

Frequency Response (Step / Ramp test)



Ian Nuttall

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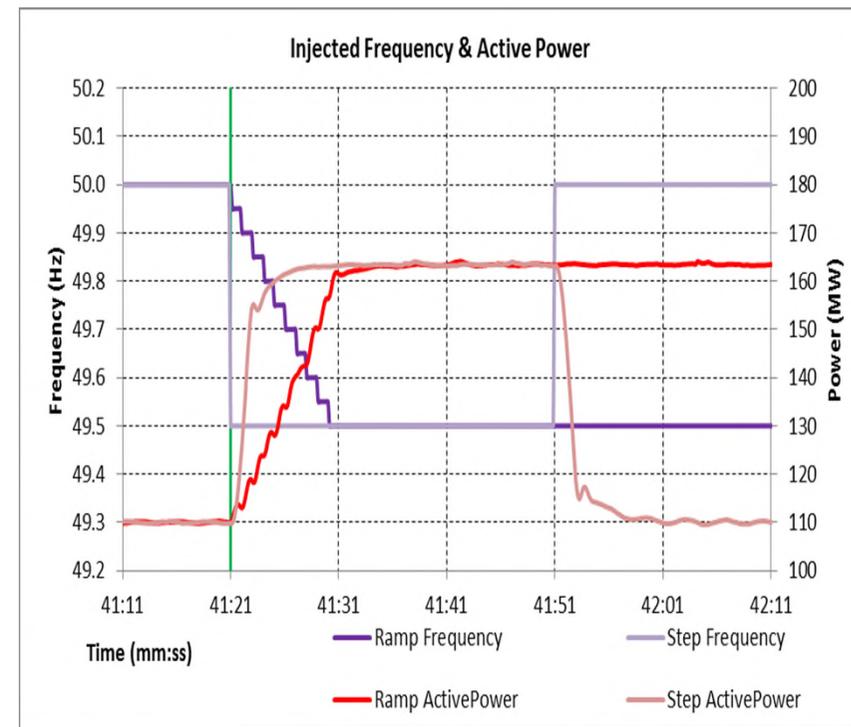
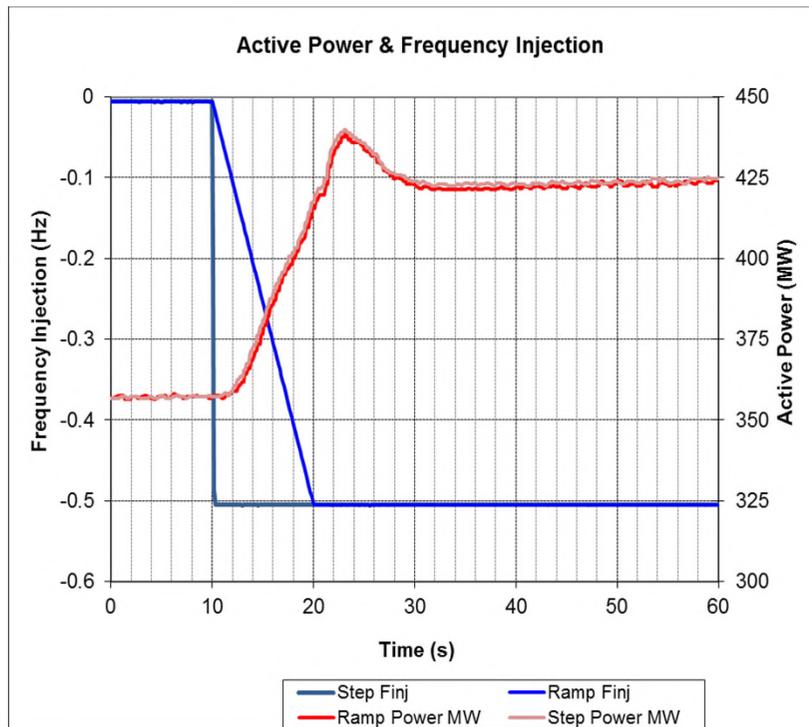
Grid Code Requirement

- Response Capability confirmed by site testing
 - Ramps determine Primary, Secondary and & High values
 - Step tests confirm robustness of control
 - LFSM tests covered by (BC2/4)
 - Load rejection tests (BC1/3) covers Islanding
- Assessment of compliance is achieving a minimum of 10% of RC change in 10 seconds
 - Currently assessed using +/-0.5Hz ramp over 10s between 55% and 80% load as per CC.A.3.1

RfG Requirement Article 15

- Article 15 2. (d) gives FSM requirement
 - (d)(iii) indicates the capability is assessed against a step change in frequency
 - Capability percentage is based on $\Delta P/P_{\max}$ which could be greater than Registered Capacity (RC)
 - Assessment is based on step instead of ramp injection
- Aim is minimal change to current approach to comply.
 - Service delivery for Primary, Secondary and High Frequency response remain based on ramp tests

-0.5Hz Step & Ramp test (CCGT & Wind)



+0.5Hz Step & Ramp test (CCGT & Wind)

