Measurement and Verification for Residential DR

2/15/2017
Interval metered customers

- No change in status quo for M&V and meter data collection
- Actual hourly meter data for all customers is used
- Not eligible to participate in sampling
Non-interval metered customers

- M&V done via real-time sample
  - Random and representative sample of customers with non-interval meters
  - Sample is in real-time – i.e. data from sample is from same time period as event
  - Hourly data from sample is scaled to population
  - After data is scaled to population, processes are same as interval metered customers
• Sample must be designed to be representative of population

• Maximum error of 10% at 90% confidence
  – If we draw sample same way, 90% of samples drawn will give a result within +/- 10% of true population value
• To be submitted to PJM before registration
  – M&V plan (before May 1)
    • Program Description Template:
      http://www.pjm.com/~/media/etools/elrs/residential-mv-program-description-template.ashx
    • Variance Study and Sample Selection Template:
  – Meter quality assurance and qualification documentation
• To be submitted to PJM before June 1 (Start of Delivery Year)
  – List of all registered customers (customers that will participate): EDC account number, PLC, zip code
    • Pseudo-EDC account permitted where legal/regulatory conditions prohibit sharing
• To be maintained by CSP for 2 years and submitted to PJM on request within 2 business days.
  – List of any replacement customers
  – List of customers cycled during an event
  – Individual meter data (sample or actual) from event/test

See comprehensive training material at - http://www.pjm.com/~/media/training/core-curriculum/ip-dsr/residential-measurement-and-verification.ashx
• M&V plan must be submitted and approved by PJM before registration is submitted.
• Updated and resubmitted annually to continue participation in PJM markets
• Content:
  – Details on variance study
  – How was sample size determined
  – How was sample selected and stratified
  – Meter qualification
  – Meter quality assurance
  – Data validation and error correction protocol
  – How will sample meter data be converted to population meter data
Mandatory Annual Sample Recalibration

- Sample size recalculated using data from customers in current sample using variance study (see template*)

- Replacements if necessary must be randomly selected in order to maintain strata integrity, etc.

- If population is expanded in non-random manner, sample must be expanded appropriately