

EIM-S Informational Meeting

11.03.2022



Agenda

GRID Modernization 

- Opening Remarks
- EIM-S Schedule
- Persistent Deviation
- Tag values: Base, FMM and ATF
- Understanding of Uplift and neutrality accounts/charges; Real Time Congestion
- Closing remarks

Opening Remarks

EIM-S Schedule

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GRID Modernization 

- BPA and PCI plan to publish EIM Detailed Data Files (DDFs) and EIM Services Bills for September in late November
- Additional time is needed between issuing August and September invoices to promote a PCI software upgrade
- More schedule information planned for next customer informational meeting

Persistent Deviation

Persistent Deviation Penalty

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- Persistent Deviation Penalty is in place to prevent leaning on the BA for capacity and energy, which materializes in the deployment of Balancing Reserves in the EIM and results in UIE.
- From the Energy Imbalance Service BP A.10.a and Generation Imbalance Service BP D.1
 - The ACS Rate Schedule definition recognizes that “A pattern of under or over delivery or over or under use of energy occurs generally or at a specific time of day” can constitute a Persistent Deviation.
 - An example of such a pattern would be a significant bias during peak or heavy load hours or during light load hours, or a non-random pattern of schedule error.

Persistent Deviation Penalty – Tiers Review

The logo for GRID Modernization, featuring the text "GRID Modernization" in a bold, sans-serif font. The word "GRID" is in a larger, bolder font than "Modernization". The logo is contained within a white arrow shape that points to the right, set against a blue background.

- Tiers are the same for Load and DERBS Plants
- Tiers
 - Tier (1) is 15% or 20 MW in the same direction for 4** hours consecutive
 - Tier (2) is 7.5% or 10 MW in the same direction for 6 hours consecutive
 - Tier (3) is 1.5% or 5 MW in the same direction for 12 hours consecutive
 - Tier (4) is 1.5% or 2 MW in the same direction for 24 hours consecutive

** Increased from 3 hours to accommodate the T-57 tagging deadline.

Persistent Deviation Penalty – DERBS plants



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- GRSP L.1.a – “When BPA is in the EIM, positive or negative deviations will be based on the measurement value used for determining **UIE**.”
- UIE is the generation error covered by the BA through deployment of Regulating Reserves
 - UIE is Actual Output versus RTD DOT
 - RTD DOT is generally equal to the Base Schedule (T-57 eTag) for DERBS plants
- For DERBS, FMM IIE and RTD IIE can occur if:
 - Tagging Changes after T-57 will result in a Manual Dispatch
 - Generation is far enough off of Base Schedule that Ramp Rate shows that the plant is unable to reach Base Schedule in next interval (rare occurrence)
 - For Participating DERBS only, Market Awards

Persistent Deviation Penalty - Load

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- GRSP L.2.a – “For EI Service pursuant to ACS IV.B.1, positive or negative deviations will be based on the measurement value used for determining **UIE** pursuant to that section.”
- UIE is the load error covered by the BA through deployment of Balancing Reserves
 - UIE for Load is Base Schedule (T-57 eTag) versus Metered Load
- No FMM IIE or RTD IIE for Load per EIM design

Persistent Deviation Penalty Calculation

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$$\text{Deviation} = \sum \text{UIE}_{\text{hour}}$$

- IF Deviation > Tier % * ATF Tag
 - Flag as PD Hour for that Tier [Directional]
- IF Deviation > Tier MW
 - Flag as PD Hour for that Tier [Directional]
- IF Consecutive hours >= Tier Hours
 - Negative Deviations (over-scheduled load or under-scheduled gen) results in loss of payment
 - Positive Deviations (under-scheduled load or over-scheduled gen) results in penalty price applied to UIE pricing (greater of 125% of LMP or \$100/MWh)
- Deviation and Tier % calculations both use ATF Tag only periods outside of the EIM and was used prior to BP-22.
 - Gen Deviation = ATF Tag – Metered Actuals
 - Load Deviation = Metered Actuals – ATF Tag

Tag Values: Base, FMM and ATF

Tag values

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- Tags can be adjusted after T-57, but there are financial implications
- Base
 - This is the snapshot at T-57 (57 minutes before the Trade hour)
 - T-57 for Hour Ending 21:00 (20:00) is 19:03:00
 - Example: If an adjustment to a tag is created at 19:02:04 but the tag is withdrawn/denied after 19:03:00 (e.g., 19:03:56), then the adjusted value is used for Base

Tag values



- **FMM**

- In this table, :xx denotes the first hour and :yy denotes the second hour (trade hour)
- In the example: xx = 19:00 and yy = 20:00
 - Using the table to the right, tags between T-57 (19:03:00) and 19:22:30 will be used in the first fifteen minute interval of 20:00 (HE 21)

Binding FMM	Translated FMM Offset	Translated Wall Clock Time
Minute 0-15	Executed 37.5 minutes to the start of FMM Interval	xx:22:30 snapshot for yy:00:00-yy:15:00 binding solution
Minute 15-30	Executed 37.5 minutes to the start of FMM Interval	xx:37:30 snapshot for yy:15:00-yy:30:00 binding solution
Minute 30-45	Executed 41.5 minutes to the start of FMM Interval	xx:48:30 snapshot for yy:30:00-yy:45:00 binding solution*
Minute 45-60	Executed 37.5 minutes to the start of FMM Interval	yy:07:30 snapshot for yy:45:00-yy:60:00 binding solution

- **ATF = After the Fact**

- This is the final value of the tag
- Includes any adjustments made after T-57
- If tag is curtailed and try to adjust above curtailed amount, EIM Settlements system uses the curtailed value

Understanding Neutrality / Uplift Charge Codes

High-level review of Real Time Congestion Offset

Real Time Congestion Offset



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- Real-Time Congestion Offsets (credits or debits) to any EIM Entity Scheduling Coordinator (EESC) can accrue when any transmission constraint binds in EIM
- Transmission Corridor (TCOR) limit(s) is changes in EIM when there is a new operating limit established in real-time:
 - This helps manage flows to the new operating limit and also ensures that the EIM does not exacerbate flows in the direction of the new operating limit.
 - The use of non-EIM tools are also considered for future scheduling horizons, such as scheduling limits, issuing schedule curtailments and/or re-dispatch.

Real Time Congestion Offset



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- Establishing a lower (or higher) Transmission Corridor (TCOR) limit is done to help manage real-time transmission flows in EIM, as the next EIM market solution attempts to find a dispatch solution within the new TCOR limit
- On June 22 and June 23, BPAT did enter multiple new, lower Transmission Corridor (TCOR) limits on Raver Paul in response to a new reliability limit
- If not for these two days, the Real-Time Congestion Offsets assessed on BPA's EESC invoice for June would have been more consistent with May and July.
- Real-Time Congestion Offset charge code is sub-allocated to BPA's Transmission Customers through Measured Demand.

Questions?

or

Proposals for future agenda items?

BPA Contacts for EIM

GRID Modernization 

Topic / Question Area	Email and Phone	Email (cc)
EIM Services Bill (EESC)	EESCSettlements@bpa.gov or 503-230-EIM1	gridmod@bpa.gov and Power or Transmission Account Executive
Customer Billing		
Metering	mdm@bpa.gov	
Customer Portal	customerportal@bpa.gov	
BPA Outage Office	Planned outages: bpaoutage@bpa.gov Unplanned: Contact BPA's Generation Dispatcher	
After-hours Outage	Contact BPA's Generation Dispatcher	

Closing Remarks