



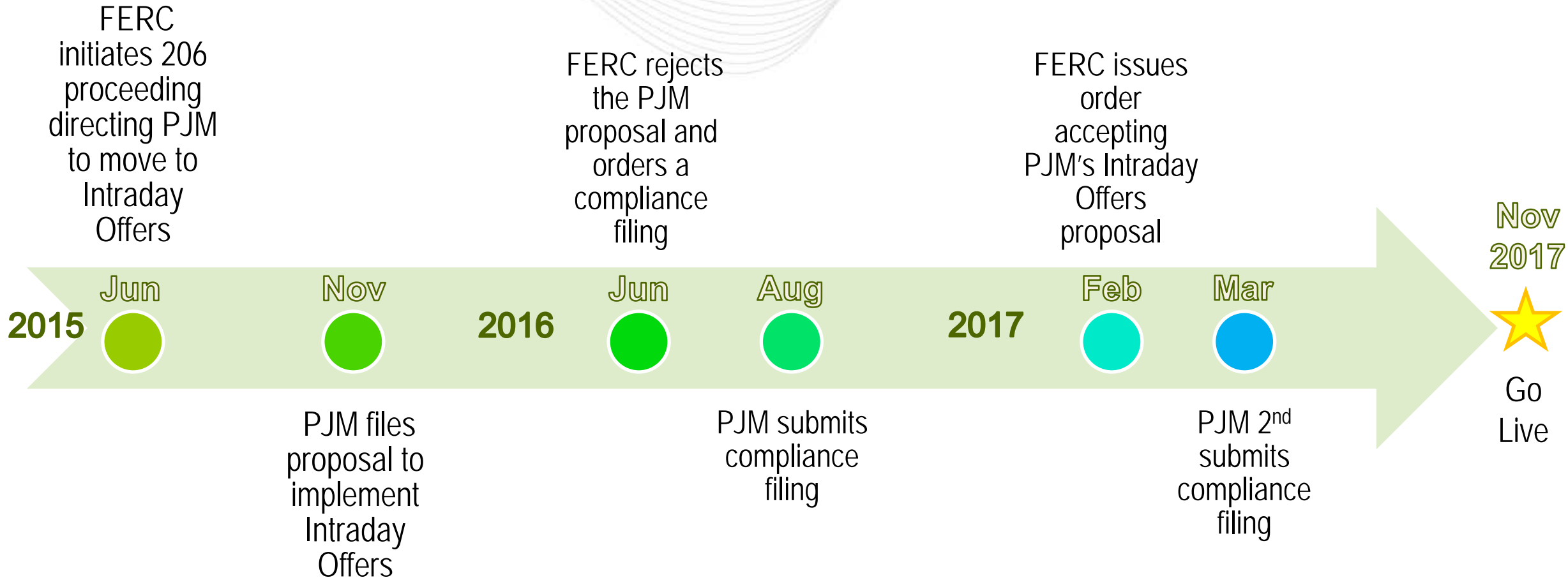
Intraday Offers Manual 11 Revisions

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August 24, 2017





Intraday Offers (Hourly Offers) Filing History



When	Readiness Activity
January 2017	<ul style="list-style-type: none"> • Markets Gateway Impacts training delivered • New intraday offers Markets Gateway training environment created
August 7 September 15	Additional Member Training Sessions <ul style="list-style-type: none"> • Sessions are posted on the Tech Change Forum page • Will cover business rule and Markets Gateway changes
September / October	Market Trials (Coordinated DA clearing exercise)
Ongoing	Monthly Tech Change Forum Updates

Additional Materials are available under the “Intraday Offers” section of the [Markets Gateway Tools Page](#)

Manual Revisions for November 1

- Conforming changes are needed to document and implement the business rules already accepted by FERC
- Seeking approval at September MIC & MRC meetings for these changes

PJM and the IMM are in discussion about additional changes to:

- Ability to opt in to intraday offers & linkage of price-based offers to Fuel Cost Policies
- There is the potential for changes to manual language in this area prior to the September vote.

Additional Tariff Revisions

- PJM and the IMM have agreed additional changes are needed to address offer capping of resources that update their offer after being committed
 - Approval for these changes will be sought separately from the conforming manual revisions (1st read at September MIC & MRC, Vote at October MIC & MRC)
 - Pending FERC approval, these changes would be implemented around January 1

Conforming Manual Revisions

- **Section 2.1: Overview of PJM Energy Markets**
 - Defines periods following the close of the Day-Ahead Market when offers can be updated for use in real-time
 - Generation Rebidding Period (DA market close through 14:15)
 - 18:30 day-ahead through 65 min prior to operating hour

- **Section 2.3: Energy Market Business Rules**
 - Rules outlining the interaction between daily and hourly updates in the Markets Gateway system and which data is automatically carried forward to subsequent operating days
 - Rules for switching from price schedule to cost schedule (replacement for existing GUCC functionality)
- **Section 2.3.7: Mechanical / Technical Rules**
 - Consolidated existing language for clarity and specified whether each offer parameter must have the same value for all 24 hours of the day or can have hourly differentiated values

- **New Section 2.3.6.1: Market Power Mitigation**
 - Includes previously existing language on market power mitigation applied to offline resources with modifications:
 - Clarifies offer capping treatment for CTs committed in the Day-Ahead Market but not expected to run in real-time unless notified by dispatch
 - Specifies duration of offer capping for units offer capped in real-time
 - Introduces new language implementing the application of market power mitigation for online resources and self-scheduled resources
 - Online resources are eligible for offer capping after DA commitment or once min run time is exhausted
 - » *PJM and the IMM are discussing the additional offer capping of resources within the DA commitment or min run time only when the resource's offer is updated after commitment*
 - Self-scheduled resources are now subject to offer capping per FERC order

- **Sections 3, 4 & 6: Updates for Regulation and Synchronized Reserve Markets**
 - Updated timelines for submitting regulation and synchronized reserve offer data
 - Daily offers due by close of Rebid Period day-ahead (no change)
 - Hourly updates allowed through 65 min prior to start of operating hour
 - Specified hourly offer granularity
- **Section 10.3: Economic Energy Market Participation (Demand Resources)**
 - Defines hourly or daily granularity for demand resource offer parameters

Section 9: Hourly Scheduling

- **New section 9.1: Hourly Schedule Adjustments**
 - Defines the parameters that may be updated following the close of the Day-Ahead Market
 - Defines exceptions that apply to each parameter, for example:
 - Rules governing increases and decreases to incremental offer prices, startup and no load costs
 - Parameter updates which are restricted to uncommitted hours only
 - Parameters that may continue to be updated beyond 65 minutes prior to the operating hour

New section 9.1.1: Intraday Offers Optionality

- Defines business rules for opting in or out of intraday offers
 - Opting out limits the updates that are allowed following the close of the Generation Rebidding Period
 - Hourly differentiated offers may still be submitted into the day-ahead market and during the Generation Rebidding Period
 - Opt out is the default for all units, but the option to opt in is available
 - For units electing to opt in:
 - Opt In election must be specified in the Fuel Cost Policy
 - Methodology for developing costs intraday must be specified in the Fuel Cost Policy
 - *This is a change from the August MIC based on additional discussion with the IMM*

The remaining difference of opinion is in the linkage of price-based offers to the Fuel Cost Policy

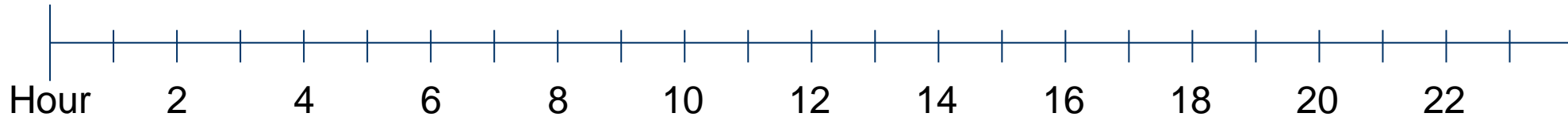
	PJM Position	IMM Position
Cost-based Offer Update Frequency	If opt in: Must specify in the Fuel Cost Policy when (e.g. times or triggering events) cost offer may be updated in real-time and methodology used to derive real-time cost offer	
Cost-based Offer Level	Must be reviewed at the times specified in the Fuel Cost Policy and changed if cost has changed in order to remain compliant with the approved policy	
Price-based Offer Update Frequency	Does not need to be specified in the Fuel Cost Policy	Updates are limited to the times at which the cost-based offer may be updated, as specified in the approved fuel cost policy
Price-based Offer Level	Not linked to the Fuel Cost Policy	

- PJM believes the tariff does not support restricting the submission of intraday price-based offer updates
- Price-based offer updates require a review of the cost-based offer to ensure it continues to be compliant with the approved fuel cost policy.

Intraday Update Frequency Illustration

Cost-based Offer Updates →

Allowable Cost-based Offer Updates as specified in approved Fuel Cost Policy



Price-based Offer Updates →

- Price-based Offer update frequency is not restricted
- Update can be made at hour 12
- When price-based offer is updated, cost-based offer must be reviewed to ensure it is still compliant with approved FCP.
- Because approved FCP specifies cost-based offers will only be updated intraday at hours 10, 14 and 18, the cost-based offer at hour 12 is still accurate (assuming it was in compliance as of hour 10)

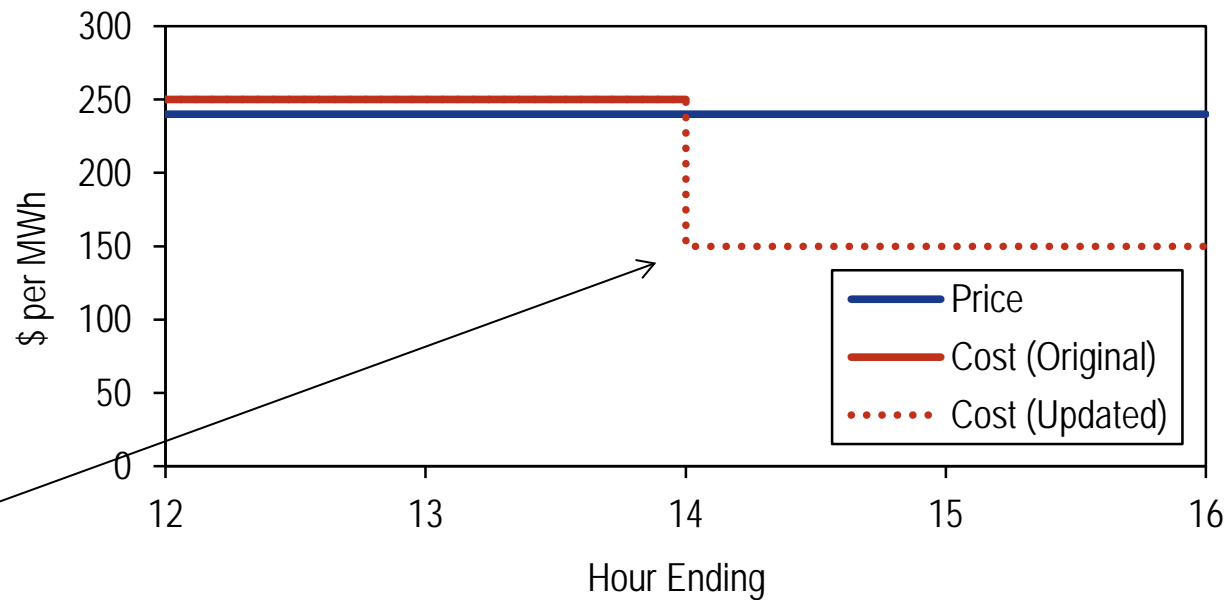
Open PJM Question on FCP approval standards:

What is the appropriate frequency of intraday cost discovery for a resource that Opts In to intraday offers?

Non-conforming Manual Revisions & Proposed Tariff Revisions

- Units committed in real-time and owned by Market Sellers that failed the TPS test are offer capped and placed on the cheaper of the price-based or cost-based schedule
 - Cheapest schedule is determined at the time of commitment
- With intraday offers, the schedule with the lowest cost can change when an offer is updated after the unit is committed.
 - Current rules prohibit re-applying the offer cap during a unit's DA commitment or minimum run time
 - *PJM and the IMM propose re-evaluating which schedule is cheapest and re-applying the offer cap when the offer is updated*

The unit will be committed on its price-based offer for HE 13 and 14 because it is lower than the cost-based offer and it will be dispatched on its cost-based offer for HE 15 and 16 because it is lower than the price-based offer. Market power mitigation will keep up with intraday updates.



By 1255, cost-based offer is updated for HE15 and 16.

- FERC's June 2016 order required PJM to apply market power mitigation to self-scheduled resources
- PJM filed these changes in August 2016, but did not exempt these units from the rule that prohibits rerunning the TPS test during a unit's DA commitment or minimum run time
- *PJM and the IMM propose a change to run the TPS test for every hour following the 1st hour of operation for units self-scheduled in the real-time energy market*
 - Due to ability to self-schedule with 20 minutes notice, such resources may not have the TPS test initially applied at the time of commitment

Update on Order 831 (Energy Offer Validation) M11 Changes



Manual 11 Draft Language: Energy Offer Verification

Category	PJM	Market Monitor	Status
Demand Response	Self-Certification of costs by Curtailment Service Provider (CSP). Draft language based off of PJM Order 831 Compliance Filing	Self-Certification by CSP is not sufficient validation	Compromise unlikely
Generation Exception Process (Verification against Fuel Cost Policy)	If resource's offer does not pass offer screen, the Market Seller can submit an exception request. Market Seller will have to demonstrate that the resource's offer is compliant with its defined Fuel Cost Policy and provide documentation detailing the underlying costs	Manual language lacks clarity of process, cost documentation standards and Market Monitor involvement in exception process (transfer of information & consideration of input)	Movement towards possible compromise
Attachment D (Operating Reserve Credits for verified cost offers > \$1,000/MWh)	Status Quo: PJM and the IMM have received the Market Seller's submitted documentation that supports make-whole compensation and PJM has approved the credits	Needs to state that PJM only provides compensation for costs verified by PJM and the IMM	PJM approves Operating Reserve Credits
	Status Quo: Eligibility requirement that cost offers must adhere to Manual 15 Cost Development Guidelines	Clarify that no-load and start-up costs have to be verified	Movement towards possible compromise