New York ISO
Independent System Operator

Implement a TSL in the IRM Tan45 process: Initial Results

Ying Guo

ICS

May 5, 2021

Process details for the results found on the following slides

1. Begin with the 2021 IRM Final Base Case (IRM = 20.7%)
2. Return all locations to their as-found condition (i.e., remove all shifting that occurred during the Tan45 that produced the 20.7% IRM)
3. Set Long Island equal to its 2021-2022 Capability Year TSL of 102.9%
4. Create a Tan45 curve between NYCA and Zone J
5. Identify the Tan45 inflection point of the curve developed in step 4
6. Round values from the curves to the nearest 0.1 percentage points
7. Ensure the Tan45 point from step 6, with LI set to its TSL, satisfies the 0.1 LOLE criterion the combination. Round results upward by 0.1 percentage point increments if necessary to achieve the LOLE criterion

Results

- The NYCA-NYC Tan45 curve is shown below

NYC [IRM = 20.9%, LCR = 80.0%]

$y = 0.4598x^2 - 20.256x + 302.52$
$R^2 = 0.9996$

Locational Capacity Requirement (%)
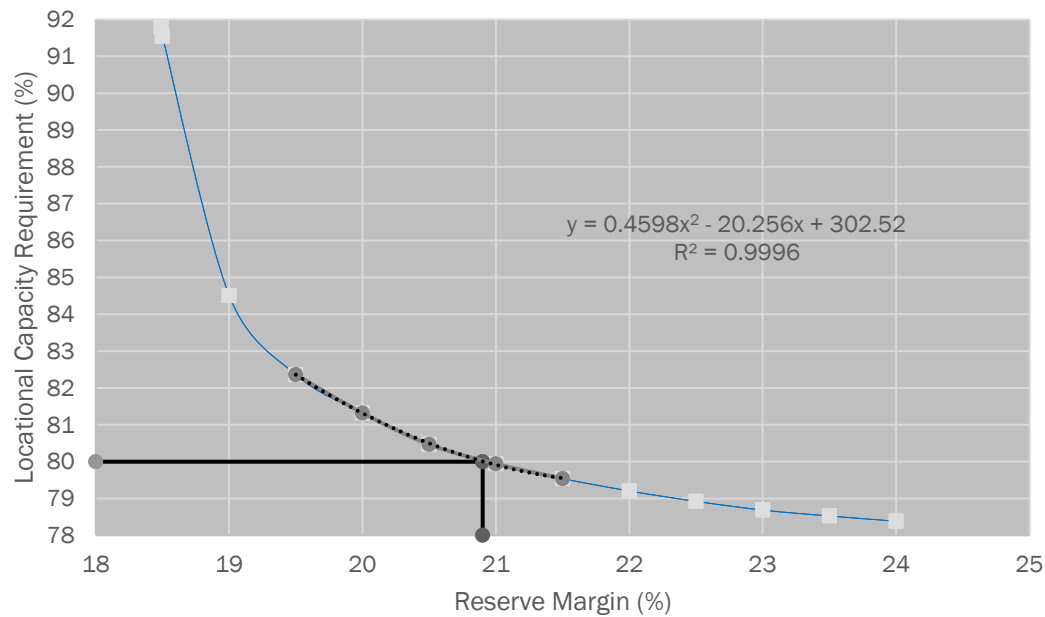
Reserve Margin (%)

Results, cont'd

	NYCA	NYC	LI
IRM FBC	120.7%	82.6%	95.1%
IRM FBC+LI @ 102.9%	120.9%	80.0%	102.9%

The IRM increased from the 2021 FBC value and the NYC required reserve margin decreased upon incorporating TSLs using the process outlined in the previous slides.

The table at right shows the combinations of IRM and NYC reserve margins that satisfy 0.1 LOLE. As a result of holding LI fixed at 102.9%, the Tan45 point on the NYCA-NYC curve shifted towards a lower NYC required reserve margin. In this case, additional capacity was held in LI above the original Tan45 value and the NYC required reserve margin fell. The base case IRM value increased by 0.2% to 120.9%.

TSL Case		
RM	J LCR	K LCR
18.49	91.792	102.900
18.50	91.542	102.900
19.00	84.509	102.900
19.50	82.363	102.900
20.00	81.322	102.900
20.50	80.467	102.900
21.00	79.944	102.900
21.50	79.541	102.900
22.00	79.205	102.900
22.50	78.922	102.900
23.00	78.687	102.900
23.50	78.526	102.900
24.00	78.384	102.900

New York ISO

Results, cont'd

- This is a graphs shows the NYCA-NYC Tan45 curves for both 2021 FBC and TSL case.

NYCA-NYC Tan45 Curves Comparison
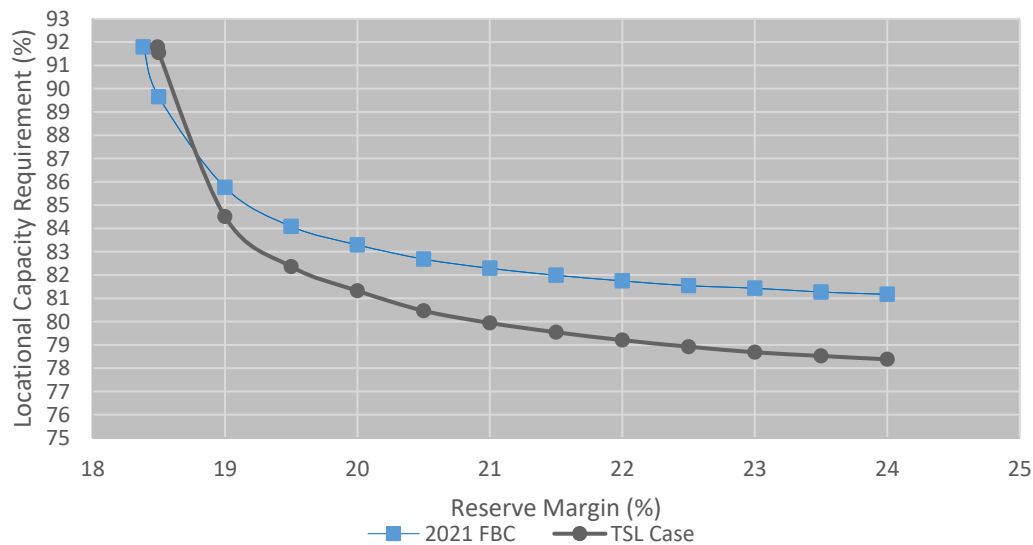
Two Additional Test Cases

	NYCA	NYC	LI
IRM FBC	120.70%	82.60%	95.10%
IRM FBC+LI @ 102.9%	120.90%	80.00%	102.90%
IRM FBC+LI @ 98%	120.90%	81.10%	98%
IRM FBC+LI @ 98% (keep LI higher than 98%)	120.90%	81.10%	98%

New York ISO

Results, cont'd

IRM FBC+LI @ 98%		
RM	**J LCR**	**K LCR**
18.77	91.792	98
19	86.735	98
19.5	83.761	98
20	82.439	98
20.5	81.567	98
21	81.032	98
21.5	80.61	98
22	80.289	98
22.5	80.004	98
23	79.79	98
23.5	79.612	98
24	79.434	98
24.5	79.292	98

IRM FBC+LI @ 98% (keep LI higher than 98%)		
RM	**J LCR**	**K LCR**
18.38	91.792	112.404
18.5	89.656	106.648
19	85.758	99.789
20	82.439	98
20.5	81.567	98
21	81.032	98
21.5	80.61	98
22	80.289	98
22.5	80.004	98
23	79.79	98
23.5	79.612	98
24	79.434	98
24.5	79.292	98

New York ISO

Next steps

- **Receive feedback on today's presentation**
- **Continue to address the other action items in the NYSRC whitepaper scope**
  - Investigate the methodology that the NYISO uses in setting the operational locational floors including the assumptions used. Compare it to the preliminary minimum locational requirements found in the IRM study.
  - Examine if a minimum operational limit is appropriate for the IRM analysis, and if so, how it could be incorporated into the setting of the IRM

New York ISO

Questions?

New York ISO