



Mehta Tech, Inc.

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What is the Purpose of DME



- ◆ **To have adequate data available to facilitate analysis of Bulk Electric System (BES) Disturbances. (PRC-002)**
- ◆ Recording of System Events
 - ◆ Power system faults, including time of fault
 - ◆ Power system disturbances or swings
 - ◆ Abnormal instrument transformer behavior
- ◆ Monitoring of Protective System performance
 - ◆ Failure of a relay to operate as intended (retrofit, trip test switch open, etc.)
 - ◆ Incorrect tripping of terminals for external faults
 - ◆ Determination of optimum line reclose delay
 - ◆ Failure of fault-interrupting devices
- ◆ Accommodates compliance with PRC-002



DME Industry Trends



- Many rural municipal and cooperative utilities are now having to meet NERC standards due to customer growth
- The recent expansion of Inverter Based Resources (IBR) has challenged conventional grid capability and reliability
- Digital Transformation initiatives have created more awareness of available monitoring solutions
- Continued regulatory changes are creating demand for more data to be collected and at more types of facilities
- Several DME equipment manufacturers are promoting a “Single-Source Solution” for System Protection and Disturbance Monitoring
- More companies are owned, operated, and or supported outside of the US
- The recent classification of “Critical Infrastructure”

Why use Stand-Alone DME vs “All-in-One” devices



- Substation-focused device (as opposed to just a line, breaker, or transformer) which can create a single, permanent detailed recording of all substation activity
- Comprehensive data collection/storage provides enhanced analysis for system incidents
- Larger memory capacities allow for fewer “Record Overwrite” concerns
- Accurate parameters for time and magnitude allow for better fault characterizations and analysis of disturbances
- Proper analysis of recorded data, improved performance, and reliability can be achieved through the identification of the “Root Cause” of system events
- Identify if/when a relay system fails to operate as designed

Real World Example of DFR Value



- DFR starts triggering and captures a distorted voltage waveform
- No relay operations
- Digital voltmeter readings of the voltage signal don't raise any red flags
- No other devices at the substation reported any 'abnormal' voltage readings
- Customer calls for technical support only to find out that the DFR was working properly



Who is Mehta Tech, Inc.



- ◆ Headquartered in Eldridge, Iowa
- ◆ Serving utilities' needs since 1983
- ◆ Pioneered the concept of the conventional DFR
- ◆ Over 15 U.S. patents for our proprietary technologies
- ◆ Mehta Tech owns all equipment designs
- ◆ Over 1,700 large-scale DFR installations
- ◆ Installations in 10 different countries
- ◆ Acquired by Iowa-based St. Martins Holdings Company on October 13, 2021

