Measurement and Verification for Variable DR Economic Resources

DRS
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Alternative CBL applicable to specific load patterns/customer situations and therefore applicable to similar situations in the market
• 1 or 2 odd days have big impact on results.
  – CSP should analyze results through eLRS report.

• CSP did not run current alternative CBLs (7 day type) – simply ran standard and then defaulted to MBL

• Load a function of non-weekly cycles (ie: 3 day cycles and therefore daytype not relevant)
  – Use regression approach to determine
• Max Base Load (MBL)
  – Developed to accommodate random load which can not be forecast.
    • Dynamic FSL type approach to determine quantifiable load reductions
• 3 Before + 2 After (3+2) - testing approach
  – Developed to capture intra-day variation where daily usage is fairly consistent but hourly usage is variable
• 7 Day Types (3 day average)
  – Developed to capture reasonably consistent inter-day variation
    • Monday is fairly consistent but different than Tuesday
• Widely applicable to variable loads
• Logical relationship between unpredictable load and negative bias.
  – The more unpredictable the load the higher the negative bias
• Proposed changes
  – Resource must be available to clear in 4 contiguous hours or be dispatched in 4 contiguous hours
  – Registrations with positive bias or low accuracy with low bias may not be permitted to use (e.g.: 100% RRMSE with – 20% bias)
• **3 Before + 2 After CBL**
  – Average hourly load for 3 hours before event (skip 1 hour before start) plus 2 after (skip 1 hour after)

• Only available upon PJM approval based on:
  – Must be available for dispatch or offer in DA market for at least 4 contiguous hours
  – Another method is not more accurate (including potential for regression model)
  – RRMSE >20% and <=30%
  – Daily usage fairly consistent (intra-day hourly volatility)
  – No significant pre or post change in operations that will impact CBL calculation
    • Thermal load (pre-cooling or snapback)
    • Change in typical operations (including on-site generation schedule)
• PJM to focus on registration with RRMSE >20% and <= 30%:
  – 3 + 2 with modifications
  – 7 day type
    • Limited use to date
  – Modified CBL (no SAA) – something that will not be impacted by change in normal operation on event day before or after the event period.
  – Regression ARIMA models
• MBL with some minor modifications for RRMSE >30%
• Ensure load can be forecast on a reasonably accurate basis before participation
• If load can be forecast on a accurate basis then load reductions can be quantified
• Variable Customers = Hourly load can not be forecast on an accurate basis
  – Based on existing CBL methods.
• RRMSE test is objective way to determine accuracy of CBL to forecast load.
Focus on these customers