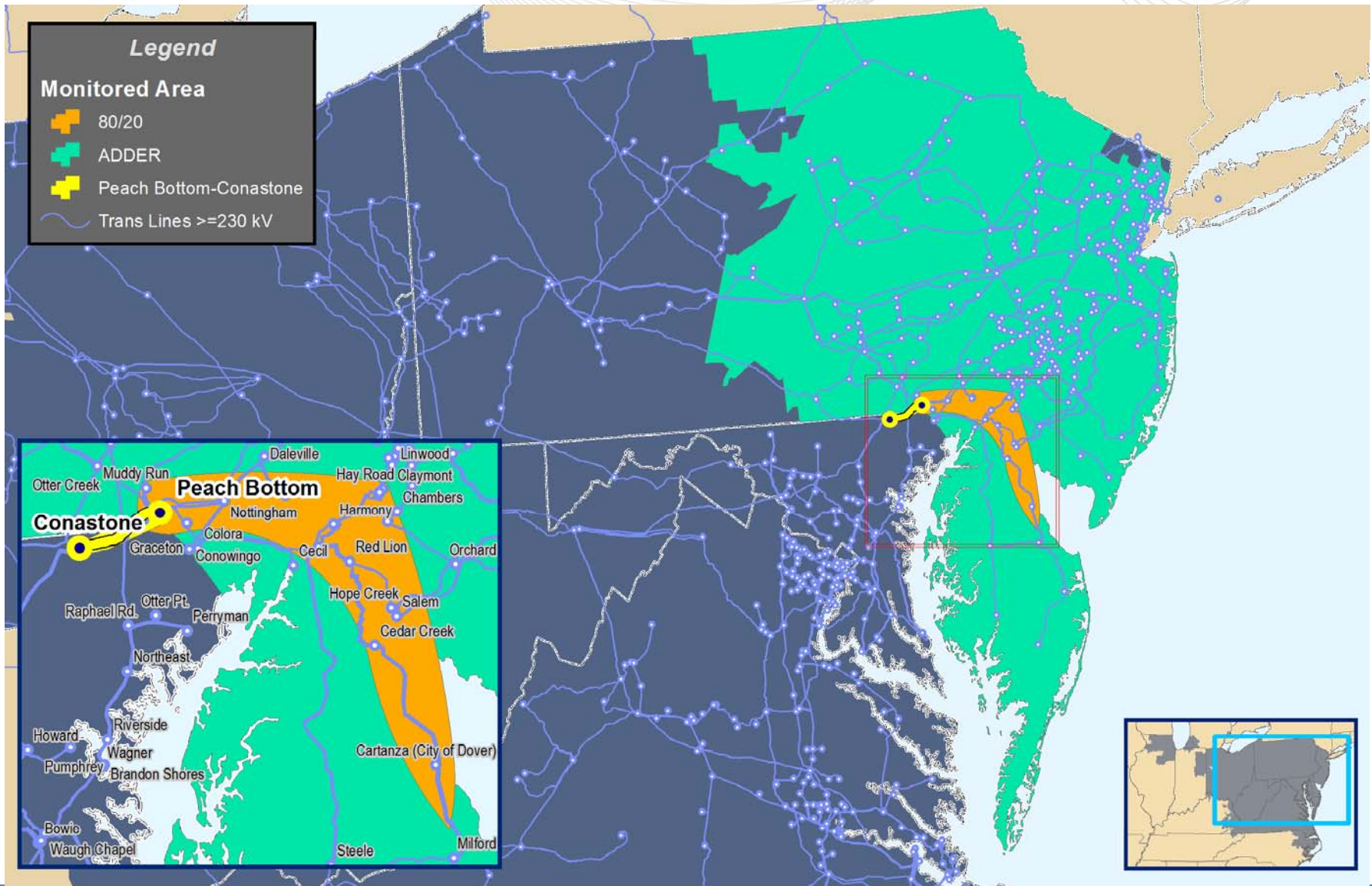




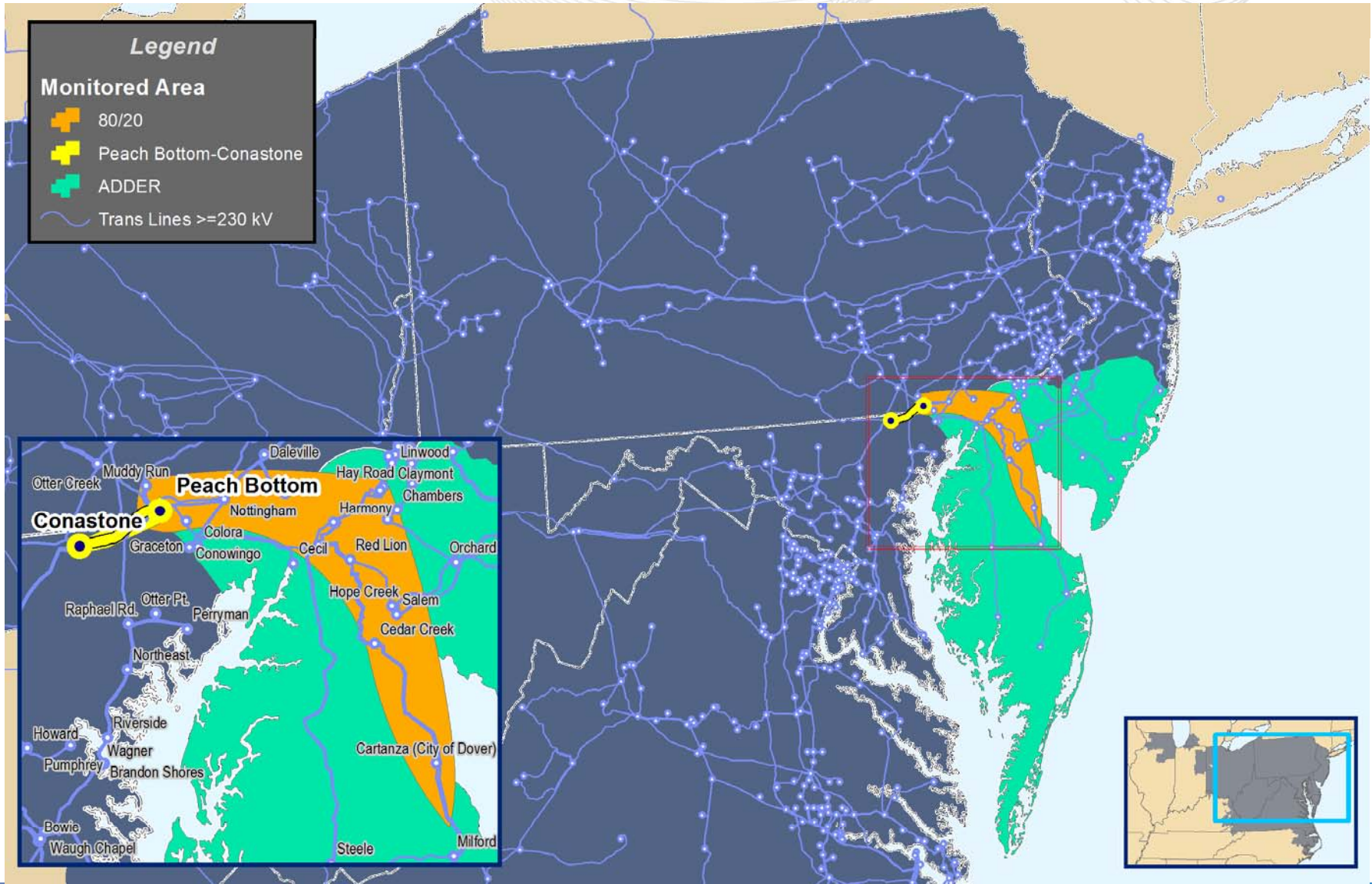
# Generator Deliverability Test Methods Proposed Change

Mark Sims  
Planning Committee  
1/12/2012

# Example Potential Generation Deliverability Dispatch (Existing Method)



# Example Generation Deliverability Dispatch (Proposed Method)

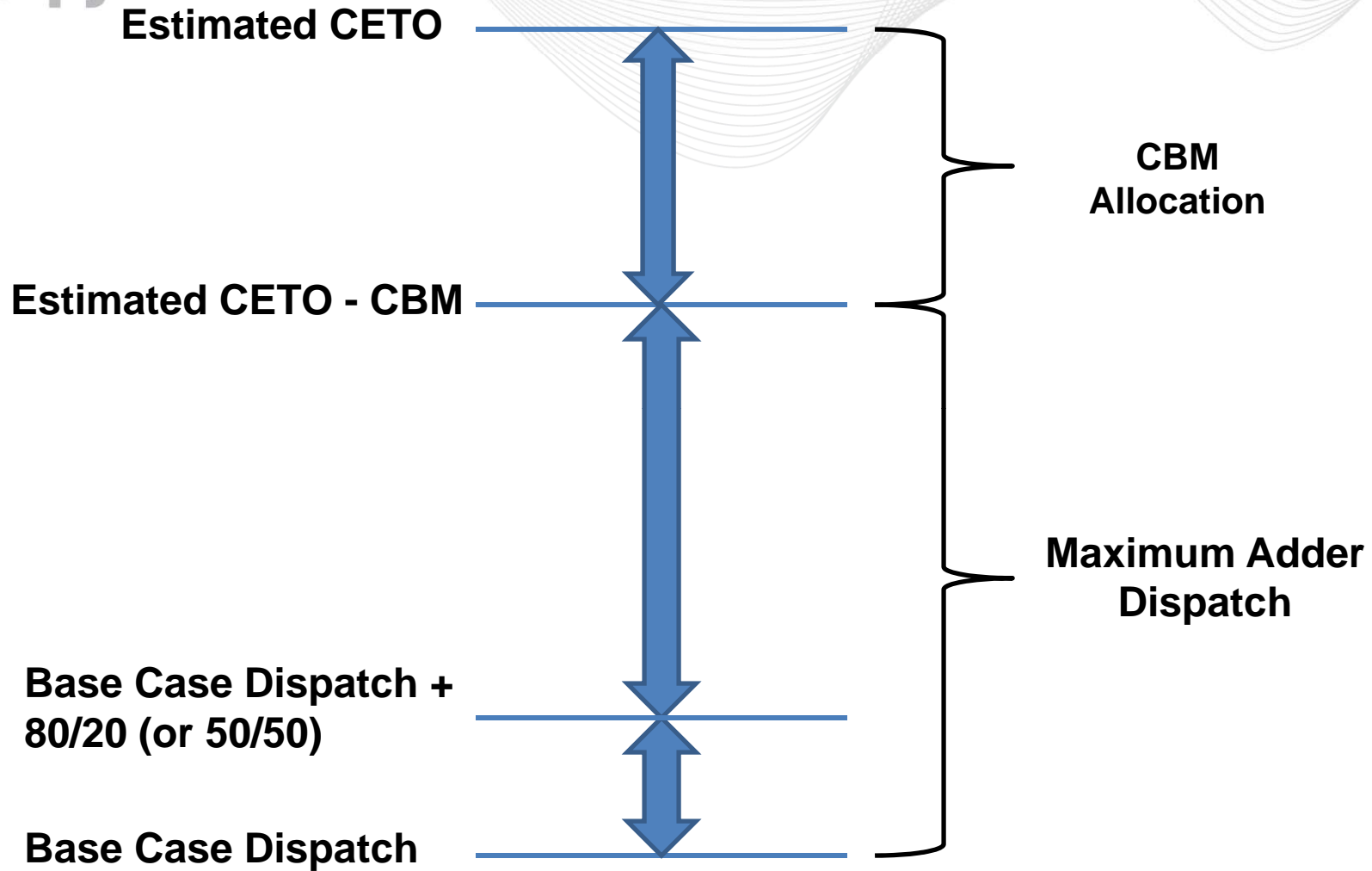


- Limit the “Adder” contribution based on an estimated CETO for the receiving end area
- Calculated dynamically for each flowgate
- Function of load and generation in receiving end area
  - Load busses with a positive impact on flowgate loading included in the area
  - Generation with a negative impact on flowgate loading included in the area

$$\text{Estimated CETO} = 1.08 * (\text{Bus Loads} + \text{Losses} - \text{Diversity} - \text{DR}) \\ - (1 - 1 * \text{EEFORD}) * \text{ICAP} + \text{Largest Unit}$$

- Capacity Benefit Margin (CBM):
  - CBM is reserved to import capacity assistance from external areas under emergency conditions
  - Currently 3,500 MW per the Reliability Assurance Agreement
- CBM allocation for a defined receiving end area is based on the share of PJM load in the area
- CBM allocation will be used to offset Adders when  
**Import level  $\geq$  Estimated CETO – CBM allocation**
- CBM contribution will NOT be included assuming the usage of CBM will not contribute to the overload.

# CBM Usage in Adder Dispatch



Sensitivity: Screen the facilities above 80% loading in the baseline deliverability study before and after the proposed change

**Table 1: Proposed method impact to baseline**

<i>Category</i>	<i># of Facilities</i>	<i>Percentage of Facilities Above 80%</i>
Decreased Loading %	53	11%
No Change	346	72%
Increased Loading %	50	10%
New above 80% screen	7	1%
Loading dropped below 80% screen	31	6%

Observation: Of the baseline facilities that increased in loading, the number of facilities and average percentage increase is small

**Table 2: Increased Baseline Loadings due to Proposed Method**

<i>Facility Voltage</i>	<i># of Facilities</i>	<i>Average Percentage Increase</i>
345/345	2	2.4%
230/230	6	0.5%
138/138	27	3.9%
115/115	8	8.4%
69/69	2	0.3%
500/230 (Transformer)	1	0.02%
345/138 (Transformer)	4	3.4%



## Sensitivity Result – Baseline Study

Observation:

**Table 3: New potential violations (over 100% loading) with proposed method for baseline study**

<i>TO Area</i>	<i>Facility Voltage</i>	<i># of Facilities</i>
APS	138/138	3
AEP	138/138	3
ComEd	138/138	1
	345/138	1
Penelec	115/115	3
Dominion	115/115	1



## Sensitivity Result – Interconnection Queue Study

Sensitivity: Screen the facilities above 80% loading in the interconnection queue deliverability study before and after the proposed change

**Table 3: Proposed method impact to interconnection queue study**

<i>Category</i>	<i># of Facilities</i>	<i>Percentage of Facilities above 80%</i>
Decreased Loading %	291	30%
No Change	537	54%
Increased Loading %	39	4%
New above 80% screen	3	<1%
Loading dropped below 80% screen	123	12%

Observation: Of the baseline facilities that increased in loading, the number of facilities and average percentage increase is small

**Table 4: Increased Queue Study Loadings due to Proposed Method**

<i>Facility Voltage</i>	<i># of Facilities</i>	<i>Average Percentage Increase</i>
345/345	9	3.32%
230/230	5	0.12%
138/138	13	6.42%
115/115	4	15.01%
69/69	3	3.25%
765/345 (Transformer)	1	6.45%
345/230 (Transformer)	2	4.21%
345/138 (Transformer)	2	0.96%

**Table 6: Potential new criteria violations (over 100% loading) with proposed method for queue study**

<i>TO Area</i>	<i>Facility Voltage</i>	<i># of Facilities</i>
AEP	69/69	1
	765/345	1
ComEd	138/138	2
Penelec	230/115	1
	115/138	1
PSEG	230/230	1
Dominion	230/230	1

- Request Planning Committee endorsement at February 2012 meeting
- MRC approval