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Automated Meter Reading & Advanced Metering Infrastructure


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Agenda

- » Automated Meter Reading
 - The Basics
- » Advanced Metering Infrastructure
 - Features & Functions
- » Open Discussion

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Automated Meter Reading

- » One-way communication(s) technology
 - Radio Read and Power-line Carrier technologies
- » Typically for monthly billing read data collection only
 - Single to three reads provided – kWh, kW, other
- » Low cost of entry – easy business case
 - Improve safety – bad dogs; un-safe environments
 - Improved access to meters
 - Improved reading accuracy
 - Operational savings - reduced cost to collect reads
- » Very few utilities do not use some form of AMR

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Advanced Metering Infrastructure

- » Two-way communication(s) technology
 - Typically Fixed Based Radio also some Power-line Carrier
- » Typically for advanced data requirements
- » Higher cost of entry – with many more benefits
 - Same base benefits as AMR
 - Advanced read data available for collection
 - 2-way commands to meter
 - Real-time and near real-time data retrieval
 - Real-time reporting of events and alarms
 - 2-way network for other applications

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AMI: Same Benefits as AMR

- » Monthly billing read
- » Collect data without going on customer premise
- » Operational savings

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AMI: Advanced Meter Data

- » Advanced register data for every meter
 - Demand
 - Bi-directional
 - KVAR
 - kVA
 - Power Factor
- » Time of Use (TOU)
- » Voltage
- » Interval Data
 - 5 mins; 15 mins; 60 mins intervals

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AMI: 2-way Commands to Meter

- » Operate disconnect switch
- » Pre-pay support
- » Load Limiting
- » Change the meter to a new programming configuration
- » Update meter features and functions – no “regrets”

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AMI: Real-time and Near Real-time Data

- » Request specific read for customer service use
 - Move in/out reads – final bills
- » Reads for every meter pushed every 2 hours typically
 - Commercial accounts = 15 mins intervals
 - Residential = 60 mins intervals
 - Daily reads for all accounts
- » Graphical display of customer usage over time
- » Enables back-office engineering analytics
 - Transformer load management
 - Voltage Quality
 - Energy diversion theft

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AMI: Real-time Events & Alarms Reporting

- » Outage Management
 - Outage notification
 - Restoration notification
- » Voltage Monitoring & Control Support
 - Voltage sag
 - Voltage swell
- » Theft detection alarm

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AMI: 2-way Network for other Applications

- » Distribution Automation – grid reliability
 - Voltage optimization control
 - Capacitor Bank control
 - PV & Renewable energy control
- » Demand Response
 - Load control
- » Internet of Things (IoT)
 - Traffic & Parking
 - Noise sensors
 - Environment sensors

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Open Discussion

Thank You

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- » This is a content slide with the image and logo but NO to slide title box. When you indent there are levels/styles of bullets:
 - There is a simple line, but this line is slightly greyer, so it stands out as different. So there is a hierarchy of information.
 - And we can make these any colors, or bullets that we want.
 - Here is the next bullet down. Again, we can make these whatever we'd like, just showing a variety here that looks nice and color coordinated.
 - A round bullet is always nice to have within the bullet family.

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