Question

18. Please provide graph(s) and supporting data that illustrate the following, at a minimum: load; aggregate Duke owned generation; imports; exports; frequency; and ACE from December 23, 2022, through December 28, 2022, with DEP East, DEP West and DEC specific information in as granular periods as possible, but no less than hourly. (Note: Individual graph(s) or a composite of graph(s) may be provided to illustrate key elements that were taking place during the period in question.) Please provide as granular information as the historian (data recorder) allows, as ACE, frequency, and generation information will likely be more granular than hourly intervals.

a. Please provide any other key values the Company believes appropriate to illustrate system conditions and monitoring related to the real time operations and balancing of the BES, include supporting data.
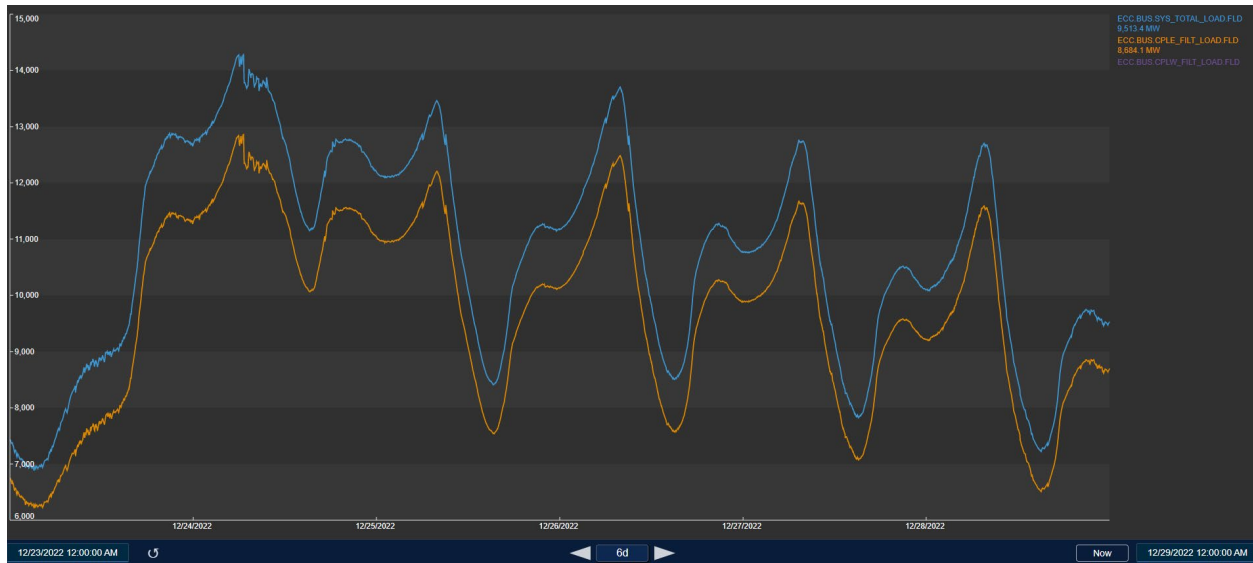
DEP Response:

Regarding 18, all data used for the graphs is SCADA rate (nominally 4 second interval for CPLE, 6 second for CPLW). The data associated with all graphs in this document are in the related comma separated value (csv) files (Q18-DEP System Summary2022-12-xx.csv where xx is the day of the data in the file) included in the zip package. Due to size limitations, each day's data for all graphs are in separate csv files. Data for the Duke-owned generation (a subset of BA generation) is in a separate csv file for the entire period (Q18_duke_owned_total_gen_dep_12232022_12292022.csv) due to the additional processing needed to produce those values. The graph is of a different style due to the use of a different application to produce that graph. Graphs requested are provided in the following order:
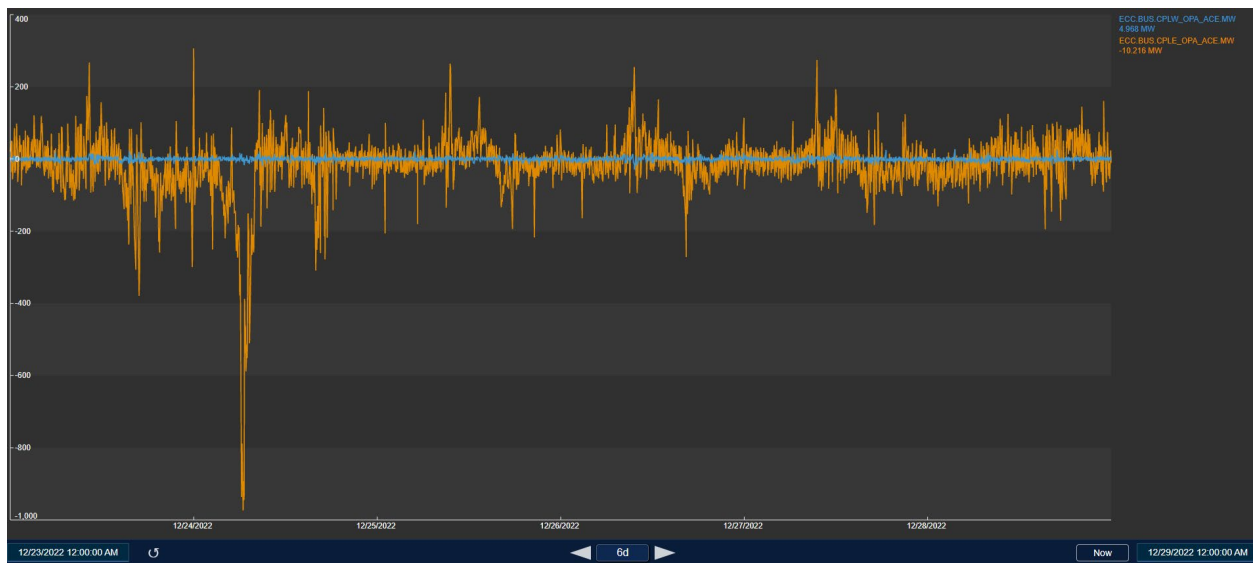
- Balancing Authority Area (BAA) load (CPLE and CPLW BAAs shown as separate traces)
- Area Control Error (ACE) (CPLE and CPLW BAAs shown as separate traces)
- Frequency (CPLE and CPLW BAAs shown as separate traces)
- CPLE BAA Actual Net Interchange with neighboring BAs (interchange covers both imports and exports)
- CPLW BAA Actual Net Interchange with neighboring BAs (interchange covers both imports and exports)
- BAA Aggregate Generation (CPLE and CPLW BAAs shown as separate traces) (NOTE: not actually requested but a key value used)
- Duke Owned Aggregate Generation in the DEP BA

Regarding 18a, in addition to the BA aggregate generation key value listed above, graphs of the Joint Dispatch Algorithm (JDA) flow and the Balancing Authority ACE Limit (BAAL) exceedance counter are also provided. Data for these two graphs are included in the daily csv files described above.
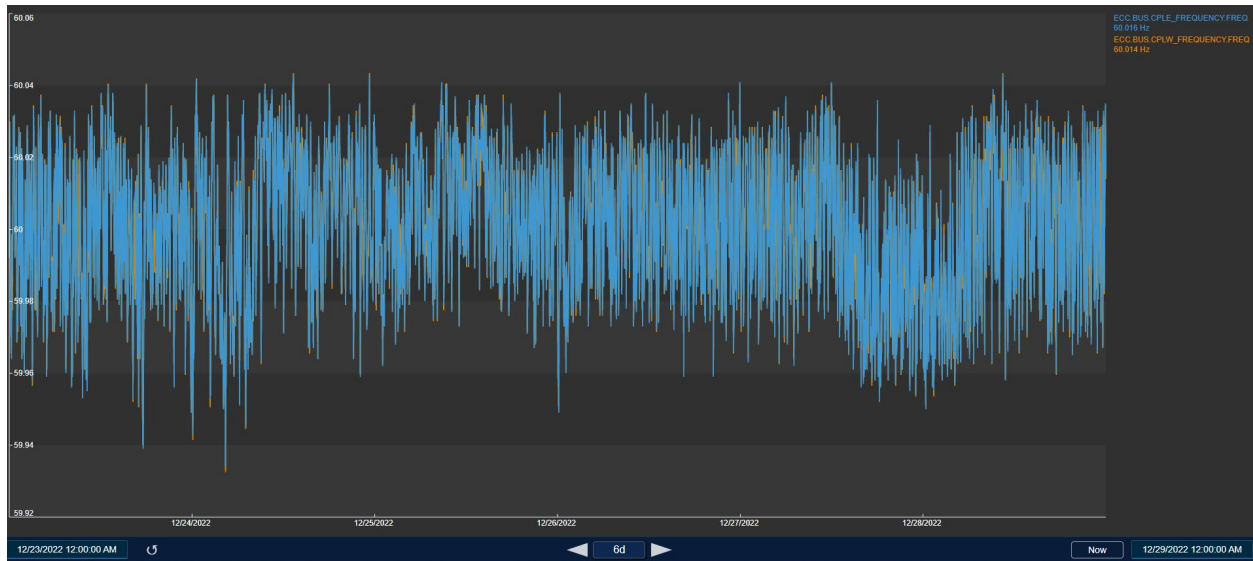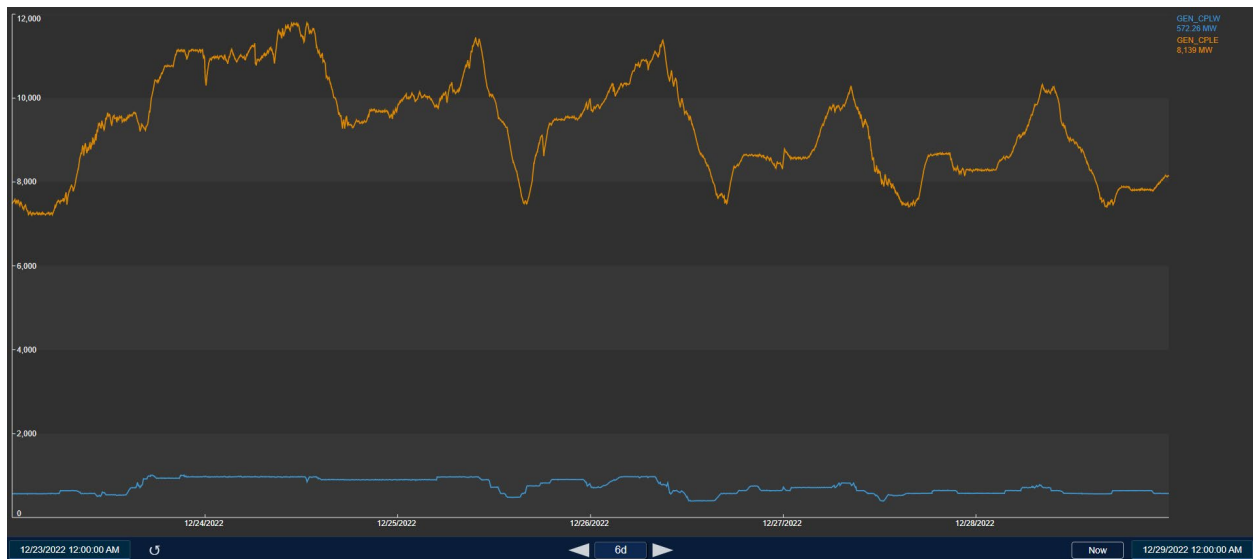
DEP LOAD:

DEP ACE:

DEP FREQ:

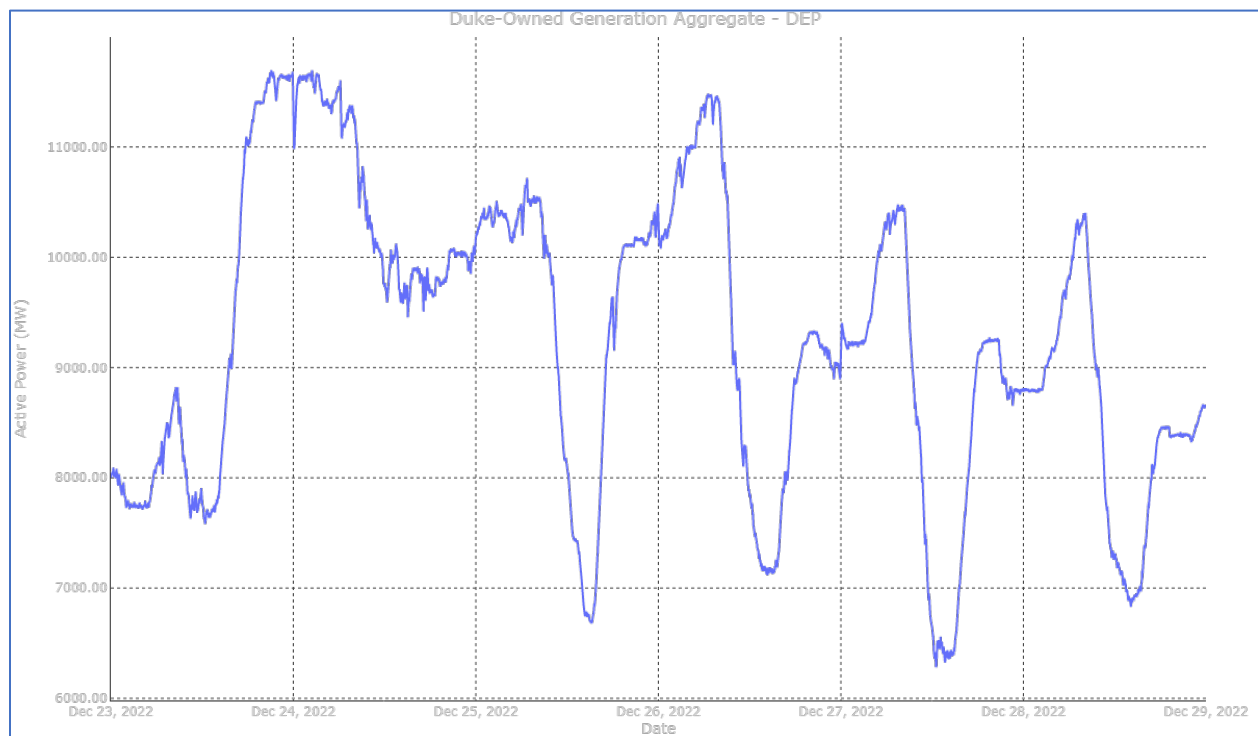DEP CPLE NET INTERCHANGE with NEIGHBORS

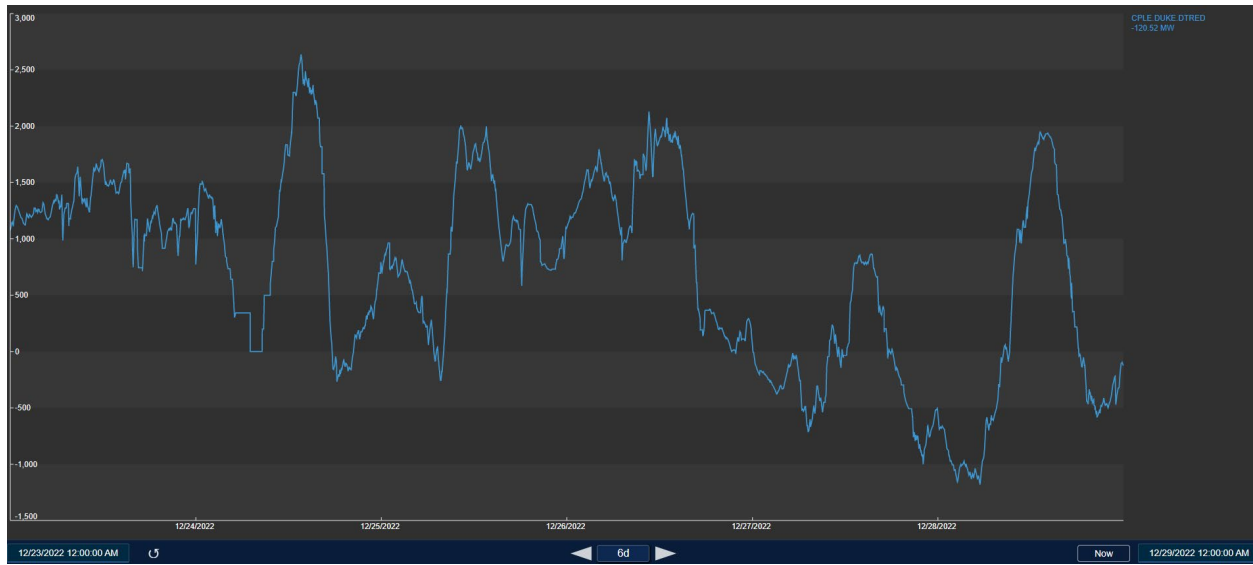DEP CPLW NET INTERCHANGE with NEIGHBORS

DEP Generation Aggregate

DEP Duke-Owned Generation Aggregate

DTRED (JDA)

DEP BAAL Counter