



Electric Gas Coordination Senior Task Force

Susan McGill, Strategic Initiatives

Markets and Reliability Committee

May 22, 2024

- Approved to start work at the Sept. 29, 2021 Markets and Reliability Committee
- Addresses challenges faced by gas generation units in working with both the electric and gas markets
- First meeting – Nov. 5, 2021
 - 28 meetings held

- Outline history of regulatory efforts to address misalignment between gas and electric markets.
- Educate stakeholders on natural gas pipeline tariffs, products and procurement. Provide details of imbalance charges and penalties.
- Provide an overview of recent events in other ISOs and RTOs, including gas and electric coordination failures.
- Provide education on gas pipeline constraints and fuel procurement that is in the planning and economic dispatch models.
- Analyze impacts on natural gas usage with continued increase in intermittent generation on the PJM Region bulk electric system.

- Establish areas of common understanding (e.g. market solution is ideal, reliability event avoidance, equitable)
- Examine possible improvements to coordination and emergency procedures between PJM and natural gas pipelines to ensure reliable operation of the bulk electric system in the PJM Region.
- Examine PJM situational awareness of market sellers' fuel supply.
- Examine possible improvements to PJM's Economic Dispatch model that accounts for fuel limitations.
- Examine possible improvements to the assumptions of pipeline flexibility used in PJM reliability planning.
- Examine potential market solutions to improve fuel procurement flexibility, modeling and optimization of gas and electric market alignment.
- Identify potential market power and/or manipulation risks.

- First vote conducted after the Oct. 19, 2023 meeting.
 - 6 packages offered
 - No packages passed or were preferred over status quo
 - Refocused efforts to build consensus on top two packages

- Second vote conducted after the Jan. 30, 2024 meeting
 - Single package (PJM, Dominion, Red Oak, Rockland, J-Power)

	Yes	No	Abstain
Endorse	97 (56%)	75	5
Prefer over status quo	97 (56%)	75	5

- Manual 11
 - Intraday Reliability Commitment Runs
 - Gas Procurement Notification for Resources Committed in the Day Ahead Market
- Manual 13
 - Gas Procurement Notification for Resources Committed in the Day Ahead Market

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

Manual 13: Emergency Operations, Revision xxx

- **M11, Section 2.3.1**

- **2.3.1 Bidding & Operations Time Line**

- The Day-ahead scheduling/bidding timeline for PJM Energy Markets consists of the following time frames:

- **11:00** — Day-ahead Market bid period closes. All bids and offers must be submitted to PJM. At 11:00 PJM begins to run the Day-ahead Market Clearing Engine to determine the hourly commitment schedules and the LMPs for the Day-ahead Market. The Day-ahead clearing results in the resource commitment profile that satisfies the fixed demand, cleared price-sensitive demand bids, cleared demand reduction bids, and PJM Day-ahead Reserve objectives, while minimizing the total production cost (subject to certain limitations) for energy and reserves. This commitment analysis also includes external bilateral transaction schedules and external resource offers into the PJM Day-ahead Market.
- **Prior to 13:30** – PJM posts the Day-ahead hourly schedules and LMPs in the Markets Gateway System. PJM also makes these results available in downloadable files, via the Markets Gateway System, or a dedicated communication link.
- **After Day-ahead Results posting up until 14:15** — PJM opens the Real-time Energy Market offer period. During this time, market participants can submit revised resource offers. However if the market participant self-scheduled their unit in the Day-ahead Market, they cannot change the unit status to economic in the rebid period.
- **14:15 –The Real-time Energy Market offer period closed.** PJM performs a second resource commitment known as the Reliability Assessment and Commitment (RAC) Run, which includes the updated offers, updated resource availability information and updated PJM load forecast information and load forecast deviation. The focus of this commitment is reliability and the objective is to minimize startup and no load costs for any additional resources that are committed.
- **14:15-Operating Day** — PJM may perform additional resource commitment runs, as necessary, based on updated PJM load forecasts and updated resource availability information. PJM sends out individual generation schedules updates to specific generation owners only, as required.
 - PJM will target intra-day resource commitment runs to be commensurate with the three (3) existing intra-day NAESB gas nomination cycle deadlines. Section 2.5.4 provides details on the timing of these intra-day unit commitments.
- **18:30-Operating Day** – Starting at 18:30 (typically after the Reliability Assessment and Commitment Run completes) and up to sixty-five (65) minutes prior to the operating hour, revised resource offers may be submitted to PJM.

During certain higher demand or capacity constrained periods, natural gas fired generation resources scheduled in the Day-ahead Market for energy or reserves should use every reasonable effort to notify PJM that natural gas supply needed to meet their day ahead commitment has either been procured or is expected to be available to procure. This voluntary notification action will be completed in Markets Gateway during the periods identified in the chart below. Gas resources committed in the Day-ahead Market that choose to submit notification should use every reasonable effort to update Markets Gateway between the hours of 1500 and 2400 the day prior to the start of the new Operating Day.² Neither notification, nor the failure to provide notification, is intended to be binding or punitive and will not alter any previous dispatch instructions. Gas generating resources committed in the day ahead market that are unable to procure adequate gas supply to meet their Day-ahead energy or reserve commitment are required to notify PJM dispatch by adjusting their availability and/or unit parameters in Markets Gateway, submitting an eDART ticket indicating their effective availability and via telephone call to PJM dispatch.

Note:

Notification of gas supply availability, particularly during critical operating periods, is essential to providing optimal situational awareness of generator availability to PJM Operations.



First Read M11 – Section 2.3.3 Market Sellers

Start Date	End Date	PJM Operating Condition	Confirmation expected to be made in Markets Gateway ²
December 1	February 28 or 29	N/A (Each Operating day during this period)	Between 1500 and 2400 the day prior to Day-ahead commitment
March 1	November 30	Only During Hot Weather Alert or Conservative Operations ¹	Between 1500 and 2400 the day prior to Day-ahead commitment

- ¹ During either a Hot Weather Alert or Conservative Operations, regardless of geographic coverage of those alerts, all day ahead gas units in the PJM RTO would be expected to make this notification.
- ² Recognizing that gas supplies can be cut for a variety of reasons after procurement, it may be necessary to update Markets Gateway more than once during the 1500 to 2400 time window to reflect current supply availability to meet the Day-ahead commitment.

- PJM may perform additional resource commitment runs, as necessary throughout the entire Operating Day, based on updated PJM load forecasts, updated resource parameters or changing system conditions. PJM will target three (3) intraday reliability commitment runs that align with the three (3) North American Energy Standards Board (NAESB) Intraday Nomination Cycle deadlines. To the extent that a natural gas generator is identified as being needed to operate during any of the 3 runs, PJM will endeavor to provide notification to the resource in advance of the time identified in column C in the table below.



First Read M11 – NEW Section 2.5.4 Intra-Day Reliability Assessment and Commitment Runs

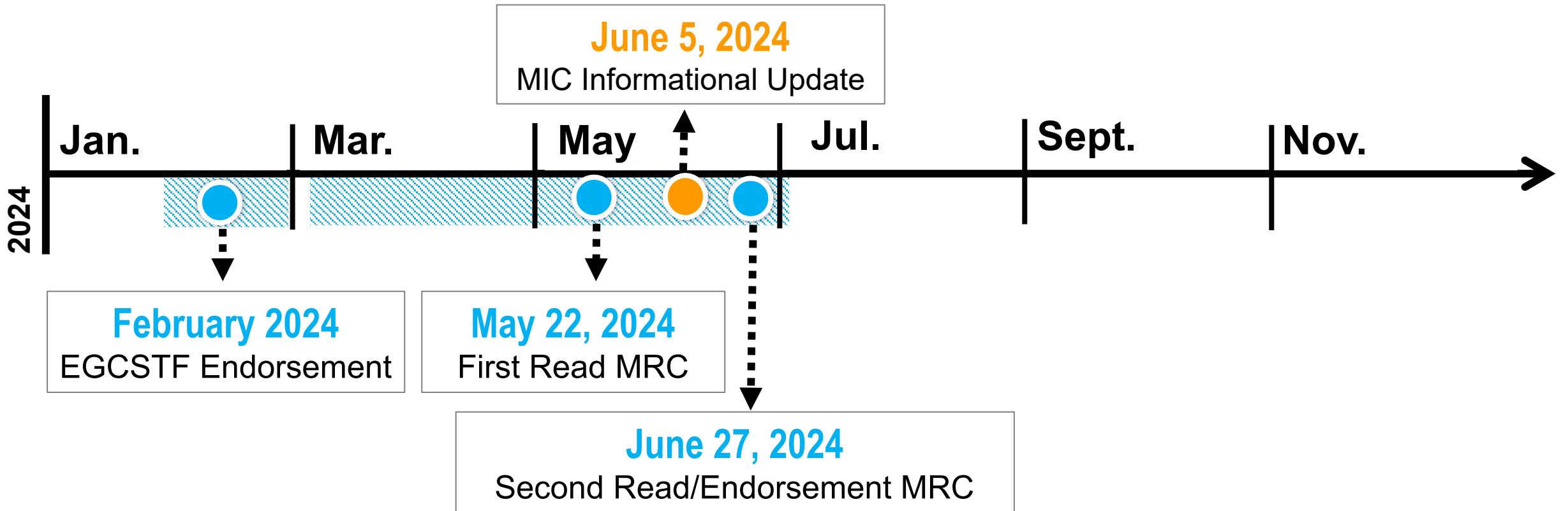
A	B	C	D
PJM Reliability Commitment Run Target Time (Eastern)	NAESB Intraday Gas Cycle	NAESB Gas Nomination Deadline (Eastern)	PJM Target Dispatch Period Associated with Reliability Commitment Run
09:00	Intraday 1	11:00	Same Day Evening Peak
14:15	Intraday 2	15:30	Same Day Evening Peak
18:00	Intraday 3	20:00	Next Day Morning Peak

- **PJM Member Actions**
- Transmission/Generation dispatchers notify management of the declaration.
- Transmission/Generation dispatchers and PJM Marketers respond, as required, to specific requests and directions of PJM dispatcher.
- Generation dispatchers report to PJM Dispatch any and all resource limited facilities as they occur via Markets Gateway, as described in Section 6.4, and update PJM Dispatch as appropriate.
- **Effective March 1 through Nov. 30, between the hours of 15:00 Eastern Prevailing Time and 24:00 Eastern Prevailing Time, Generation dispatcher of natural gas fired resources will update Markets Gateway to indicate that gas supply either (1) has been procured or (2) is expected to be available, to meet their Day-ahead energy and/or reserve commitment for the next operating day as indicated in Manual 11, Section 2.3.3.**
- Participate in PJM hosted SOS conference calls.



First Read M13 – Section 3.4 Hot Weather Alert

- PJM Member Actions:
- Transmission/Generation dispatchers notify management of the alert.
- Generation dispatchers update their unit parameters, including the Start-up and Notification, Min Run Time, Max Run Time, Eco Min, Eco Max, etc. in Markets Gateway.
- Generation dispatchers report to PJM Dispatch any and all resource limited facilities as they occur via Markets Gateway, as described in Section 6.4, and update PJM Dispatch as appropriate.
- Generation dispatchers with dual fuel determine whether alternate fuel will be made available to PJM for dispatch. If made available, any known alternate fuel resource limitations will be communicated via Markets Gateway as described in Section 6.4.
- Generation dispatchers advise all generating stations and key personnel.
- Transmission/Generation dispatchers review plans to determine if any maintenance or testing, scheduled or being performed, on any monitoring, control, transmission, or generating equipment can be deferred or cancelled.
- Generation dispatchers report to PJM dispatcher all resource limited facilities as they occur and update PJM dispatcher as appropriate and update the unit Max Run field in Markets Gateway if less than 24 hours of runtime remaining.
- **Effective March 1 through Nov. 30, between the hours of 15:00 Eastern Prevailing Time and 24:00 Eastern Prevailing Time, Generation dispatcher of natural gas fired resources will update Markets Gateway to indicate that gas supply either (1) has been procured or (2) is expected to be available, to meet their Day-ahead energy and/or reserve commitment for the next operating day as indicated in Manual 11, Section 2.3.3.**
- Generation dispatchers will update the “early return time” for any Planned generator outages as indicated in PJM Manual for Pre-Scheduling Operations (M-10), Section 2.2.



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Electric Gas Coordination Senior Task Force



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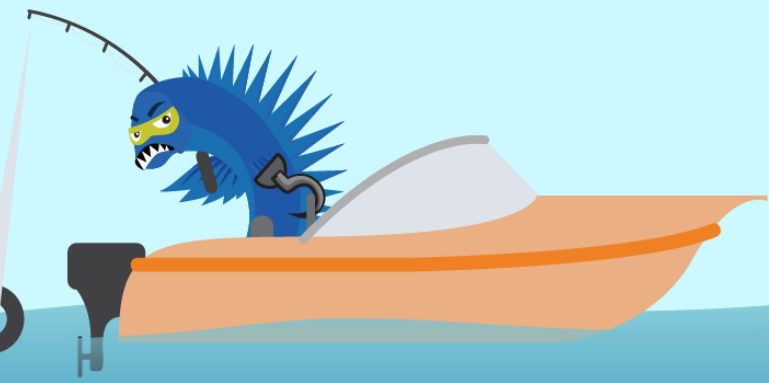
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**PROTECT THE
POWER GRID**

**THINK BEFORE
YOU CLICK!**



**BE ALERT TO
MALICIOUS PHISHING
EMAILS**



**Report suspicious email activity to PJM.
Call (610) 666-2244 or email it_ops_ctr_shift@pjm.com**