Demand Response Capacity Performance Measurement proposed change

SCSTF

7/11/16

- ## 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

- CBL used in non-summer to ensure loads with lower winter load still need to reduce because lower load already incorporated in IRM study.

- Customer may have winter load but load may already be down when dispatched by PJM.

- Summer measurement focused on ensuring load is below a certain value while non-summer measurement focused on real time load reduction.

- CSP determines Annual nominated capacity MWs with summer vs non-summer FSL
  - Annual nominated capacity = PLC – [FSL(summer) * line loss factor)

    Same as today

  - 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 and will address issues/interest identified

- ## Customer Winter Peak Load
  - PJM publishes winter 5 CP days (Dec/Jan/Feb)
  - CSP (or EDC) calculates Customer Winter Peak Load = customer average peak demand on Winter 5 CP days during DR CP availability window (6am through 9pm)
  - Winter Peak Load based on Delivery Year – 1 winter unless data is not available when registration is submitted, otherwise use Delivery Year – 2 winter
    - Example
      - if registration is submitted in jan before 3rd IA then use Delivery Year – 2.
      - If EDC will calculate and does at same time PLC is determined then use Delivery Year – 2.

- ## Winter Weather Adjustment Factor
  - PJM Weather Normalized Winter Peak / PJM Actual Winter Peak
  - PJM calculates and applies during capacity nomination on the registration

DR Resource with Customer Registrations shown below								
		1	2	(3) = (1) -(2)	(4)	(5)	(6) = (4) *(5)	7 = (6) - (3)
Customer #	Customer Load Profile	Summer PLC (MW)	Summer FSL (MW)	Nominated DR Value (MW)	Winter Peak Load (MW)	Winter Weather Adjustment Factor	Weather Adjusted Winter Peak Load (MW)	Winter FSL (MW)
1	Winter load lower than summer load	10	5	5	8	1.05	8.4	3.4
2	Winter load higher than summer load	10	5	5	12	1.05	12.6	7.6
3	Winter load equal to summer load	10	5	5	10	1.05	10.5	5.5
4	Summer only DR (A/C Cycling)	10	4	6	6	1.05	6.3	0.3
5	Winter only DR (Ski Load)	1	0	1	12	1.05	12.6	11.6
Resource		41	19	22			50.4	28.4

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
4	Winter Peak Load = customer peak on 5 winter CP days from HE7 through HE21 (Capacity Performance DR availability requirement) for Dec/Jan/Feb
5	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

DR Resource with Customer Registrations shown below

Customer #	Customer Load Profile	1 Summer PLC (MW)	2 Summer FSL (MW)	(3) = (1) -(2) Nominated DR Value (MW)	(6) = (4) *(5) Weather Adjusted Winter Peak Load (MW)	7 = (6) - (3) Winter FSL (MW)	Summer Event		Winter Event	
							(8) Load (MW	(9) = (1) - (8) Load Reduction (MW)	(10) Load (MW	(11) = (6) - (10) Load Reductio n (MW)
1	Winter load lower than summer load	10	5	5	8.4	3.4	5	5	5.5	2.9
2	Winter load higher than summer load	10	5	5	12.6	7.6	5	5	6	6.6
3	Winter load equal to summer load	10	5	5	10.5	5.5	5	5	5	5.5
4	Summer only DR (A/C Cycling)	10	4	6	6.3	0.3	3	7	6.3	0
5	Winter only DR (Ski Load)	1	0	1	12.6	11.6	1	0	5.6	7
Resource		41	19	22	50.4	28.4		22		22

- Q: Is there a limit on load reductions?
  - A: Summer load reductions are limited to PLC and nonsummer 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