MSRS Report Updates for Fast Start

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Tentative Fast Start Implementation Plan

- The December 17, 2020 Fast Start order included a compliance obligation to address a few items including PJM's preferred implementation date

- PJM complied with the Fast Start Compliance filing on February 16, 2021:
  - Requested a response by April 16, 2021
  - If a full order is received by April 16th, PJM will implement on May 1, 2021
  - PJM will communicate updated plan if FERC does not respond by April 16th

Fast Start MSRS Report Updates

- Create 2 new reports
  - Dispatch Differential Lost Opportunity Cost Credits – provides calculation details for resources receiving new credit
  - Day-Ahead Double Counting Operating Reserve Credit Offset – provides calculation details for operating reserve commitment cost offset value
- Update 4 existing reports
  - Regional Balancing Operating Reserve Charge Summary – add additional column to detail total dispatch differential LOC credit that is allocated as charges
  - Generator Credit Summary – add additional column for unit level Dispatch Differential LOC credit
  - Generator Portfolio Credit Summary – add additional column for organization level Dispatch Differential LOC credit
  - Day-Ahead Operating Reserve Generator Credit Details – add additional possible Data Type value to contain resource's commitment cost offset value

Dispatch Differential Lost Opportunity Cost Credits

- New report provides calculation details for new credit
- Credit included as component of BLI 2375 Balancing Operating Reserve

The following columns will appear in the body of the report:

Online and CSV Column Name	XML Column Name	Column Number	Data Type
Customer ID	CUSTOMER_ID	4000.01	INTEGER
Customer Code	CUSTOMER_CODE	4000.02	VARCHAR2(6)
EPT Interval Ending	EPT_INTERVAL_ENDING	4001.40	VARCHAR2(40) mm/dd/yyyy HH24:MM format
GMT Interval Ending	GMT_INTERVAL_ENDING	4001.41	VARCHAR2(40) mm/dd/yyyy HH24:MM format
Unit ID	UNIT_ID	4000.63	NUMBER(8,0)
Unit Name	UNIT_NAME	4000.64	VARCHAR2(60)
Unit Ownership Share	UNIT_OWNERSHIP_SHARE	3000.80	NUMBER
Schedule ID	SCHEDULE_ID	4000.65	NUMBER
RT Generator Pricing LMP ($/MWh)	RT_GEN_PRICING_LMP	3001.63	NUMBER
RT Generation MW	RT_GEN_MW	3000.33	NUMBER
RT Pricing MW	RT_PRICING_MW	3001.64	NUMBER
RT Pricing Revenue ($)	RT_PRICING_REVENUE	2375.28	NUMBER
RT Pricing Offer Value ($)	RT_PRICING_OFFER_VALUE	2375.29	NUMBER
RT Dispatch MW	RT_DISPATCH_MW	3001.65	NUMBER
RT Dispatch Revenue ($)	RT_DISPATCH_REVENUE	2375.30	NUMBER
RT Dispatch Offer Value ($)	RT_DISPATCH_OFFER_VALUE	2375.31	NUMBER
RT Generation Offer Value ($)	RT_GEN_OFFER_VALUE	2375.32	NUMBER
Dispatch Differential LOC Credit ($)	DISPATCH_DIFF_LOC_CR	2375.26	NUMBER
Version	VERSION	4000.07	VARCHAR2(12)

Supporting Calculations

- RT Pricing Revenue (2375.28)

  = RT Pricing MW * RT Generator LMP

  = 3001.64 * 3001.63

- RT Dispatch Revenue (2375.30)

  = MAX(RT Dispatch MW, RT Generation MW) * RT Generator LMP

  = MAX(3001.65, 3000.33) * 3001.63

- Dispatch Differential LOC Credit (2376.26)

  = MAX[MAX(RT Pricing Revenue – RT Pricing Offer Value , 0) – (MAX(RT Dispatch Revenue – MIN(RT Dispatch Offer Value, RT Generation Offer Value) , 0) , 0]

  = MAX[MAX(2375.28 – 2375.29 , 0) – (MAX(2375.30 – MIN(2375.31, 2375.32) , 0) , 0]

Day-Ahead Double Counting Operating Reserve Credit Offset

- New report provides details on calculating daily Day-Ahead Operating Reserve Credit offset value due to double counting of commitment costs.

The following columns will appear in the body of the report:

Online and CSV Column Name	XML Column Name	Column Number	Data Type
Customer ID	CUSTOMER_ID	4000.01	INTEGER
Customer Code	CUSTOMER_CODE	4000.02	VARCHAR2(6)
EPT Hour Ending	EPT_HOUR_ENDING	4000.05	VARCHAR2(40) mm/dd/yyyy HH24 format
GMT Hour Ending	GMT_HOUR_ENDING	4000.06	VARCHAR2(40) mm/dd/yyyy HH24 format
EPT Interval Ending	EPT_INTERVAL_ENDING	4001.40	VARCHAR2(40) mm/dd/yyyy HH24:MM format
GMT Interval Ending	GMT_INTERVAL_ENDING	4001.41	VARCHAR2(40) mm/dd/yyyy HH24:MM format
Unit ID	UNIT_ID	4000.63	NUMBER(8,0)
Unit Name	UNIT_NAME	4000.64	VARCHAR2(60)
Unit Ownership Share	UNIT_OWNERSHIP_SHARE	3000.80	NUMBER
DA Schedule ID	DA_SCHED_ID	3002.11	NUMBER
DA Generator LMP ($/MWh)	DA_GENERATOR_LMP	3000.24	NUMBER
DA Scheduled MW	DA_SCHEDULED_MW	3000.32	NUMBER
DA Energy Offer ($)	DA_ENERGY_OFFER	3003.11	NUMBER
DA No Load Cost ($)	DA_NO_LOAD_COST	3003.12	NUMBER
DA Startup Cost ($)	DA_STARTUP_COST	3003.13	NUMBER
DA Value ($)	DA_VALUE	3002.15	NUMBER
DA Net Revenue ($)	DA_NET_REVENUE	3002.16	NUMBER
RT Schedule ID	RT_SCHED_ID	3002.19	NUMBER
RT Generator LMP ($/MWh)	RT_GENERATOR_LMP	3000.25	NUMBER
RT Generation MW	RT_GEN_MW	3000.33	NUMBER
RT Generation MW Offer ($)	RT_GEN_MW_OFFER	3003.20	NUMBER
RT No-Load Cost ($)	RT_NO_LOAD_COST	3002.28	NUMBER
RT Startup Cost ($)	RT_STARTUP_COST	3002.29	NUMBER
RT Additional Startup Cost ($)	RT_ADD_STARTUP_COST	3002.30	NUMBER
Bal Target Value ($)	BAL_TARGET_VALUE	2375.51	NUMBER
Operating Reserve Offsetting Synch Reserve Revenue ($)	OPRES_OFFSET_SYNCH_RES_REV	3002.32	NUMBER
Operating Reserve Offsetting Reactive Service Revenue ($)	OPRES_OFFSET_RCTV_SER_REV	3002.33	NUMBER
Operating Reserve Offsetting DASR Revenue ($)	OPRES_OFFSET_DASR_REV	3002.34	NUMBER
Operating Reserve Offsetting Non-Synch Reserve Revenue ($)	OPRES_OFFSET_NON_SYNCH_RES_REV	3002.35	NUMBER
Bal Target Net Revenue ($)	BAL_TARGET_NET_REVENUE	3003.22	NUMBER
Version	VERSION	4000.07	VARCHAR2(12)

Supporting Calculations

- DA Value (3002.15)
  = DA Generator LMP * DA Scheduled MW
  = 3000.24 * 3000.32
- DA Net Revenue (3002.16)
  = DA Value – (DA Energy Offer + DA No Load Cost + DA Startup Cost)
  = 3002.15 – (3003.11 + 3003.12 + 3003.13)
- DA Target Operating Reserve Credit = Sum(DA Net Revenue/12) over all intervals of the day *-1
- Bal Target Value (2375.51)
  = RT Generator LMP * (RT Generation MW – DA Scheduled MW) * 1/12
  = 300.25 * (3000.33 – 3000.32) * 1/12

Day-Ahead Double Counting Operating Reserve Credit Offset

- Bal Target Net Revenue (3000.22)

  = (DA Value / 12 + Bal Target Value + Operating Reserve Offsetting Synch Reserve Revenue + Operating Reserve Offsetting Reactive Service Revenue + Operating Reserve Offsetting DASR Revenue + Operating Reserve Offsetting Non-Synch Reserve Revenue) – (RT Generation MW Offer + RT No-Load Cost + RT Startup Cost + RT Additional Startup Cost)

  =(3002.15/12 + 2375.51 + 3002.32 + 3002.33 + 3002.34 + 3002.35) – (3003.20 + 3002.28 + 3002.29 + 3002.30)

- Bal Target Operating Reserve Credit = Sum(Bal Target Net Revenue) over all intervals of the day * -1
- Operating Reserve Commitment Cost Offset (Appears on Day-Ahead Operating Reserve Generator Credit Details report)

  = MAX(Da Target Operating Reserve Credit – Bal Target Operating Reserve Credit , 0)

Regional Balancing Operating Reserve Charge Summary

- New column details total Dispatch Differential Lost Opportunity Cost Credit for the day

- Total credit allocated as component to RTO Bal OpRes for Reliability Charge and only to RTO Load plus Exports in all of PJM - not allocated to individual regions

Report row subset

The following columns will appear in the body of the report:

Online and CSV Column Name	XML Column Name	Column Number	Data Type
Customer ID	CUSTOMER_ID	4000.01	INTEGER
Customer Code	CUSTOMER_CODE	4000.02	VARCHAR2(6)
Date	DATE	4000.04	DATE (MM/DD/YYYY in online and CSV formats, YYYY-MM-DD in XML format)
Total RTO Bal OpRes for Reliability Credit ($)	TOT_RTO_BOR_RELIABILITY_CREDIT	1375.38	NUMBER(22,2)
Total RTO Dispatch Differential LOC Credit ($)	TOT_RTO_DDLOC_CREDIT	1375.70	NUMBER(22,2)
PJM RT Load plus Exports (MWh)	PJM_RT_LOAD_PLUS_EXPORTS	1375.39	NUMBER(22,3)
Total PJM RT Load plus Exports (MWh)	TOT_PJM_RT_LOAD_PLUS_EXPORTS	1375.40	NUMBER(22,3)
RTO Bal OpRes for Reliability Charge ($)	RTO_BOR_RELIABILITY_CHARGE	1375.41	NUMBER(22,2)

- Updated Supporting Calculations:

Supporting Calculations

RTO Bal OpRes for Reliability Charge = (Total RTO Bal OpRes for Reliability Credit + Total RTO Dispatch Differential LOC Credit) * (PJM RT Load plus Exports / Total PJM RT Load plus Exports)

1375.41 = (1375.38 + 1375.70) * (1375.39 / 1375.40)

Generator Credit Summary and Portfolio Credit Summary

- New column added to each report to capture total daily Dispatch Differential LOC Credit at respective generator unit level or organization level

Generator Credit Summary

Online and CSV Column Name	XML Column Name	Column Number	Data Type
Dispatch Differential LOC Credit ($)	DISPATCH_DIFF_LOC_CR	2375.26	NUMBER(22,2)

Generator Portfolio Credit Summary

Online and CSV Column Name	XML Column Name	Column Number	Data Type
Dispatch Differential LOC Credit ($)	DISPATCH_DIFF_LOC_CR	2375.06	NUMBER(22,2)

Day-ahead Operating Reserve Generator Credit Details

- New data label Operating Reserve Commitment Cost Offset ($) added to list of possible Data label types.

Possible Data Label types: DA Generator LMP ($/MWh), DA Scheduled MWh, DA Schedule ID, DA Energy Offer ($), DA No-Load Cost ($), DA Startup Cost ($), DA Value ($), Scheduled Min (MWh), Scheduled Max (MWh), Operating Reserve Commitment Cost Offset ($)

- Operating Reserve Commitment Cost Offset is a total daily value calculated from details provided in new Day-Ahead Double Counting Operating Reserve Credit Offset report.
- Value will appear in the max hour of overlap between day-ahead hours and real-time intervals where the unit was eligible for operating reserve credit.
- Value included in calculation of daily Day-ahead Operating Reserve Credit

Day-ahead Operating Reserve Credit = MAX ((The Sum of DA Net Revenue for the day) * -1, 0) – Operating Reserve Commitment Cost Offset

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MSRS Report Updates for Fast Start

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