Real Time Values Additional Education

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MIC Special Session – Review of Real Time Values Market Rules
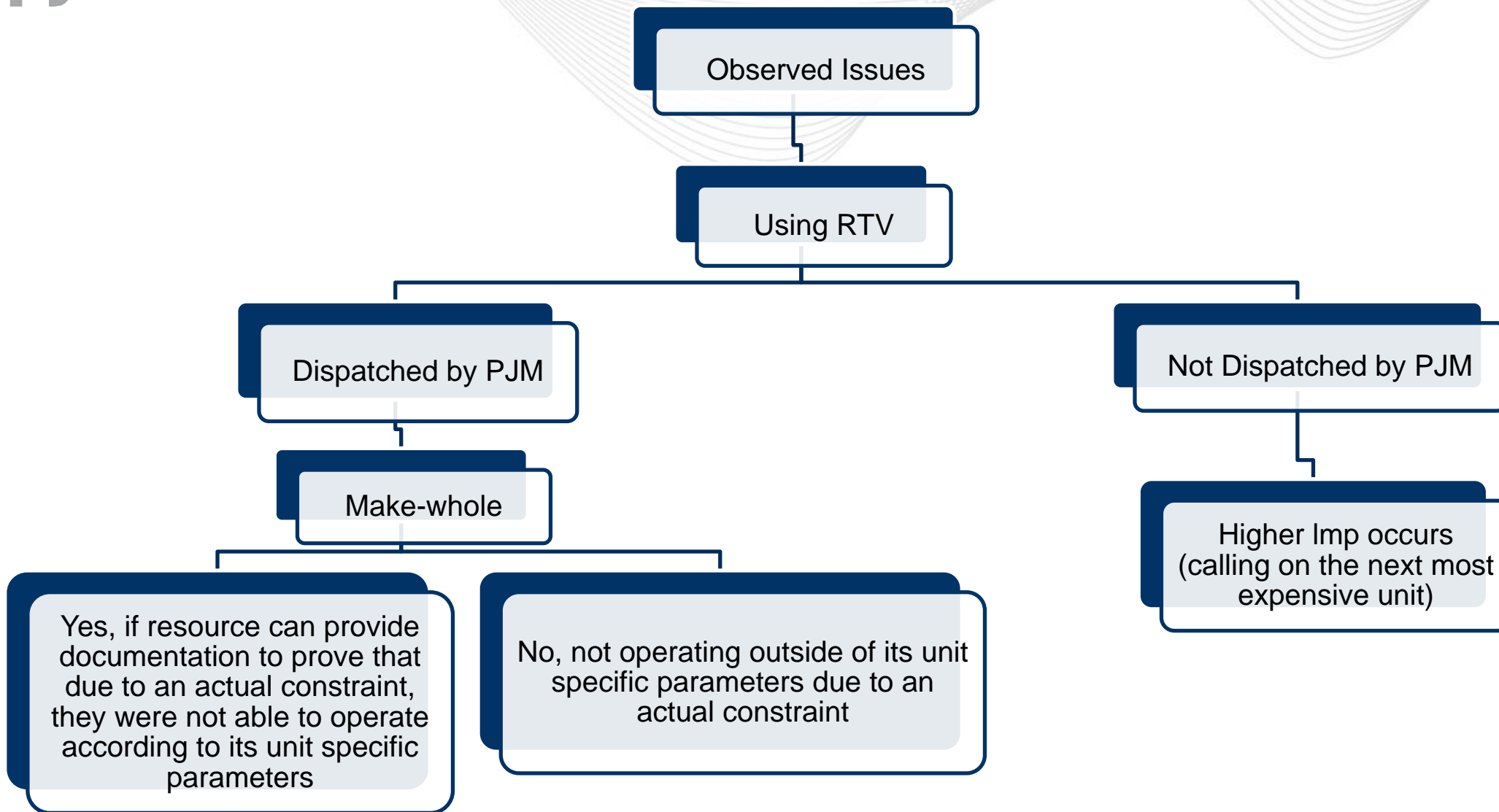March 3, 2020

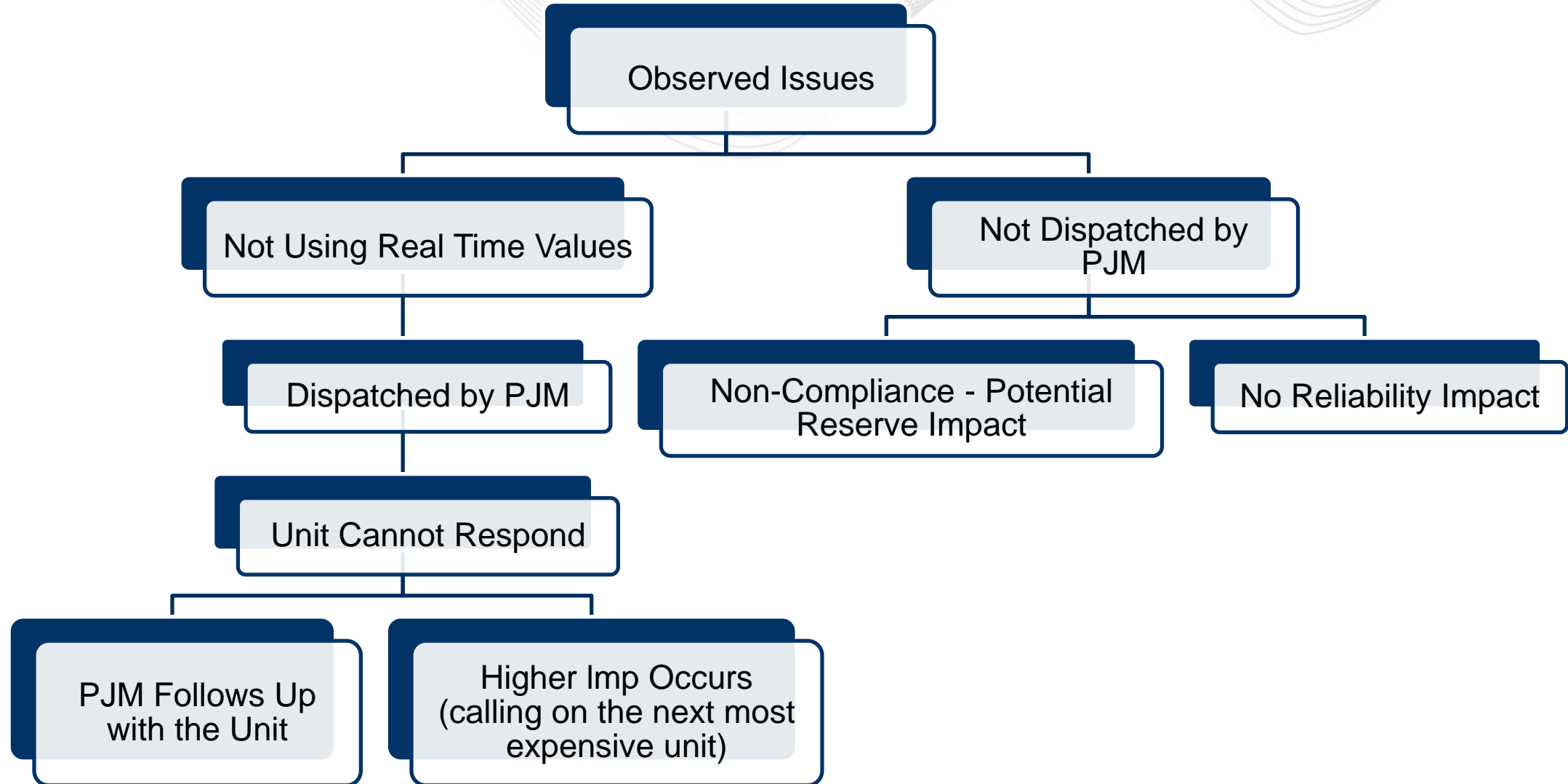69 units over 12 month period (December 2018 – November 2019)

Parameter	Requests
Notification Time	630
Minimum Down Time	541
Cold Start Time	134
Intermediate Start Time	136
Hot Start Time	129
Maximum Run Time	74

***These are the number of requests. Each request may span one or more days per resource

Example: Unit A submitted 5 requests for Notification time between 12/2018 & 11/2019

Resource/Parameter	Effective Date/Time	Duration of Request (days)
Unit A/Notification Time	9/1/2019 4:00 AM – 9/2/2019 4:00 AM	1
Unit A/Notification Time	9/2/2019 4:00 AM – 9/6/2019 4:00 AM	4
Unit A/Notification Time	9/17/2019 4:00 AM – 9/20/2019 4:00 AM	3
Unit A/Notification Time	9/22/2019 4:00 AM – 10/20/2019 4:00 AM	28
Unit A/Notification Time	10/24/2019 4:00 AM – 10/25/2019 4:00 AM	1
Total = 5 requests		Total = 37 days

Observed Issues

Using RTV

Dispatched by PJM

Not Dispatched by PJM

Make-whole

Higher Imp occurs (calling on the next most expensive unit)

Yes, if resource can provide documentation to prove that due to an actual constraint, they were not able to operate according to its unit specific parameters

No, not operating outside of its unit specific parameters due to an actual constraint

1. Resource submits a PLS adjustment request for notification time with the justification of additional time is needed when plant is not staffed.

    1. PJM denies PLS adjustment request and resource receives the proxy parameter limit for its technology type (ex. 6 minutes).

2. Resource submits a PLS temporary exception for the increase in notification time when the plant is not staffed.

    1. PJM denies PLS exception request and resources remains with the proxy parameter limit.

3. Resources uses RTV to override unit specific parameter to increase the notification time.

1. Resource has the notification time proxy parameter limit for its technology type (ex. 6 min).

2. Resource does not use any form of communication to notify PJM Dispatch that it is not able to operate according to its unit specific parameter limit.

3. In real-time, the unit is dispatched by PJM based on the 6 minute proxy parameter on its price-based PLS or cost-based schedule.

4. At this time, the resource notifies PJM that they need more than 6 minutes to respond to the dispatch signal.

5. PJM then must call now call on a more expensive unit.

- After the close of the Day Ahead Market an unmanned Combustion Turbine (CT) loses communications and remote start capability.

  - Market Seller enters current start time into Markets Gateway for the Real time using Real Time Values.

- During Real Time, a steam unit experiences an issue with its SCR resulting in an increase in its Eco Min to remain compliant with its air permit.

  - Market Seller enters a revised Turn Down Ratio into Markets Gateway using Real Time Values.

Appendix

- Manual 11 Section 2.3.4 and 2.3.4.4

http://www.pjm.com/~/media/documents/manuals/m11.ashx

- CP Unit Specific Parameter Adjustment FAQs

https://pjm.com/-/media/committees-groups/committees/elc/postings/20150715-cp-unit-specific-adjustment-request-faqs.ashx?la=en

- PJM Operating Agreement Schedule 1 Section 6.6

https://www.pjm.com/directory/merged-tariffs/oa.pdf

- Capacity Performance at a Glance

https://pjm.com/-/media/library/reports-notices/capacity-performance/20150720-capacity-performance-at-a-glance.ashx?la=en

- Capacity Performance Training

https://pjm.com/-/media/committees-groups/committees/elc/postings/20150709-capacity-performance-training.ashx?la=en

Real Time Values Process

Why was the process implemented?	For Resources to communicate their current operational capabilities when the resource cannot operate according to the unit specific parameters (CP and uncommitted capacity) or exceptions based on a physical constraint.
Who can use Real Time Values?	CP and Uncommitted Capacity Resources
What parameters are included in the Real Time Value Process?	Turn Down Ratio Minimum Down Time Minimum Run Time Maximum Run Time Start Up Time (Hot/Warm/Cold) Notification Time
How can Real Time Values be submitted?	Day Ahead = Temporary Exception Process in Markets Gateway Real Time = Operational Restriction field in Markets Gateway or Use hourly updates tab (Notification Time, Eco Min/Eco Max) AND Communicate to dispatch *See the following examples for details on the process steps (based on select scenarios)

Real Time Values Overview

Who Can Request Make Whole payments using Real Time Values?	A Generation Capacity Resource that operates outside of its unit-specific parameters due to an actual constraint. *The constraint must be communicated to PJM BEFORE the unit is committed either in the Day Ahead Energy Market or in Real Time.
What is an Example of an Actual Constraint?	Please note the following is an example: Operational Flow Order (OFO) issued for ratable take for gas.
When Must Supporting Documentation Be Submitted By?	Within thirty calendar days following the issuance of billing statement for the Operating Day.
References to Process **M11 Section 2.3.4.4**	A Generation Capacity Resource that operates outside of its unit-specific parameters will not receive Operating Reserve Credits nor be made whole for such operation when not dispatched by the Office of the Interconnection, unless the Market Seller of the Generation Capacity Resource can justify to the Office of the Interconnection that operation outside of such unit-specific parameters was the result of an actual constraint.

	Day Ahead		Real-Time	
	Request Exception	**Reflect RTV**	**Request Exception**	**Reflect RTV**
Minimum Run Time Notification Time	Parameter Limits screen (Type - Real Time Value)	Schedule Detail screen (Generator > Schedule)*	Parameter Limits screen (Type - Real Time Value)	Detail Update screen (Generator >Schedule)
Turn Down Ratio	Parameter Limits screen (Type - Real Time Value)	Eco Min/Max on Schedule Detail screen	Operational Restriction Tab	Eco Min/Max on Unit Hourly Update screen

*hourly differentiated Minimum Run and/or Notification Time not permitted to be entered until 1830 Day Before

	Day Ahead		Real-Time	
	Request Exception	**Reflect RTV**	**Request Exception**	**Reflect RTV**
Minimum Down Time Maximum Run Time Start Up Time (Hot/Warm/Cold)	Parameter Limits screen (Type = Real Time Value)	Schedule Details screen (Generator > Schedule)	Operational Restriction tab	Operational Restriction tab

*These parameters are not hourly differentiated