Each excel file contains the following sheets:

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| --- | --- | --- | --- |
| Group | Sheet name | Specific description of the sheet contents | Remarks |
| Results of the initial PF (before optimizing flexibility assets). | **VOLT** | Voltage magnitude on each bus for each weather scenario. | This data has 3 dimensions (weather scenario, bus#, value of interest), we had to unfold it such that the first column represents Scenario, and second column is bus ID).  Each row represents one the value\_of\_interest for a particular (scenario, ID) combination.  Each row represents one time period. |
| **Crnt\_PU** | Current flow on each line, in PU (Amperes PU) |
| **Crnt\_SI** | Current flow on each line, in SI units (Amperes) |
| Load and RES data from the input files, for cross checking against input data | **P\_load** | Active/Real power component of load |
| **Q\_load** | Reactive/Imaginary component of load |
| **Pg\_max** | Active/Real power component of RES generation |
| **Qg\_max** | Reactive/Imaginary component of RES generation |
| Violations detected in the PF result (before attempting to optimize flexibility assets). If NEITHER of these 2 sheets exist, then there were no violations at all, and there is no need for optimizing flexibility assets. | **Vlt\_Viol** | List of violations of the voltage limit. If this sheet does not exist, it means there are no such violations. | Each violation is represented by 1 column.  **First** row (e.g. x1) is the ID# of the violation  **Second** row (e.g. Itr:1) is the iteration of PF where this violation was identified  **Third** row (e.g. viol\_num: 1) is violation ID (same as first row)  **Fourth** row: Weather scenario where this occurs.  **Fifth** row: The time period (t) where this violation occurs.  **Sixth** row: the bus/node where this violation occurs.  **Seventh** row: voltage value  **Eighth** row: violation size = Voltage value – limit |
| **Crnt\_Viol** | Violations of the lines thermal limits (i.e. high current flow)  If this sheet does not exist, it means there are no such violations. | Each violation is represented by 1 column. (Column A is one violation. Column B is the second violation)  **First** row (e.g. x1) is the ID# of the violation  **Second** row (e.g. Itr:1) is the iteration of PF where this violation was identified  **Third** row (e.g. viol\_num: 1): violation ID (same as first row)  **Fourth** row: Weather scenario where this occurs.  **Fifth** row: The time period (t) where this violation occurs  **Sixth** row: “From\_Bus” side of the concerned line  **Seventh** row: “To\_Bus” side of the concerned line  **Eighth** row: Actual current flowing on this line  **Ninth** row: Flow limit on this line  **Tenth** row: Violation size = Actual flow – flow limit |
| Results of flexibility optimization. If these sheets were not found, then the optimization failed. | **APC\_MW** | Active power curtailment | Each row represents one asset  Each column represents one time period  The last 4 rows represent: “Min”, “Max”, “Average”, and “Sum” of all actions in this time period. |
| **EES\_CH\_MW** | Energy storage charging events |
| **EES\_DCH\_MW** | Energy storage discharging events |
| **FL\_OD\_MW** | Flexible load events of over-demand (increasing consumption) |
| **FL\_UD\_MW** | Flexible load events of under-demand (decreasing consumption) |
| **COST** | Total cost of flexibility deployment |  |