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**MSRS Report Format Documentation**

**Operating Reserve Generator Deviations – 5 Minute**

**Version 11**

Revision History

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| --- | --- | --- |
| **date** | **Revision** | **Description** |
| 4/1/2018 | 9 | Initial Distribution for 5 minute settlements. Previous versions can be found in Operating Reserve Generator Deviations (Pre 5 minute settlements) document |
| 10/17/2022 | 10 | Updates for Reserve Price Formation. Renamed column Synch Reserve Tier 1 Response Indicator to Synch Reserve Event Response Indicator. Renamed column Synch Reserve PJM-Assigned Tier 2 Indicator to Synch Reserve or NSR Reduction Indicator. Added column Sec Reserve Reduction Indicator. Updated Summary of Changes and Special Logic. |
| 2/1/2024 | 11 | Updated UDS Basepoint MW column to Dispatch Signal MW (3002.40)  Updated UDS LMP Desired MW column to Dispatch LMP Desired MW (3002.42) |

# Report

MSRS Report Name: Operating Reserve Generator Deviations – 5 Minute

Report short name for User Interface: Operating Reserve Generator Deviations – 5 Minute

Download File Name Abbreviation: ORGenDev

Data Granularity: Sub-Hourly

Frequency: Updated daily

Range Displayed on Report: Start Date through End Date

# Supported Billing Line Items

* Balancing Operating Reserve Charge (1375)

# Report Content Summary

This report displays the customer account’s generator deviation for each generation unit that they own or jointly own and where the unit has a DA Scheduled MWh or RT Generation MW value that is not null for at least one interval of the day. To aid customers in understanding why a unit may or may not have incurred a deviation, flags are included in this report to indicate the reasons for a unit to be exempt from or subject to generation deviations.

The details in this report do not reflect the customer account’s share of jointly owned units. All owners will see the full values associated with the unit.

# Summary of Changes and Special Logic

* The generator deviation MW that appears on this report will no longer be the absolute value of the generator’s deviation. Instead, this could be a positive or negative value. The Supplier Netted Deviation MW will display the absolute value of the sum of the deviation MW for all generators belonging to a particular supplier netted group.
* Several indicators that exist to help determine whether or not a unit is exempt from operating reserve generator deviations have been included on this report. The reasons below represent a deviation exemption hierarchy. The indicator statements should be examined starting at the top and proceeding to the bottom of the list. The first statement that is true for a particular unit and hour indicates whether or not the unit is exempt from deviations or not. No subsequent statements should be evaluated.
* Actual Indicator = Y and unit is operating at the request of PJM, deviations will not be incurred
* Operating Reserve Lost Opportunity Cost Eligible = Y, deviations will not be incurred
* Reactive Services Eligible = Y, deviations will not be incurred
* Regulating Indicator = Y, deviations will not be incurred
* Synch Reserve Tier 1 Response Indicator = Y, deviations will not be incurred (Prior to 10/1/2022)
* Synch Reserve Event Response Indicator = Y, deviations will not be incurred
* Synch Reserve PJM-Assigned Tier 2 Indicator = Y, deviations will not be incurred (Prior to 10/1/2022)
* Synch Reserve or NSR Reduction Indicator = Y, deviations will not be incurred
* Sec Reserve Reduction Indicator = Y, deviations will not be incurred
* Min Gen Reduction = Y, deviations will not be incurred
* Hydro Unit Indicator = Y and Within 5% / 5 MW Deviation Threshold = N, deviations will be incurred
* Restricted Limits Indicator = True and Within 5% / 5 MW Deviation Threshold = N, deviations will be incurred
* RT Generation MW <= 0 and DA Scheduled MW <> 0 and Within 5% / 5 MW Deviation Threshold = N, deviations will be incurred
* Self Scheduled: Max <= 110% Min or Desired MW <= Min and Within 5% / 5 MW Deviation Threshold = N, deviations will be incurred
* % Off Dispatch Greater than 10% = Y and Following PJM Dispatch = N and Within 5% / 5 MW Deviation Threshold = N, deviations will be incurred
* If none of the above statements are true, deviations will not be incurred
* Hourly DA values that appear on the report will be profiled to a 5 minute interval level

# Report Columns

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

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| --- | --- | --- | --- |
| **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) |
| EPT Interval Ending | EPT\_INTERVAL\_ENDING | 4001.40 | VARCHAR2(40)  mm/dd/yyyy HH24:MM format  (Displays first interval of the day as hour 00 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 |
| RT Schedule ID | RT\_SCHED\_ID | 3002.19 | NUMBER |
| DA Scheduled MW | DA\_SCHEDULED\_MW | 3000.32 | NUMBER |
| Scheduled Min (MW) | SCHED\_MIN | 3002.17 | NUMBER |
| Scheduled Max (MW) | SCHED\_MAX | 3002.18 | NUMBER |
| RT Generation MW | RT\_GEN\_MW | 3000.33 | NUMBER |
| Economic Min (MW) | ECONOMIC\_MIN | 3002.22 | NUMBER |
| Economic Max (MW) | ECONOMIC\_MAX | 3002.23 | NUMBER |
| Dispatch Signal MW | DISPATCH\_SIGNAL\_MW | 3002.40 | NUMBER |
| Ramp Limited Desired MW | RAMP\_LIMITED\_DESIRED\_MW | 3002.41 | NUMBER |
| Dispatch LMP Desired MW | DISPATCH\_LMP\_DESIRED\_MW | 3002.42 | NUMBER |
| Operating Reserve Deviation Desired MW | OPRES\_DEVIATION\_DESIRE\_MW | 3002.43 | NUMBER |
| % Off Dispatch | PERCENT\_OFF\_DISPATCH | 3002.44 | NUMBER |
| Use DA MWh Indicator | USE\_DA\_MWH\_INDICATOR | 3002.45 | VARCHAR2(5) |
| DA Fixed Gen Indicator | DA\_FIXED\_GEN\_INDICATOR | 3002.46 | VARCHAR2(5) |
| RT Fixed Gen Indicator | RT\_FIXED\_GEN\_INDICATOR | 3002.47 | VARCHAR2(5) |
| Following PJM Dispatch | FOLLOWING\_PJM\_DISPATCH | 3002.48 | VARCHAR2(5) |
| Use Actual Indicator | USE\_ACTUAL\_INDICATOR | 3002.49 | VARCHAR2(5) |
| Operating Reserve Lost Opportunity Cost Eligible | OPRES\_LOC\_ELIGIBLE | 3002.50 | VARCHAR2(5) |
| Reactive Service Eligible | RCTV\_SER\_ELIGIBLE | 3002.51 | VARCHAR2(5) |
| Regulation Indicator | REGULATION\_INDICATOR | 3002.52 | VARCHAR2(5) |
| Synch Reserve Event Response Indicator | SYNC\_RES\_EVENT\_RESP\_IND | 3002.64 | VARCHAR2(5) |
| Synch Reserve or NSR Reduction Indicator | SYNC\_RES\_NSR\_REDUCTION | 3002.65 | VARCHAR2(5) |
| Sec Reserve Reduction Indicator | SEC\_RES\_REDUCTION | 3002.66 | VARCHAR2(5) |
| Min Gen Reduction | MIN\_GEN\_REDUCTION | 3002.55 | VARCHAR2(5) |
| Hydro Unit Indicator | HYDRO\_UNIT\_INDICATOR | 3002.56 | VARCHAR2(5) |
| Restricted Limits Indicator | RESTRICTED\_LIMITS\_IND | 3002.57 | VARCHAR2(5) |
| Self-Scheduled: Max <= 110% Min or Desired MW <= Min | MAX\_LESS\_THAN\_110\_MIN\_DES\_LESS\_THAN\_MIN | 3002.58 | VARCHAR2(5) |
| % Off Dispatch Greater than 10% | PERCENT\_OFF\_DISP\_GRTR\_THAN\_10 | 3002.59 | VARCHAR2(5) |
| Within 5% / 5 MW Deviation Threshold | WITHIN\_5\_PERCENT\_OR\_5MW\_DEV\_THRHS | 3002.6 | VARCHAR2(5) |
| Generator Deviation MW | GEN\_DEVIATION\_MW | 3002.61 | NUMBER |
| Supplier Netted Group ID | SUPPLIER\_NETTED\_GROUP\_ID | 3002.62 | NUMBER |
| Supplier Netted Deviation MW | SUPPLIER\_NETTED\_DEV\_MW | 3002.63 | NUMBER |
| Version | VERSION | 4000.07 | VARCHAR2(12) |

Possible values for Indicator rows (this includes all rows listed above from Use DA MWh Indicator to Within 5% / 5 MWh Deviation Threshold): Y or N

# CSV Report Example

See Excel file titled “Operating Reserve Generator Deviations – 5 Minute CSV Format.csv”

Note: This CSV file includes enhanced detail to illustrate column population for each data type.

# XML Report Example

See XML file titled “Operating Reserve Generator Deviations – 5 Minute XML Format.xml”

# Supporting Calculations

If Use DA MWh Indicator = Y, then

Generator Deviation MW = RT Generation MW - DA Scheduled MW

Else, Use DA MWh Indicator = N

 Generator Deviation MW = RT Generation MW - Operating Reserve Deviation Desired MW

Supplier Netted Deviation MW = ABS| Sum(Generator Deviation MW) for all generators in the supplier netted group|