

CIRs for ELCC Resources: Supplemental Education Material

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- Additional education was requested to better understand the 2nd bullet on slide 9 of the 5/21/2021 presentation on CIR principles
 - *Basing transmission needs on average resource outputs (as is the case with wind and solar today) may prevent the resources from achieving their full utilization*
- Stakeholders wanted to better understand how deliverability of a resource's capacity and energy components are examined
- PJM has developed a few examples to better illustrate these concepts

- Examples that follow show generator deliverability maximum dispatch levels for a 100 MW MFO generator
 - Summer, Winter, Light Load
 - Single contingencies, common mode outages
- Maximum dispatch levels are the maximum amount that the unit can be ramped during the generator deliverability study

Example 1: 100 MW Wind Resource Requesting 13 MW CIRs

	Contingency	Maximum
Period	Type	Dispatch (MW)
Summer	Single	13
Winter	Single	80
Light Load	Single	80
Summer	Common Mode	100
Winter	Common Mode	100
Light Load	Common Mode	80

Example 2: 100 MW Solar Resource Requesting 38 MW CIRs

	Contingency	Maximum
Period	Type	Dispatch (MW)
Summer	Single	38
Winter	Single	10
Light Load	Single	0
Summer	Common Mode	100
Winter	Common Mode	100
Light Load	Common Mode	0

**Example 3: 100 MW Natural Gas Resource Requesting
100 MW CIRs**

Period	Contingency Type	Maximum Dispatch (MW)
Summer	Single	100
Winter	Single	100
Light Load	Single	As needed
Summer	Common Mode	100
Winter	Common Mode	100
Light Load	Common Mode	As needed

**Example 4: 100 MW Battery Resource Requesting
10 MW CIRs**

Period	Contingency Type	Maximum Dispatch (MW)
Summer	Single	+10
Winter	Single	+10
Light Load	Single	+/- 100
Summer	Common Mode	+/- 100
Winter	Common Mode	+/- 100
Light Load	Common Mode	+/- 100

- Observations
 - For summer single contingencies generator deliverability testing only occurs at CIR level
 - Energy component is examined under common mode deliverability for summer, winter and light load and may be examined under single contingencies for winter and light load

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