

Agenda Item 3.0
PSPC Meeting 277
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DRAFT






Conceptual ICR (LOLE) vs. Operational Capacity Analysis

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Objectives

- Given the same set of resource mix
 - Same MW and characteristics
 - Illustrate components of probabilistic and deterministic metrics
- **Difference Between Criterion and Capacity Margin Metric**
 - Probabilistic analysis sets criterion for resource adequacy
 - Firm load shedding,
 - No more than 0.1 days/year
 - Operational Capacity Analysis evaluates Pre-OP4 capacity margin
 - Positive margin is good
 - Negative margin illustrates need for non-capacity resources

Conceptual ICR (LOLE) vs. Operational Capacity Analysis (MW)

Operation and Assessment Point	Variable	Probabilistic Analysis		Operational Capacity Analysis for Specific System Condition	
	[1] Load	a distribution		peak load (50/50 and 90/10)	28,160 (50/50) 30,110 (90/10)
	[2] Operating Reserve	deterministic	200	deterministic	2000
Load plus operating reserve	[3]=[1]+[2]	a distribution		deterministic	30,160 (50/50) 32,110 (90/10)
	[4] Resources used for both analysis	Generating resources plus DR (resources operating before OP4): Total resource = 29,375 MW			
	[5] Maintenance	not allowed in the model	0	assumed none	0
	[6] Forced outage	a distribution		historical average (i.e. expected value, no uncertainty)	2,100
Expected available pre-OP4 resources	[7]=[4]-[5]- [6]	a distribution			27,275
Operational Capacity Analysis Metric Showing Capacity Margin (surplus(+)) or shortage(-): [8] = [7] - [3]					-2,885 (50/50) -4,835 (90/10)
Begin OP4 Actions (excluding operating reserve)	[9] Deplete operating reserve	deterministic	0		
	[10] Voltage reduction	deterministic	651		
	[11] Tie Benefit	EFORd assumed	3,415		
Expected available resources before Firm Load Shedding	[12]=[7]+[9]+ [10]+[11]	a distribution			
Probabilistic Analysis Criterion Point (Firm Load Shedding): probability of firm load shedding, [13] = convolution of [3] and [12]		Expected value	LOLE=0.1		3