5/17/2024	3,664.9	4,155.0	5/26/2024	3,664.9	4,922.0
5/18/2024	3,733.7	3,944.0	5/27/2024	3,664.9	4,518.0
5/19/2024	3,692.2	4,155.0	5/28/2024	3,697.7	4,585.0
5/20/2024	3,735.9	4,887.0	5/30/2024	3,664.9	4,178.0
5/21/2024	3,664.9	5,286.0	5/31/2024	3,664.9	4,152.0
5/23/2024	3,728.5	5,093.0			

Note that May 22, 2024 and May 29, 2024 were not included due to convergence issues with the simulations.

- Simulation results are shown in the attached spreadsheets for both day-ahead and real-time ancillary service market clearing prices.
- New proposed reserve requirements do not have a significant impact on the market clearing prices for the synchronized reserve, primary reserve, and secondary reserve products.
- The new proposed reserve requirements can result in commitment changes in both DA and RT. In the DA simulations, all unit types were available to be committed/decommitted by the simulations. In the RT simulations, only CTs and Diesels were available to be committed/decommitted by the simulations. All other commitments were held fixed to historical results. Small changes in the unit commitment can result in both positive and negative changes to the reserve market clearing prices.

- The following table shows the daily average MCP difference (New case – Base case) in the DA energy market:

Day	SR (\$/MWh)	PR (\$/MWh)	SecR (\$/MWh)	Day	SR (\$/MWh)	PR (\$/MWh)	SecR (\$/MWh)
12/25/2022	0.00	0.00	0.00	5/21/2024	0.00	-0.22	0.00
7/28/2023	0.00	0.00	0.00	5/23/2024	0.00	0.00	0.00
7/29/2023	0.00	0.00	0.00	5/24/2024	0.00	0.00	0.00
5/17/2024	0.00	0.00	0.00	5/25/2024	0.00	0.00	0.00
5/18/2024	0.00	0.00	0.00	5/27/2024	0.00	-0.16	0.00
5/19/2024	0.00	0.00	0.00	5/30/2024	0.00	-0.19	0.00
5/20/2024	0.00	-0.09	0.00	5/31/2024	0.00	0.00	0.00

Note that the results are rounded to two decimal points.

- The following table shows the daily average MCP difference (New case – Base case) in the RT energy market:

Day	SR (\$/MWh)	PR (\$/MWh)	SecR (\$/MWh)	Day	SR (\$/MWh)	PR (\$/MWh)	SecR (\$/MWh)
12/24/2022	-0.08	-0.08	0.00	5/24/2024	0.00	0.00	0.00
7/27/2023	0.00	0.00	0.00	5/25/2024	0.00	0.00	0.00
5/17/2024	0.00	0.00	0.00	5/26/2024	0.00	0.00	0.00
5/18/2024	0.00	0.00	0.00	5/27/2024	0.00	0.00	0.00
5/19/2024	0.08	0.08	0.00	5/28/2024	0.00	0.00	0.00
5/20/2024	0.00	0.00	0.00	5/30/2024	0.00	0.00	0.00
5/21/2024	0.10	0.10	0.00	5/31/2024	0.00	0.00	0.00
5/23/2024	0.00	0.00	0.00				

Note that the results are rounded to two decimal points.

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## Impacts of New Secondary Reserve Requirements on DA and RT MCP



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