

MSRS Report Updates for Fast Start

Sean Flamm

Market Settlements Development

Market Settlements Subcommittee

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- **Dispatch Differential Lost Opportunity Cost Credit**
 - 1 new MSRS report to provide details for resources receiving credit
 - Additional columns added to Regional Balancing Operating Reserve Charge Summary report to detail total amount allocated as charges
- **Day-ahead Scheduling Reserve Lost Opportunity Cost Credit**
 - Additional columns added to Day-ahead Scheduling Reserve Credits and Day-ahead Scheduling Reserve Summary reports
- **Day-ahead Transaction Make Whole Credit**
 - 1 new MSRS report to detail transactions receiving credit
 - Additional column added to Operating Reserve Charge Summary report to detail total amount allocated as charges
- **Real-time Make Whole Credit**
 - 1 new MSRS report to provide details to resources receiving credit
 - Additional columns added to Regional Balancing Operating Reserve Charge Summary report to detail total amount allocated as charges
 - Additional column added to Balancing Operating Reserve Generator Credit Details report for offset value

- Double Counting of Commitment Costs
 - Additional Data Type value added Day-ahead Operating Reserve Generator Credit Details report for offset value
- Summary information
 - New columns added to Generator Credit Summary and Generator Portfolio Credit Summary reports to detail Dispatch Differential Lost Opportunity Cost Credit, Day-ahead Scheduling Reserve Lost Opportunity Cost Credit, and Real-time Make Whole Credit



Dispatch Differential Lost Opportunity Cost Credits

- New report provides calculation details for new credit

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 (Displays first interval of the day as hour 0 minute 05 and last interval of the day as hour 24 minute 00)
GMT Interval Ending	GMT_INTERVAL_ENDING	4001.41	VARCHAR2(40) mm/dd/yyyy HH24:MM format Displays first interval of the day in relation to EPT interval as hour 04 minute 05 or hour 05 minute 05 (EDT/EST depending) and last interval of the day as hour 04 minute 00 of the next day or hour 05 minute 00 of the next day (EDT/EST depending)
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 Dispatch LMP (\$/MWh)	RT_GEN_DISPATCH_LMP	3001.62	NUMBER
RT Generator Pricing LMP (\$/MWh)	RT_GEN_PRICING_LMP	3001.63	NUMBER
RT Generation (MW)	RT_GENERATION	3000.33	NUMBER
RT LMP Desired MW	RT_LMP_DESIRED_MW	3000.34	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	3001.64	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 = RT LMP Desired MW * RT Generator Pricing LMP

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

Dispatch Differential LOC Credit = MAX((RT Pricing Revenue – RT Pricing Offer Value) – (RT Dispatch Revenue – MIN(RT Dispatch Offer Value, RT Generation Offer Value)), 0)



Generator Real-time Make Whole Credits

- New report provides supporting details for Real-time Make Whole Credit calculation

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 (Displays first interval of the day as hour 0 minute 05 and last interval of the day as hour 24 minute 00)
GMT Interval Ending	GMT_INTERVAL_ENDING	4001.41	VARCHAR2(40) mm/dd/yyyy.HH24:MM format Displays first interval of the day in relation to EPT interval as hour 04 minute 05 or hour 05 minute 05 (EDT/EST depending) and last interval of the day as hour 04 minute 00 of the next day or hour 05 minute 00 of the next day (EDT/EST depending)
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
DA Scheduled MW	DA_SCHEDULED_MW	3000.32	NUMBER
RT Generator Dispatch LMP (\$/MWh)	RT_GEN_DISPATCH_LMP	3001.62	NUMBER
RT Generator Pricing LMP (\$/MWh)	RT_GEN_PRICING_LMP	3001.63	NUMBER
RT Generation (MW)	RT_GENERATION	3000.33	NUMBER
RT LMP Desired MW	RT_LMP_DESIRED_MW	3000.34	NUMBER
RT Dispatch MW	RT_DISPATCH_MW	3001.64	NUMBER
RT Offer Value (\$)	RT_OFFER_VALUE	2375.33	NUMBER
RT Revenue (\$)	RT_REVENUE	2375.34	NUMBER
RT Make Whole Credit (\$)	RT_MAKE_WHOLE_CREDIT	2375.27	NUMBER
Version	VERSION	4000.07	VARCHAR2(12)

Supporting Calculations

$$\text{RT Revenue} = \text{MAX}(\text{MAX}(\text{DA Scheduled MW}, \text{RT LMP Desired MW}) - \text{MIN}(\text{RT Dispatch MW}, \text{RT Generation}), 0) * \text{RT Generator Pricing LMP}$$

$$\text{RT Make Whole Credit} = \text{RT Offer Value} - \text{RT Revenue}$$



Day-ahead Transaction Make Whole Credits

- New report provides supporting details for Day-ahead Transaction Make Whole Credit

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 (Displays first hour of the day as hour 1 and last hour of the day as hour 24)
GMT Hour Ending	GMT_HOUR_ENDING	4000.06	VARCHAR2(40) mm/dd/yyyy HH24 format (Displays first hour of the day as hour 1 and last hour of the day as hour 00 of the following day)
Transaction Type	TRANSACTION_TYPE	4000.11	VARCHAR2(40) See possible values below
Transaction ID	TRANSACTION_ID	4000.09	VARCHAR2(40)
OASIS ID	OASIS_ID	4000.14	VARCHAR2(40)
DA Transaction MWh	DA_TRANSACTION_MWH	3000.72	NUMBER
DA Pricing LMP (\$/MWh)	DA_PRICING_LMP	3001.68	NUMBER
Offer at DA MWh (\$/MWh)	OFFER_AT_DA_MWH	3000.92	NUMBER
DA Offer Value (\$)	DA_OFFER_VALUE	2370.15	NUMBER
DA Transaction Revenue (\$)	DA_TRANS_REVENUE	2370.16	NUMBER
DA Transaction Make Whole Credit (\$)	DA_TRANS_MAKEWHOLE_CR	2370.03	NUMBER
Version	VERSION	4000.07	VARCHAR2(12)

Supporting Calculations

DA Offer Value = DA Transaction MWh * Offer at DA MWh

DA Transaction Revenue = DA Transaction MWh * DA Pricing LMP

DA Transaction Make Whole Credit = MAX(DA Offer Value – Da Transaction Revenue, 0)



Operating Reserve Charge Summary

- New column Total PJM Da Transaction Make Whole Credit added to show amount of additional credit to be allocated.

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 PJM DA Operating Reserve Credit (\$)	TOTAL_PJM_DA_OPRES_CREDIT	1370.11	NUMBER(22,2)
Total PJM DA Transaction Make Whole Credit (\$)	TOTAL_PJM_DA_TRANS_MAKE_WHOLE_CR	1370.21	NUMBER(22,2)
DA Load (MWh)	DA_LOAD	3000.37	NUMBER(22,3)
DA Operating Reserve Exports (MWh)	DA_OPRES_EXPORTS	1370.12	NUMBER(22,6)
DA Up-To Congestion Bids (MWh)	DA_UTC_BIDS	1370.31	NUMBER(22,6)
Total PJM DA Load Plus Exports (MWh)	TOTAL_PJM_DA_LOAD_PLUS_EXPORTS	1370.13	NUMBER(22,6)
DA Operating Reserve Charge (\$)	DA_OPRES_CHARGE	1370.01	NUMBER(22,2)
Bal Operating Reserve for Reliability Charge (\$)	BAL_OPRES_FOR_REL_CHARGE	1375.36	NUMBER(22,2)
Bal Operating Reserve for Deviations Charge (\$)	BAL_OPRES_FOR_DEV_CHARGE	1375.37	NUMBER(22,2)
Bal Operating Reserve Charge (\$)	BAL_OPRES_CHARGE	1375.01	NUMBER(22,2)
Bal Operating Reserve Local Constraint Charge (\$)	BAL_OPRES_LOCAL_CONSTRAINT_CHARGE	1375.02	NUMBER(22,2)
Version	VERSION	4000.07	VARCHAR2(12)

Supporting Calculations

DA Operating Reserve Charge = (Total PJM DA Operating Reserve Credit + Total PJM DA Transaction Make Whole Credit) * (DA Load + DA Operating Reserve Exports + DA Up-To Congestion Bids) / Total PJM DA Load Plus Exports



Regional Balancing Operating Reserve Charge Summary

- Added columns:

Online and CSV Column Name	XML Column Name	Column Number	Data Type
Total RTO Dispatch Differential LOC Credit (\$)	TOT_RTO_DDLOC_CREDIT	1375.70	NUMBER(22,2)
Total RTO Real-time Make Whole Credit (\$)	TOT_RTO_RT_MAKE_WHOLE_CREDIT	1375.71	NUMBER(22,2)
Total East Dispatch Differential LOC Credit (\$)	TOT_EAST_DDLOC_CREDIT	1375.72	NUMBER(22,2)
Total East Real-time Make Whole Credit (\$)	TOT_EAST_RT_MAKE_WHOLE_CREDIT	1375.73	NUMBER(22,2)
Total West Dispatch Differential LOC Credit (\$)	TOT_WEST_DDLOC_CREDIT	1375.74	NUMBER(22,2)
Total West Real-time Make Whole Credit (\$)	TOT_WEST_RT_MAKE_WHOLE_CREDIT	1375.75	NUMBER(22,2)

- Supporting Calculations:

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

East Bal OpRes for Reliability Charge = (Total East Bal OpRes for Reliability Credit + **Total East Dispatch Differential LOC Credit + Total East Real-time Make Whole Credit**) * (East RT Load plus Exports / Total East RT Load plus Exports)

West Bal OpRes for Reliability Charge = (Total West Bal OpRes for Reliability Credit + **Total West Dispatch Differential LOC Credit + Total West Real-time Make Whole Credit**) * (West RT Load plus Exports / Total West RT Load plus Exports)



Day-Ahead Scheduling Reserve Credits

- New column DASR Lost Opportunity Cost Credit

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 (Displays first hour of the day as hour 1 and last hour of the day as hour 24)
GMT Hour Ending	GMT_HOUR_ENDING	4000.06	VARCHAR2(40) mm/dd/yyyy HH24 format (Displays first hour of the day as hour 1 and last hour of the day as hour 00 of the following day)
Unit ID	UNIT_ID	4000.63	NUMBER(8,0)
Unit Name	UNIT_NAME	4000.64	VARCHAR2(60)
Unit Ownership Share	UNIT_OWNERSHIP_SHARE	3000.84	NUMBER
DASRMCP (\$/MWh)	DASRMCP	2365.12	NUMBER(10,2)
Cleared DASR MWh	CLEARED_DASR_MWH	2365.13	NUMBER(22,3)
DASR Credit (\$)	DASR_CREDIT	2365.14	NUMBER(22,2)
DASR Offer (\$)	DASR_OFFER	2365.15	NUMBER(22,2)
DASR Opportunity Cost (\$)	DASR_OPP_COST	2365.16	NUMBER(22,2)
DASR Operating Reserve Offset (\$)	DASR_OPRES_OFFSET	2365.17	NUMBER(22,2)
DASR Lost Opportunity Cost Credit (\$)	DASR_LOC_CREDIT	2366.11	NUMBER(22,2)
Version	VERSION	4000.07	VARCHAR2(12)

Supporting Calculations

$$\text{DASR Lost Opportunity Cost Credit} = \text{MAX}[(\text{DASR Offer} + \text{DASR Opportunity Cost}) - \text{DASR Credit}, 0]$$

- New columns store Total PJM DASR LOC Credits for allocation as charges and Organization’s total DASR Lost Opportunity Cost Credit for all units for hour

Online and CSV Column Name	XML Column Name	Column Number	Data Type
Total PJM DASR LOC Credits (\$)	TOTAL_PJM_DASR_LOC_CREDITS	1365.27	Number(22,2)
DASR Lost Opportunity Cost Credit (\$)	DASR_LOC_CREDIT	2366.01	Number(22,2)

- Supporting Calculations:

Base DASR Charge = (Total PJM DASR Credits + **Total PJM DASR LOC Credits**) * [Adjusted Base DASR Obligation / (Total PJM Base DASR Adjusted Obligation + Total PJM Additional DASR Obligation)]

Additional DASR Charge = (Total PJM DASR Credits + **Total PJM DASR LOC Credits**) * [Additional DASR Obligation / (Total PJM Base DASR Adjusted Obligation + Total PJM Additional DASR Obligation)]

DASR Lost Opportunity Cost Credit = sum(DASR Lost Opportunity Cost Credit for all units from Day-ahead Scheduling Reserve Credits report)

- Add new value – Operating Reserve Commitment Cost Offset (\$) to possible Data Labels to capture amount of offset to Day-ahead Operating Reserve Credit due to double counting of commitment costs

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 (\$)

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



Balancing Operating Reserve Generator Credit Details

- New column captures offsetting credit value from new Real-time Make Whole Credit

Online and CSV Column Name	XML Column Name	Column Number	Data Type
Operating Reserve Offsetting Real-Time Make Whole Credit (\$)	OPRES_OFFSET_RT_MAKEWHOLE_CR	3002.39	NUMBER

- Supporting calculations:

Bal Net Revenue = (Bal Value + Operating Reserve Offsetting Synch Reserve Revenue + Operating Reserve Offsetting Reactive Services Revenue + Operating Reserve Offsetting DASR Revenue + Operating Reserve Offsetting Non-Synch Reserve Revenue + **Operating Reserve Offsetting Real-time Make Whole Credit**) – (RT Energy Offer + RT No-Load Cost + RT Startup Cost + RT Additional Startup Cost)



Generator Credit Summary and Portfolio Credit Summary

- New columns added to each report to capture total daily credit value at respective generator 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)
RT Make Whole Credit (\$)	RT_MAKE_WHOLE_CREDIT	2375.27	NUMBER(22,2)
DASR Lost Opportunity Cost Credit (\$)	DASR_LOC_CREDIT	2366.11	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)
RT Make Whole Credit (\$)	RT_MAKE_WHOLE_CREDIT	2375.07	NUMBER(22,2)
DASR Lost Opportunity Cost Credit (\$)	DASR_LOC_CREDIT	2366.01	NUMBER(22,2)

Facilitator:
Ray Fernandez,
Raymond.Fernandez@pjm.com

Secretary:
Sean Flamm,
sean.flamm@pjm.com

MSRS Report Updates for Fast Start



Member Hotline

(610) 666 – 8980

(866) 400 – 8980

custsvc@pjm.com