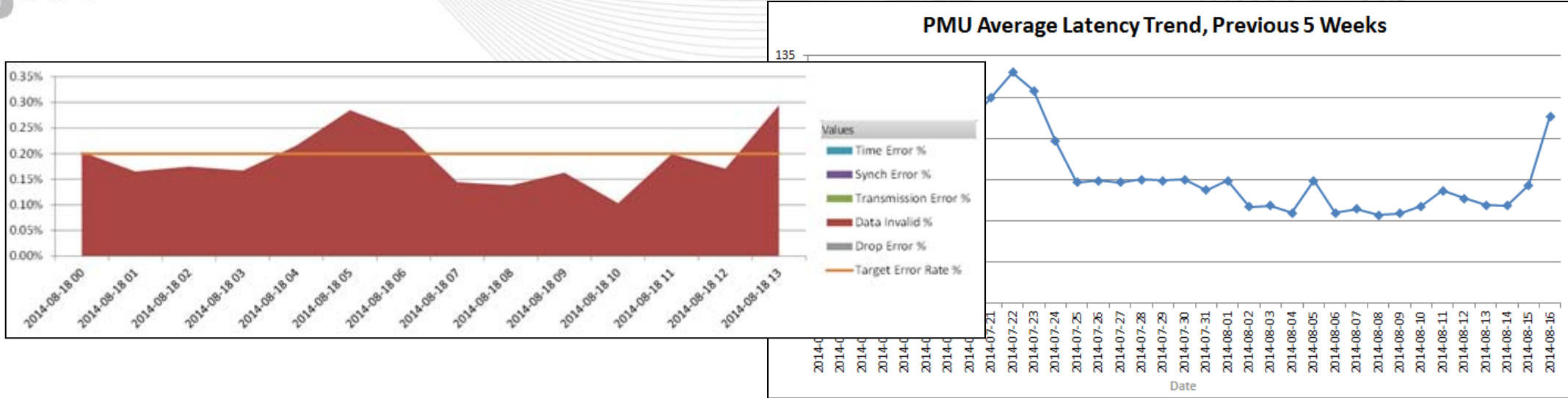


Synchrophasors Update

TOA-AC: December 5, 2014

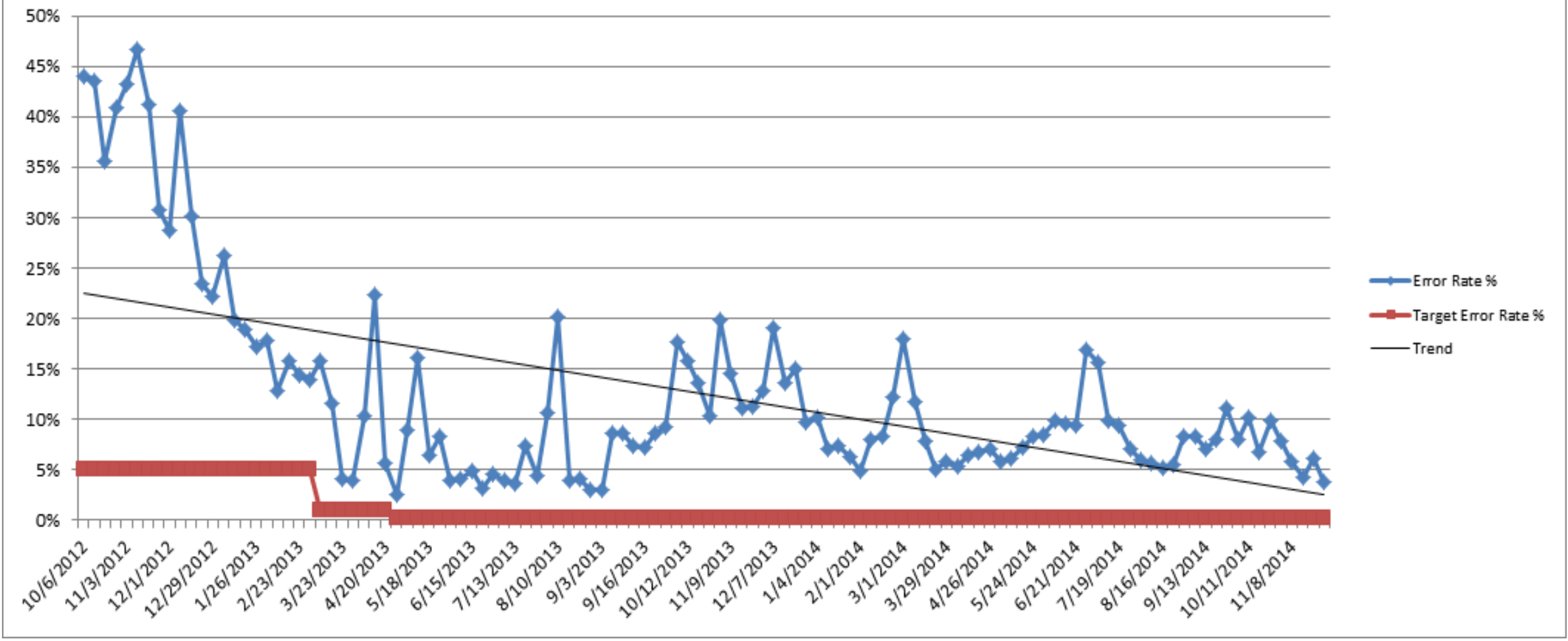
Chantal Hendrzak
Executive Director, Operations Support
PJM Interconnection, LLC



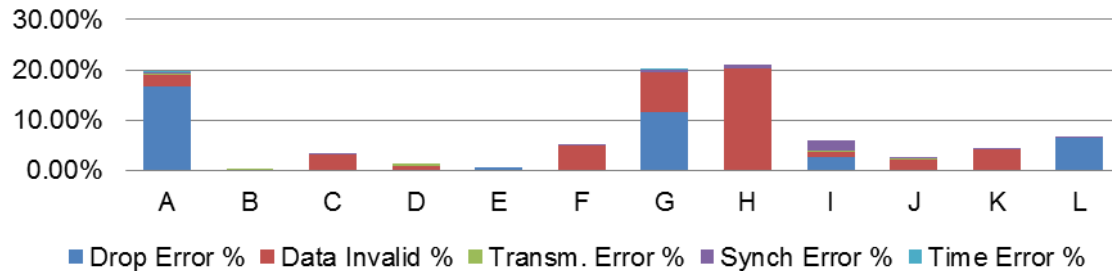
PJM is providing PMU Owners with Weekly Data Quality Reports

- *Highlighting Improvements & Issues*
- *Latency Distribution, Trending & Spike statistics*
- *Data Error Issues based off Time, Synch, Transmission, Data Invalidity & Drop Error.*
- *Details on an individual PMU basis*

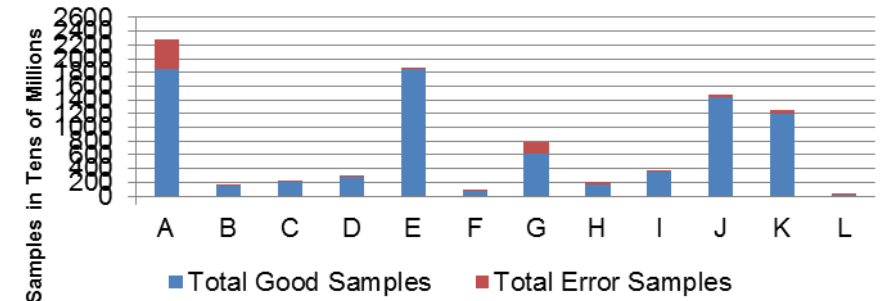
PMU Error Rate Trend, All TOs



Total Phasor Measurement Unit (PMU) Error



Number of Good and Error Phasor Samples



Potential PMU Data Quality in TO Metrics

- *Phasor Data Quality Task Force (PDQTF) indicated a need for additional PMU Data Quality visibility within the company to emphasize correcting Data Quality issues.*
- *Discussing incorporating PMU Data Quality statistics in the TO Metrics.*
- *Some SIS/PDQTF members concerned over including this data before it's deemed "Production" ready internally to the TO.*
- ***TOA-AC Recommendation?***

Further the stability of the network by advancing the integration of PMU data into PJM's systems and applying the high speed data being collected to dispatch operations

Importance to PJM

- Provides expanded data sharing capabilities and comprehensive view of the system
- Enables rapid detection of system disturbances and proactive resolution of stress conditions
- Delivers real-time high resolution data to inform dispatch decisions
- Improves modeling through higher quality system data, more accurate state estimation, dynamic model validation and detection of bad telemetry data

Goal Measurement

- Implement a new Eastern Interconnection Data Sharing Network
- Develop a wide-area visualization display to include PMU data covering the entire Eastern Interconnection
- Deploy oscillation detection tool enhancements
- Create procedures to address oscillation detection mitigation measures
- Implement an enhanced real-time phasor data quality conditioning application

Working with PMU Owners on an Individual Basis

- *Develop a Company by Company 2015 Data Quality goal*
- *Work from the Company by Company 2015 Data Quality goal to determine an overall PJM 2015 Data Quality goal.*
- *Differentiate between planned PMU outages and unplanned data issues.*
PJMSynchroPhasorSupport@pjm.com → *Report Planned Outages*