



# BAL-003-1 Frequency Response & Generator Performance

PFRSTF

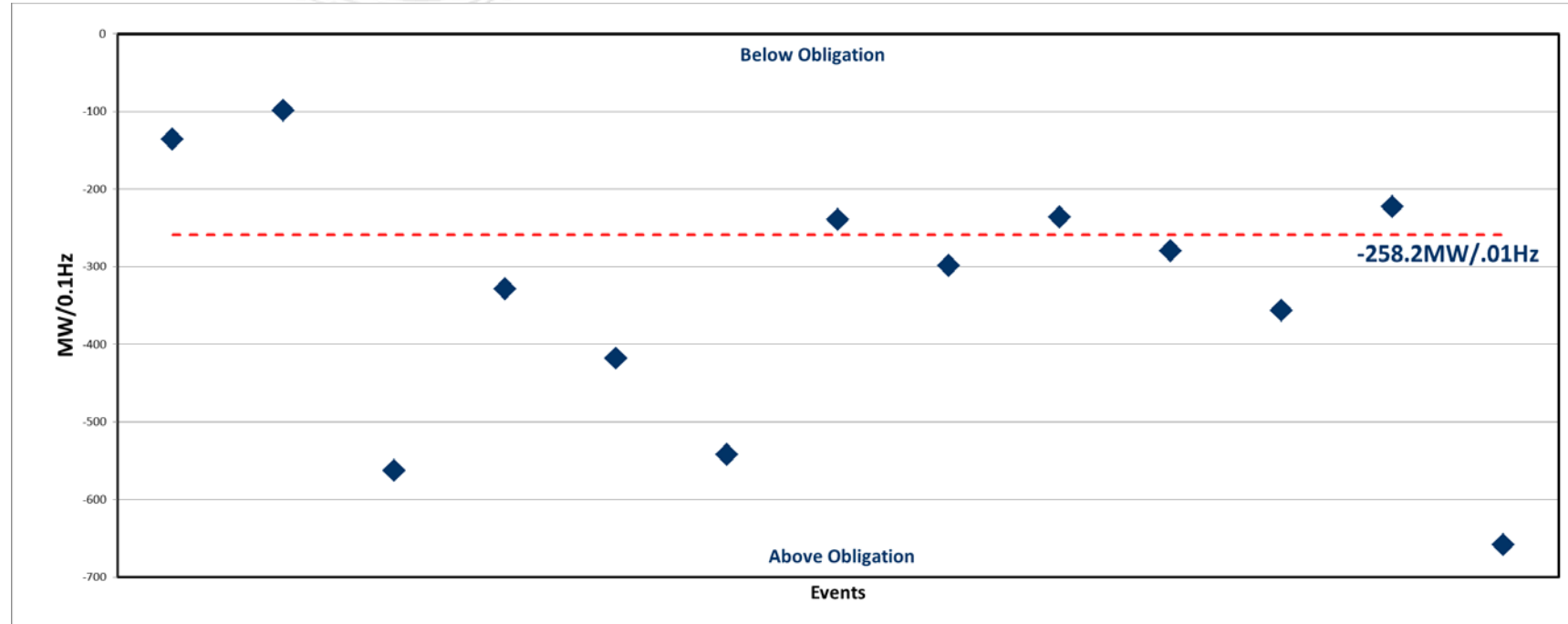
September 26, 2018

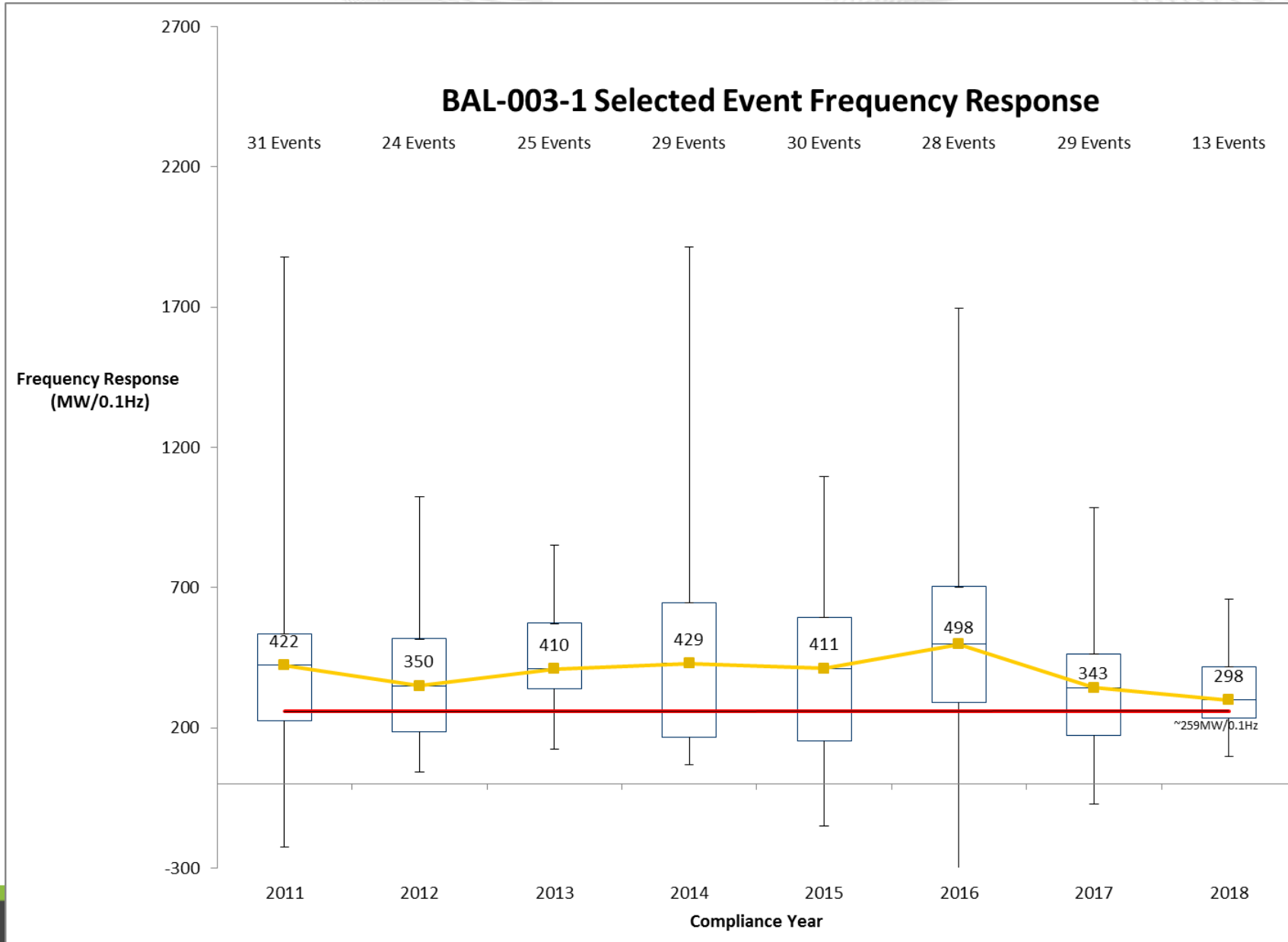
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Operation Analysis & Compliance

- PJM 2018 Frequency Response Performance
- PJM Historic Performance
- Generator Performance

- Performance is measured as the median of all NERC selected events; frequency response measured include generator governor response & load response





- Individual Generator Performance evaluation on-going
  - BAL-003 events and expected BAL-003 events
- No measureable change in generator PFR since FERC Order 841
  - Measuring ~50% of expected MW, on average
  - Working through identifying units providing PFR and units increasing output (not from governor controls) during events
- Working to identify a high frequency event to evaluate Max output units

# Appendix

Primary frequency response is the first stage of frequency control and is the response of generator governors and loads **to arrest locally detected changes in frequency.**

Primary frequency response is automatic, **is not driven by any centralized system,** and begins within seconds after the frequency changes, rather than minutes.

## Primary frequency is essential for reliability of the Interconnection and is

- the first line of defense
- critical for system restoration
- needed for accurate modelling and event analysis
- necessary for compliance to BAL-003-1