NASPI North American SynchroPhasor Initiative

Engineering Analysis Task Team Report Out

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EATT Report Out

IBR Performance Response and Analytics Monitoring Task Force (IPRAM)

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IPRAM Outline

Need for IBR monitoring

- reported IBR behavior that has impacted the system.
- new paradigm of grid operation: how to define what is normal/abnormal, secure/unsecure.
- A discussion of grid codes, standards and overview from NERC reports.

Overview on Monitoring Methods

- What phenomena are currently monitored from IBRs.
- Synchrophasor, point-on-wave and other data based industrial solutions. –
- Mapping different measurement tools/methods and their corresponding applications

IBR Operational Behavior

- An overview on how IBRs operate under normal operating conditions vs. transient grid-conditions.
- Response under fault conditions. Protection implications.

IBR performance monitoring

- After discussing IBR behavior, tie back to what monitoring methods have worked well for what behavior from field.

Analytics (Demonstrated and Theorized)

- Academic and laboratory tested solutions

Data-related aspects

- Discussion of data types, storage, compression, retention, interoperability

IPRAM Top Discussion Topics

- IBR behavior and alarm thresholds for alarming
- IBR behavior under system topological and SCR changes
- Need for baselining IBR “normal” operation and monitor, categorize and study abnormal behavior – Small perturbations before they become dangerous
- Data types and granularity of data needed for accurate and efficient IBR plant monitoring

Possible future work:

- Grid Forming versus Grid Following IBR monitoring
- IBR Power Plant controller effects on IBR performance

Future Task Force Ideas

New applications for AI/ML – State of the Technology (what is the industry using) – Maturity level (use and plans to use in vendor products)

Inverter model validation standard from NERC and downstream utility application

Thank you for participating!