Capacity Market Performance Penalties: EFORp & Peak Hour Period Availability

GESTF
May 21, 2014
The Equivalent Forced Outage Rate Family

- Equivalent Forced Outage Rate (EFOR) is the historical rate at which a generator will fail completely or in part, *irrespective of system need*
- Equivalent Forced Outage Rate Demand (EFORd) is the probability a generator will fail completely or in part, *when needed by the system*
- Equivalent Forced Outage Rate Peak (EFORp) is the actual rate in which a generator failed completely or in part, *during pre-defined peak hours*
Equivalent Forced Outage Rate Peak (EFORp)

EFORp actual rate in which a generator failed completely in part, during predefined peak hours

Equivalent Forced Outage Rate $\text{Peak} =$

\[
\text{(Full Forced Outage Hours during pre-defined peak hours} + \text{Equivalent Derated Hours during predefined peak hours)} / \text{(Service Hours during predefined peak hours } + \text{Full Forced Outage Hours during predefined peak hours })
\]
<table>
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<tr>
<th>Assessment</th>
<th>Purpose</th>
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<td>RPM Commitment Compliance</td>
<td>Determines if sufficient unforced capacity on resource during DY to meet its RPM commitments</td>
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<tr>
<td>Peak-Hour Period Availability</td>
<td>Measures if generation resource was available during critical peak-hour periods during DY</td>
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<td>Summer/Winter Capability Testing</td>
<td>Determines if generation resource demonstrated its ICAP commitment amount through summer and winter testing</td>
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<td>PSM Compliance</td>
<td>Determines if generation resource took an unapproved planned or maintenance outage during peak season period</td>
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<td>Load Management Event Compliance</td>
<td>Determines if committed demand resource or certified ILR resource reduced load during a PJM-initiated LM event</td>
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<tr>
<td>Load Management Test Compliance</td>
<td>In the absence of a PJM-initiated LM event, this assessment determines if committed demand resource or certified ILR resource reduced load during a CSP-initiated test</td>
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• PJM will measure generation availability performance during peak load periods
• Defined Peak Hours:
  – Summer: June – August non-holiday weekdays 15:00 – 19:00
  – Winter: January – February non-holiday weekdays 8:00-9:00 and 19:00 – 20:00

  Total number of hours is approximately 500 hours (varies)
• EFORp determined using the following sets of hours from the defined peak periods:
  – Forced outage hours when needed (excluding OMC)
  – Forced partial outage hours (excluding OMC)
  – Service Hours
• Provides a mean to assess whether committed generation resources are available at expected levels during critical peak periods
  – Credits or charges resource providers to the extent that they exceed or fall short of expected availability
• “for single fueled natural gas-fired units, failure to perform during the winter Peak-Hour Period shall be excused for the purposes of this section (10: Peak Hour Period Availability Charges and Credits) if the Capacity Market Seller, or Locational UCAP Seller, as applicable, can demonstrate to the Office of the Interconnection that such failure was due to non-availability of gas supply to the unit”
• The total estimated Daily Peak-Hour Period Availability Charges before the January outage events were $45,586 and including January 2014 increased to $112,388.