Demand Response Capacity Performance
Measurement proposed change:
Implementation plan

DRS
11/11/2016
Current Capacity compliance
– measurement of load reductions

- **Summer (June – September)**
  - FSL (firm service level)
    - PLC – (Load * Line Loss Factor)
  - GLD (guaranteed load drop)
    - Lessor of FSL or (CBL – load) * line loss factor
- **Non-summer (October through May)**
  - (CBL – load) * line loss factor
- **CBL** – customer baseline, which represents what load would have been if customer did not reduce load (measure real time load reduction).

Load Reduction used to determine penalties or bonus payment
• CSP determines Annual nominated capacity MWs with summer vs non-summer FSL
  – Annual nominated capacity = PLC – [FSL(summer) * line loss factor)
  – Winter FSL * line loss factor = (Winter Peak Load * line loss factor * Winter Weather Adjustment Factor) – Annual Nominated Capacity

This is more consistent with summer FSL approach
Proposed measurement change (cont’)

• Customer Winter Peak Load
  – PJM publishes winter 5 CP days (Dec/Jan/Feb)
  – CSP (or EDC) calculates Customer Winter Peak Load = customer’s peak demand on PJM Winter 5 CP days from 6am through 9pm (CP availability window) and calculate average the 5 values.
  – Customer Winter Peak Load based on Delivery Year – 2
    • Can be calculated at same time PLC is determined.

• Winter Weather Adjustment Factor (zonal)
  – Zonal Weather Normalized Winter Peak / Zonal Average of 5 CP Loads in Winter
  – PJM calculates and applies during capacity nomination on the registration
What is impacted by proposed change?

- **Capacity Performance Registrations**
  - Registration
    - CSP must input Customer specific Winter Peak Load ("WPL")
    - Nomination is capped at lower of PLC and Winter Peak Load
    - Winter FSL is calculated based on inputs
  - Non-Summer event capacity compliance
    - November - April (instead of October – May)
    - Load Reduction based on Winter Peak Load instead of CBL

- **Other Registrations (Economic, LDR, XDR, ADR)**
  - No impact
    - Not eligible for bonus payment in 17/18 (transition year)
      - When eligible for bonus payment then will need PLC for summer and WPL for non-summer.
Typical Registration time line

• Apr 2016
  – PJM publishes Winter 2015/2016 (Dec 2015, Jan/Feb 2016) 5 CP days
  – PJM publishes Zonal Winter Weather Adjustment Factor
• Oct 2016
  – PJM publishes Summer 2016 5 CP days/hours
• Jan 2017
  – EDC distributes PLC for 2017/2018 based on summer load in 2016
  – CSP calculates Customer Winter Peak Load based on Winter 2015/2016 (Dec 2015 and Jan/Feb 2016)
• Jan – May 2017
  – CSP registers DR for 2017/2018 DY
• PJM intends to file for changes to become effective for 17/18 DY
  – PJM winter CP days and zonal winter weather adjustment factors are published with meeting material
• If possible, CSPs should wait to submit CP registrations until there is more clarity on filing
• If registration need to be submitted prior to FERC decision then submit under existing process and PJM will need to augment process after decision
  – CSP to submit WPL
  – PJM to determine impact to nominated MW and determine non-summer FSL

Expect manual process to firm up CP registrations if FERC approves changes
• Compliance example
• Q&A
• DR Registration example for summer capability only customer and winter capability only customer
### DR Resource with Customer Registrations shown below

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<td>5</td>
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<td></td>
<td><strong>50.4</strong></td>
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**Column**
1. Summer PLC based on the current process
2. Summer FSL selected by customer considering Winter Peak Load to result in the same Nominated DR Value in summer and winter
3. Winter Peak Load = customer peak on 5 winter CP days from HE7 through HE21 (Capacity Performance DR availability requirement) for Dec/Jan/Feb
4. Winter Weather Adjustment Factor published and applied by PJM = Weather Normalized Winter Peak/Actual Winter Peak

**Additional Notes**
Capacity Reduction will be used for Add Back in Summer and Non-summer periods
Winter Peak Load is adjusted up for transmission and distribution line loss factor
Winter load reductions may not exceed Winter Peak Load.
Load has already been grossed up for losses
### Example (event measurement)

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• **Q:** Is there a limit on load reductions?
  – **A:** Summer load reductions are limited to PLC and non-summer load reductions are limited to Weather Adjusted Winter Peak Load

• **Q:** Will this proposed measurement method replace the CBL method for non-summer capacity compliance assessment?
  – **A:** Yes

• **Q:** Will EDCs calculate and distribute Winter Peak Load as part of PLC calculation & distribution process?
  – **A:** Need to discuss

• **Q:** How do I calculate the Customer Winter Peak Load?
  – Take the customer’s peak load from 6am through 9pm for each of the 5 PJM Winter Peak days and average the 5 values.
CSP must ensure that the sum of nominated MWs on all registrations reflects resource capability for the entire year for required hours.

<table>
<thead>
<tr>
<th>eRPM resource</th>
<th>Registration</th>
<th>EDC Acct #</th>
<th>Summer Capability (MW)</th>
<th>Winter Capability (MW)</th>
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10 MW is annual capability

PJM will allow locations to be aggregated on the same registration if they have "season only" capability.