ATRM Changes

Alternative Technologies and Regulation Market Webinar – changes from previous design

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Discussion Objectives

- Explain recent changes to the Regulation Market with specific emphasis on:
  - The new Energy Neutral Regulation Signal
  - Impacts on monitoring of the performance of Regulating Resources

- This discussion assumes knowledge in the recently revised and released regulation market web-based training
  - Available at: ISO-TEN
  - and http://www.iso-ne.com/participate/training/elearning-opportunities .

- High level overview of the changes
  - Two AGC signals

- Q and A session

Changes to ISO-NE Documents

- Market Rule 1
  - Section I.2.2 Definitions
  - Section III.14 Regulation Market
  - Section III.14.6:

"Resources that are generating units are dispatched based on relative response rates using multi-valued AGC SetPoints with AGC SetPoint Deadbands. Resources that are not generating units are may be dispatched using one of the following methods:

•(a)an energy-neutral a trinary dispatch that calculates AGC SetPoints equal to one of the following three values: Regulation High Limit, Regulation Low Limit, and a midpoint between the Regulation High Limit and the Regulation Low Limit;

•(b)a relative response rate dispatch using multi-valued AGC SetPoints with AGC SetPoint Deadbands, or;

• (c)an energy-neutral relative response rate dispatch using multi-valued AGC SetPoints , with AGC SetPoint Deadbands.

A Market Participant may change the dispatch method for a non-generating unit. Dispatch methodology may be changed to be effective at the start of every calendar quarter. Requests to change the dispatch method of a non-generating resource must be received no later than 30 Business Days before the requested effective date of the change."

- Manuals
  - Manual 11, Sections 1.2, 2.5, 5.1, 5.2 have general info
  - M-REG

# Input: Regulation Offer

- Entered into eMarket

- Daily offers provide default values that carry over

- Hourly offers supplant the daily offer, but do not carry over

- Unit regulating status
  - Available
  - Unavailable

- Physical offer data
  - Automatic Response Rate (ARR) in MW/minute to nearest tenth (e.g., 3.9 MW/minute)
  - Regulation High Limit (MW)
  - Regulation Low Limit (MW)

- Economic offer data
  - Regulation Capacity offer price
    - Floor at $0/MW and Cap at $100/MW
  - Regulation Service offer Price
    - Floor at $0/MW-mile and Cap at $10/MW-mile

- Dispatch Methodology (ATRRs only – must choose 1 of 3 possibilities)
  - CON
    - Conventional AGC Setpoint – default
  - Energy Neutral
    - Energy Neutral Continuous AGC Setpoint   (ENC)
    - Energy Neutral Trinary AGC Setpoint   (ENT)

Regulation Monitoring – Market Rule Guidance

- "The performance of a Resource providing Regulation will be monitored in Real-Time. " (Section III.14.7)

- Achieved by comparing actual Regulation MW to the AGC signal in a systematic manner

- If a resource movement is inconsistent with the AGC Setpoint, it will not get credit for the rest of the hour (Section III.14.7)

- Specific guidance on measurement process includes:

  - Tolerance band(s) based on offered Automatic Response Rate and Regulation Capacity

  - Grace periods to allow reasonable time lags

  - ARR : allow uncertainty up to +/- 20% of offered ARR

  - Regulation Capacity: allow uncertainty up to +/- 15% of the calculated Regulation Capacity.

- Two different Parameter sets are used in order to more accurately track the performance of resources following the two types of dispatch methodologies
    - One for Conventionally dispatched resources
    - One for Energy Neutral Dispatched resources

- Two parameter sets are required due to fundamental differences in the nature of the Conventional and Energy Neutral AGC setpoints

- Otherwise the performance monitoring of the resources following these two different dispatch methodologies is exactly the same.
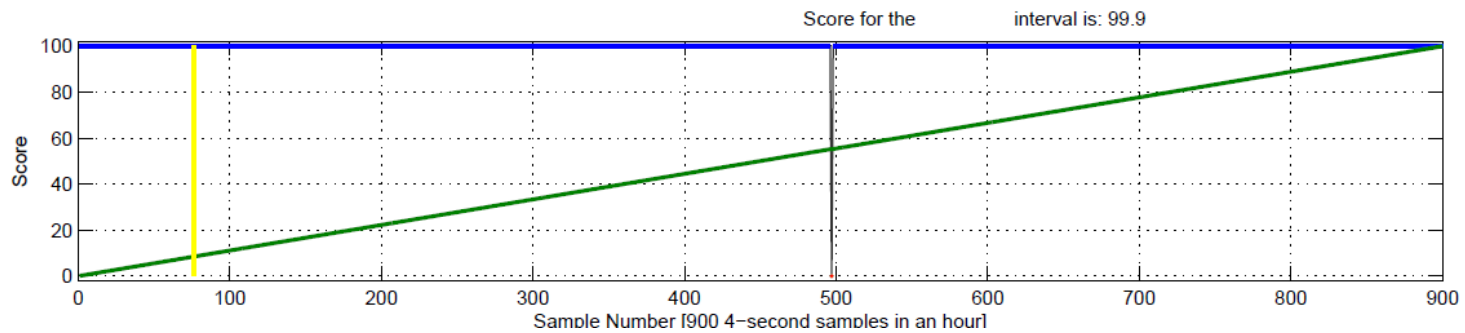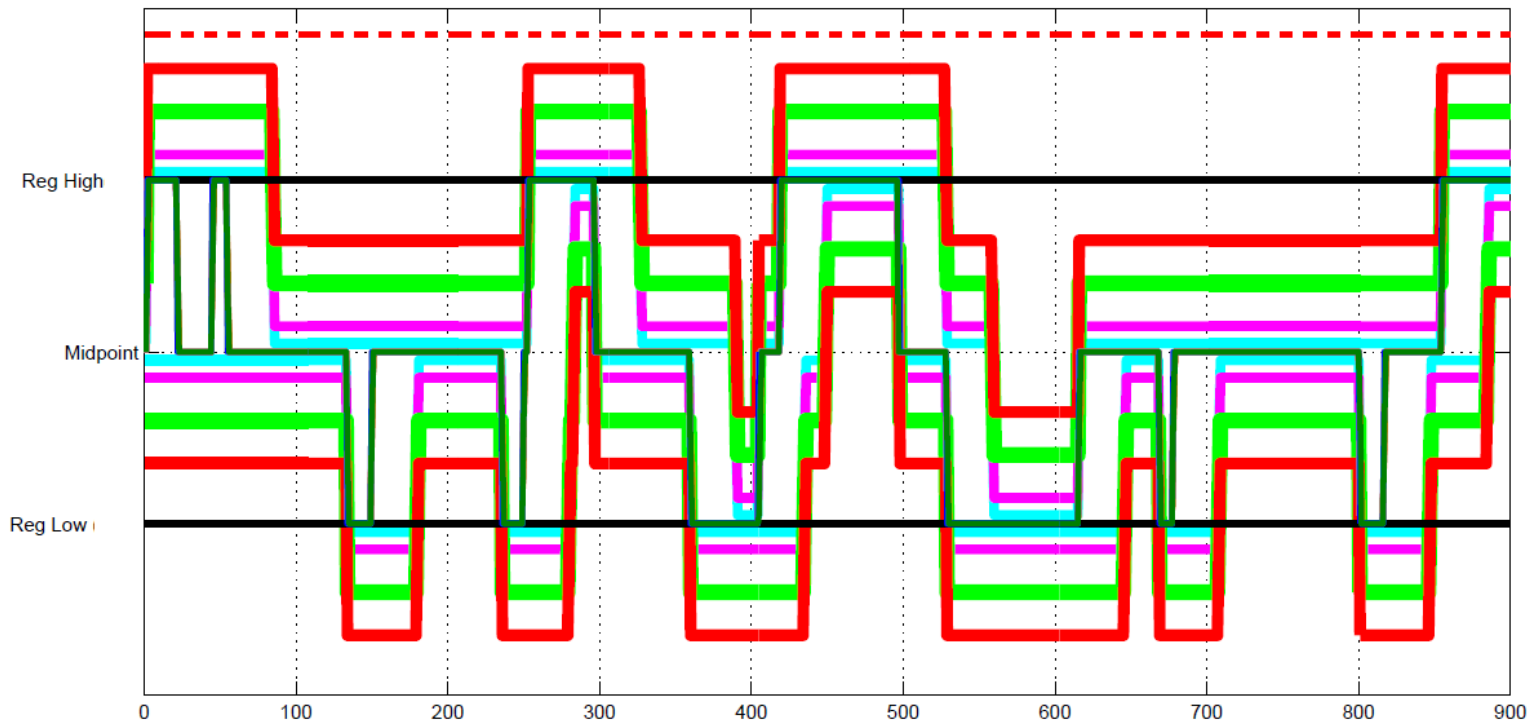
Regulation Monitoring – Figure 6

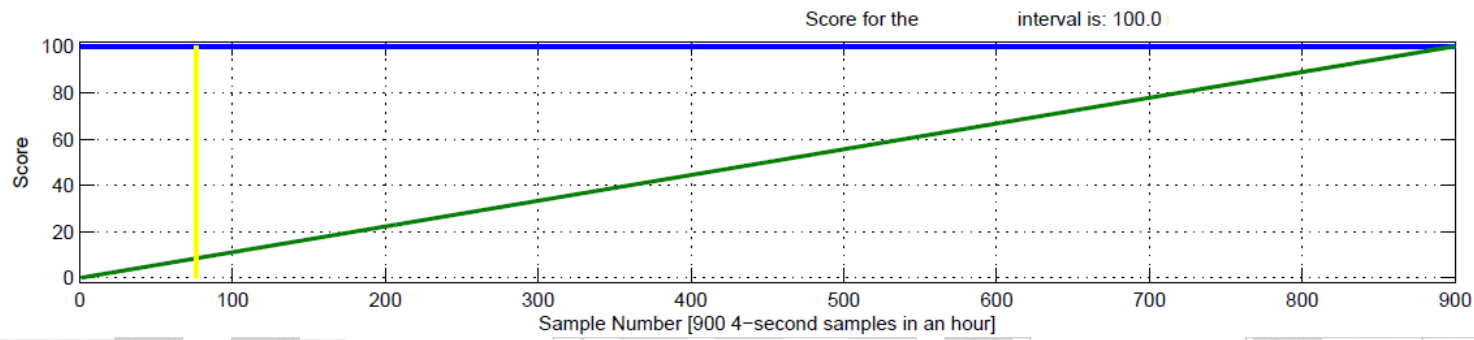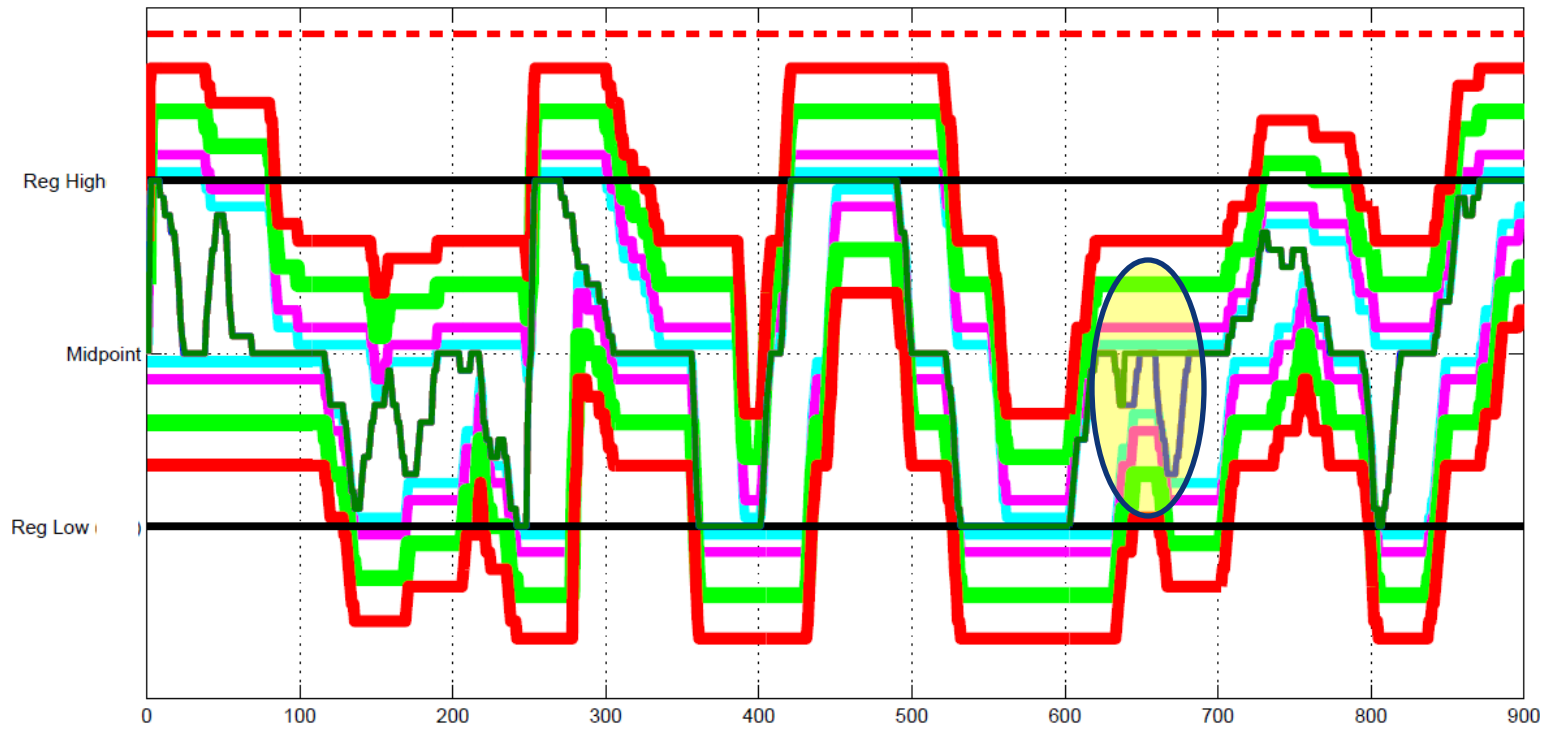Sample of AGC Performance Monitoring
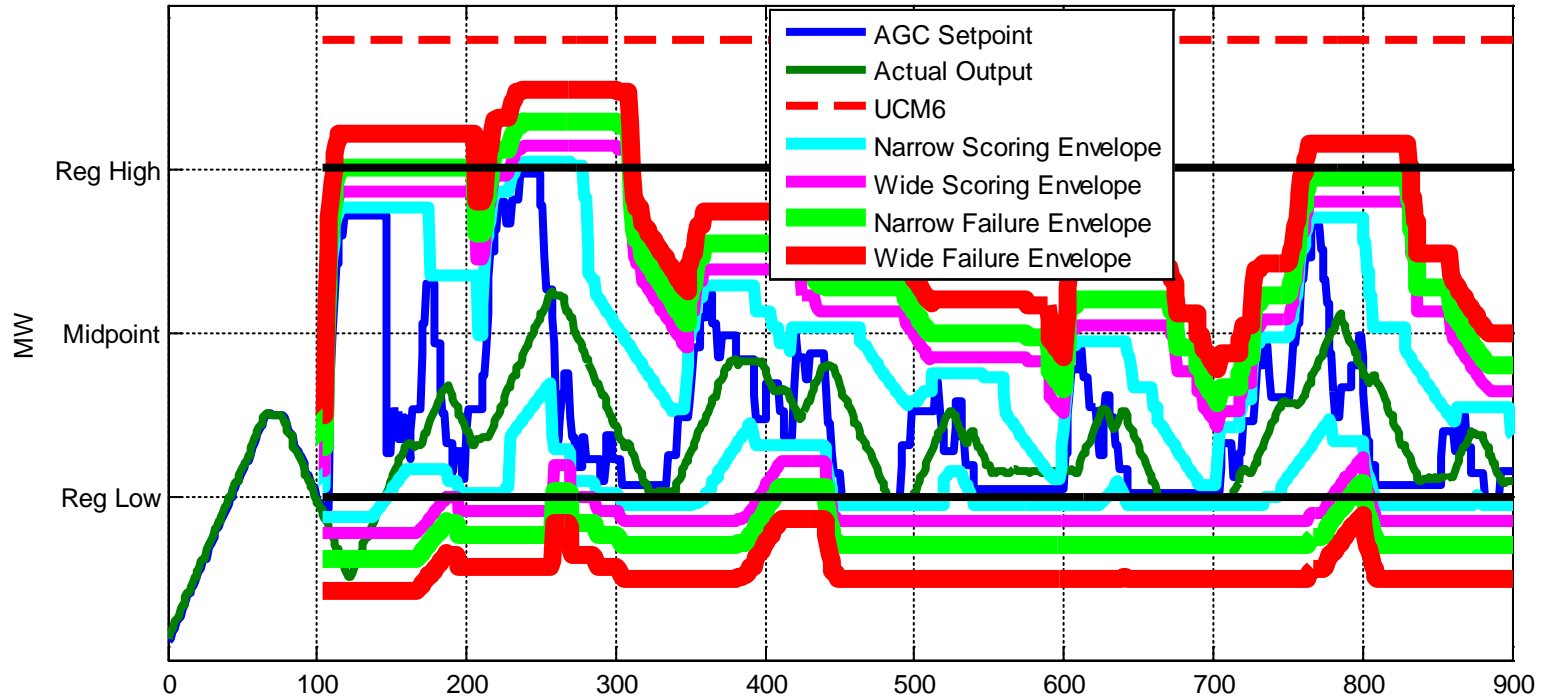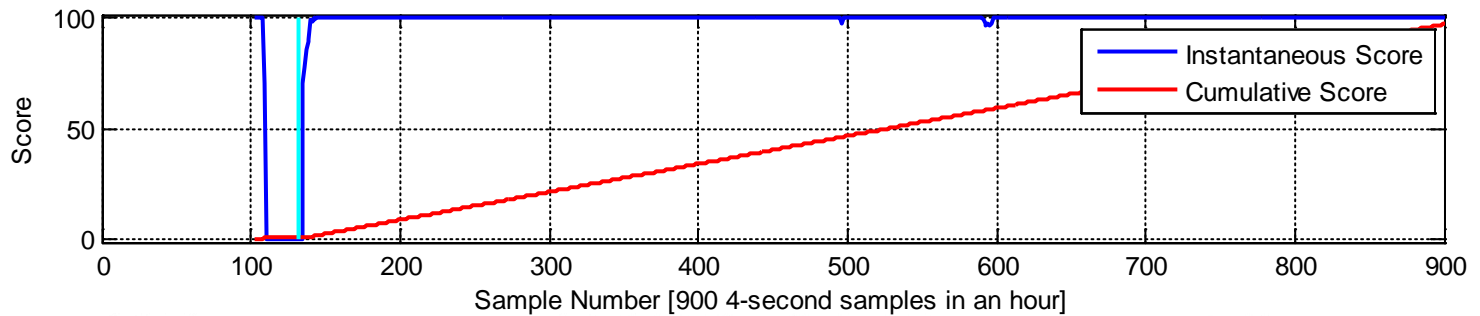
Example for ENT

Example for ENC

Questions