MISO-PJM Enhanced M2M Data Exchange

The enhanced data exchange between MISO and PJM is an "after the fact" exchange of data that will be used for shadow calculating each other's market flows and for verifying each other's results independently. The data exchange also ensures that both MISO and PJM will have a full set of input data that feeds into their respective market flow calculators and can be used to perform any reviews necessary in case of validation failures.

OVERVIEW

i.   All input data feeding into the market flow calculator will be exchanged.
ii. The final market flow numbers calculated will be exchanged.
iii. Each of the files exchanged will be formatted in a common structure agreed upon by MISO and PJM.
iv. A total of 32 files will be exchanged in a .csv format and both RTO's files will contain the same number of fields with identical header names.
v.   All 32 files will be zipped into a single file that follows a standard naming convention, with the markethour, version number and caseID in the file name.
vi. The RTO's will post their zipped files every 5 minutes to secured servers for the partnering RTO to download via a secured HTTPS connection.
vii. In the event of an outage to the application, the files will not be posted.
viii. The downloaded files will be used to confirm the partnering RTO's market flow calculations.
   ix. Any inquiries that the partnering RTO may have regarding data validity should be directed to the respective RTO's Market-to-Market Review Team.

DESCRIPTION OF DATA BEING EXCHANGED

Following are the files that would be exchanged. In this document, the files are listed in different categories for ease of understanding but while exchanging data, all individual files will be zipped into one single file. If any of the files are applicable only to one of the entities, the other entity will send a file with only the header.

i.   Definition Files - These files are specific to only PJM and are used to map PJM's Node Ids to PJM's Node Names. MISO will be sending a file with only the header.
1.   **GEN_DEF**: This file contains generator mapping information.
2.   **LOAD_DEF**: This file contains load mapping information.
3.   **CZ_DEF**: This file contains LBA mapping information.
4.   **AGG_NODE_DEF**: This file contains price node information.
5.   **MZ_DEF**: This file contains marginal zone definitions.
6.   **PT_DEF**: This file contains pseudo tie definitions.
7.   **PAR_DEF**: This file contains par definitions.

ii. <u>Flowgate data</u> -
1. **FG_DEF**: This file contains information on all flowgates reciprocal and/or M2M between MISO and PJM.

iii. <u>State Estimator Data</u> - These files contain the generator, load and control zone information from our respective state estimator files.
1. **GEN_DATA**: This file contains individual generator output information.
2. **LOAD_DATA**: This file contains individual load information.
3. **CZ_DATA**: This file contains loss information per LBA.
4. **GEN_CON_ISLAND**: This file contains disconnected generator units
5. **M2M_PAR:** This file contains par status and Lake Erie circulation data.
6. **MZ_DATA**: This file contains marginal zone data.

iv. <u>Transaction Data</u> – These files contain tag information that will be used in the market flow calculator.
1. **RTO_EXPIMP**: This file contains the total RTO export and total RTO imports.
2. **DS_EXPIMP**: This file is specific to MISO, and PJM will send only the header row. This file contains dynamic schedule exports (if any) and dynamic schedule imports (if any).
3. **CZ_EXPIMP**: This file is specific to MISO, and PJM will send only the header row. This file contains control zone exports (if any) and control zone imports (if any).

v. <u>Shift Factors</u> – These files contain the distribution factors for each flowgate.
1. **GSF**: This file contains the generator shift factor for each flowgate.
2. **LSF**: This file contains LBA level load shift factors for each flowgate.
3. **LDF**: This file contains the individual Load distribution factor for each flowgate. MISO will send a blank file since MISO does not generate or use LDF for market flow calculations.

vi. <u>Misc. adjustment Data</u> –
1. **CZ_SHFT_DATA**: This file is specific to PJM, and MISO will send only the header row. This file contains a specific load MW amount that needs to be shifted from one control area to another control area for the calculations.
2. **DC_LINE**: This file is specific to MISO, and PJM will send only the header row. This file contains the sending end and receiving end power of the DC line as well as the DC losses that will be used to perform DC adjustments.
3. **EAR**: This file is specific to MISO, and PJM will send only the header row. This file contains the EAR (External Asynchronous Resource) information that will be used to include EAR impacts in MISO's market flow calculation.
4. **MZ_SF_DATA**: Shift factors related to Michigan/Ontario pars.
5. **SCH_DATA**: This file contains import and export schedule data.
6. **UNIT_SPEC_XFER**: This file contains unit specific transfers.
7. **CI_DATA**: This file contains MISO BDE Common Interface Definitions.

vii. <u>MFC Information Data</u> –

1. **MFC_VER**: This file will contain the version of the market flow calculator executable as well as the version date.
2. **M2M_QI**: This file will contain the quality of each of the files exchanged. It will indicate whether the contents of the data is fresh, stale or replaced.
3. **MFC_CASE**: This file will contain information on the time period of the case. It will indicate the market hour to which the data corresponds to as well as the timestamp of the calculation.

viii. <u>Market Flow output data</u> –
1. **M2M_DATA:** This file will contain the output data from the market flow calculator. It will contain the market flows in forward and reverse directions for all RCF and/or M2M flowgates.

ix. <u>Configuration Parameter Data</u> –
1. **CONFIG_PARAM** : The market flow calculator has been enhanced to use certain configuration parameters that will help enable/disable features easily without modifying the calculator code. This file will contain such configuration parameters and their corresponding flag status currently being used.