



PJM and Dominion Energy Joint Solution Options Package

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October 18, 2023

- PJM, Dominion Energy and Monitoring Analytics made a strong attempt to consolidate solution options into a single joint package
- While significant progress was made, there remains a difference of approach with one of the design components
- The end result is a joint solution option package from PJM and Dominion with an independent package from Monitoring Analytics that is nearly identical except for design component 10

- Addressing gaps in situational awareness, particularly during winter operations with primary emphasis on:
 - Gas supply availability
 - Gas transportation constraints
 - Gas generator availability



Proposed PJM/Dominion Energy Package

Number	Design Component	Status Quo	PJM/Dominion Energy
8	Fuel inventory and alternate fuel capability	Annual Pre Winter Generator Fuels Data Request; PJM Manual defined guidelines for fuel limited resources offered as maximum emergency; PJM Data Requests	Status Quo
11	Pipeline, gas supply, dual fuel arrangements	Annual Pre Winter Generator Fuels Data Request; PJM Manual defined guidelines for fuel limited resources offered as maximum emergency; PJM Data Requests	Status Quo
12	Visibility of all fuel limitations	Fuel limitations reflected in operating parameters that determine reserve estimates	<p><u>Short Term</u>: Reflect nomination deadlines, ratable takes in operating parameters when enforced by pipelines. (9/8/23-temporary exception guideline document posted on PJM and IMM websites) Document in PJM manuals</p> <p><u>Mid Term</u>: Remove RTVs. Allow for real time temporary exceptions. (9/11/23 Joint PJM/IMM FERC filing)</p> <p><u>Long Term</u>: Introduce new operating parameter for extending runs.</p>
2	Fuel Cost Policies	Fuel cost policies define acceptable gas cost adders	Status Quo
5	Recovery of cost of fuel disposal as a result of a canceled dispatch	LOC only, temporary exemptions allowed for pipeline enforced ratable gas for PLS	Status Quo



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3	Natural gas volume commitment	Owner makes economic decision to self-schedule and burn the remaining gas or choses to dispose of it. Generators typically need to procure gas prior to knowing if they are needed (primarily real time dispatch or over weekend periods beyond the day ahead market)	Gas units will be required to confirm if gas supply has been purchased and nominated to meet DA award.
4	Dispatch Instructions	Gas pipeline and supply constraints not incorporated in dispatch instructions	Status Quo
6	Day ahead award model	Lack of weekend gas market liquidity The natural gas market is generally not as liquid during weekend periods with many market participants procuring required gas volumes on Friday for the Saturday through Monday periods. On Friday, generation resources will only know their day ahead commitment requirements for the Saturday electric day (12am to 12am). Units that are needed during the weekend are subject to gas availability and price risk over the weekend period.	Status Quo
7	Training	PJM/Pipeline/LDCs Historically, PJM has been engaged in various tabletop drills with interstate pipelines and local gas distribution companies	Status Quo but make non confidential training material and exercise information available to stakeholders



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9	N-1 reliability and emergency spin reserves	PJM currently assesses pre-defined gas contingencies during all cold weather and hot weather alerts as well as when certain events occur such as an emergent pipeline failure or disruption.	Status quo. With the implementation of short and mid term solutions in 12, units that normally qualify as offline primary or secondary reserves will not be assigned reserves based on the extended notification times.
10	Communication protocols for advance notice of fuel limitations.	Markets Gateway functionality Market participants can currently use Markets Gateway to communicate gas limitations to PJM	During PJM Cold Weather Alerts, require gas fired units offering on gas and that have not secured gas supply to proactively contact suppliers twice a day during cold weather alerts to confirm supply availability. The first check on supply availability should occur no later than 9am to be indicative of requirements for the 4pm to 8pm evening peak period. The second check on supply availability should occur no later than 6pm to be indicative of potential requirements for the next morning peak period (6am to 10am). Any indication of lack of supply should be reflected as a forced outage immediately.
11	CT firm commitment in day-ahead		Gas units that do not meet the Flexible Resource definition that clear DA should be treated the same as STs/CCs in real time. OA Definition. "Flexible Resource" shall mean a generating resource that must have a combined Start-up Time and Notification Time of less than or equal to two hours; and a Minimum Run Time of less than or equal to two hours.

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