Criteria/Process for Identifying New Capacity Zones

David J. Lawrence / James Scheiderich

New York Independent System Operator

NYISO Installed Capacity Working Group

10/29/2010

Topics Covered in This Presentation

Proposed process steps and initial criterion:

- *Identification of potential New Capacity Zone (NCZ), including proposed criteria for identifying new capacity zones*
- *Analysis, comments, and recommendations*

- NYISO reply to stakeholder comments at and after 10/12/10 ICAPWG meeting
  - *Two sets of written comments were received (Multiple Intervenors, LIPA) and are posted with other materials for this meeting*
  - *Questions raised at the 10/12 ICAPWG*

Process: Overview

- The NYISO envisions a two-step process
  - *Step One: Identification of potential new zone(s)*
    - Zone(s) satisfying established criterion in this step will proceed to Step 2
  - *Step Two:*
    - Independent consultant analysis:
      - Demand curve parameter criteria
      - Evaluation of need for mitigation measures for identified potential new zone(s)
    - Stakeholder input and comments on drafts
    - MMU review
    - NYISO recommendation, including proposed tariff revisions (*e.g.*, to define new Locality)
    - Stakeholder comments on recommendation to NYISO Board
    - NYISO Board decision on whether to proceed with FERC filing to create new capacity zone(s)

Process: Overview (cont'd)

- Step One may identify more than one region as satisfying the Class Year criterion for a NCZ. For simplicity, the remaining slides on process focus on steps to create a single NCZ, but the same process would be applied if multiple zones were identified.

Process Step 1 - Identification of Potential New Capacity Zone

- The NYISO proposes to use the Class Year Deliverability Test results as the indicator of whether or not a new capacity zone should be considered further.
- While the ratio test (identifying available supply-to-load capability) and CONE test can be additional indicators of the need for new capacity zones, the NYISO proposes that those tests are subsumed by the detailed demand curve parameter analysis proposed as the second process step.
- Identifying one or more undeliverable zones that satisfy the CY Deliverability Test criterion would trigger the second process step.

New Capacity Zone Criterion

The NYISO proposed criterion will examine if room on each highway interface is at least the MW amount of NYCA new entrant peaking unit (as identified in the then most recent Demand Curve Report).

- This criterion would use the Class Year Deliverability test as its basis.
- Testing would be based on the ATBA-Deliverability Class Year Study case.
- If sufficient additional transmission capacity as identified in the ROS Highway Capacity Deliverability Test was available to award CRIS rights for the new entrant peaking unit, further action towards development of a new Capacity Zone would not be required.
  - *Testing would be capacity based on unit type and at regional EFORd (UCAP)*
  - *For example, using the CY09 ROS EFORd of 5.78%, 2 7FAs (in Zone F) would need 368.8 MW of transfer capability to make it deliverable for all of ROS*
- If sufficient transfer capacity was not available at the ATBA-Deliverability level, step two of the process would be triggered.

New Capacity Zone Criterion (cont'd)

The next slide presents CY09-10 ATBA-D case results.

- The NYISO proposes that initially, due to implementation issues, the most current available Class Year ATBA-D case results would be examined
  - *At this time that would be CY10*
- In subsequent Demand Curve Reset periods, the Class Year results closest in time, as is practicable, to any implementation of a new Capacity Zone would be used.
- As can be seen in the following examples, even if delivery of Zone F entry peakers were tested, it appears that there is insufficient additional transmission capacity.
  - *Since sufficient transfer capacity is not available, the process of developing a new capacity zone would be triggered.*

New Capacity Zone Criterion
Example: CY O9 and CY10 Deliverability within ROS

CY09

Deliverability Test	Exporting Zone(s)	Importing Zone(s)	Load (incl. LFU and losses)	Base Generation Dispatch	Available CRIS	Capacity Derates	Net Available Capacity	FCITC (export limit)	Additional Transmission Capacity (+) or Bottled Generation Capacity (-)
	ATBA								
Dysinger-East	A	BCDEFGHI	2740.9	4071.8	5196.0	282.8	841.4	1607.6	**766.2**
West Central	AB	CDEFGHI	4870.9	4771.5	6004.3	357.8	875.0	2002.4	**1127.4**
Volney-East	ABC	DEFGHI	7945.0	10488.3	13170.9	1285.4	1397.2	2851.0	**1453.8**
Moses-South	D	ABCEFGHI	836.7	1203.7	1888.9	603.4	81.8	1138.9	**1057.1**
Total East/Central I	ABCDE	FGHI	10280.9	12280.8	16436.3	2670.4	1485.1	2521.6	**1036.5**
UPNY-SENY	ABCDEF	GHI	12733.1	16372.1	21072.7	3065.2	1635.4	0.3	**-1635.1**
UPNY-ConEdison	G	HI	2533.9	2801.0	3081.2	217.4	62.8	1532.3	**1469.5**
Millwood-South	GH	I	3220.6	4763.7	5248.1	342.6	141.8	2224.2	**2082.4**

CY10

Deliverability Test	Exporting Zone(s)	Importing Zone(s)	Load (incl. LFU and losses)	Base Generation Dispatch	Available CRIS	Capacity Derates	Net Available Capacity	FCITC (export limit)	Additional Transmission Capacity (+) or Bottled Generation Capacity (-)
	ATBA								
Dysinger-East	A	BCDEFGHI	2740.7	4071.8	5286.0	363.8	850.4	1605.2	**754.8**
West Central	AB	CDEFGHI	4870.7	4771.5	6094.3	438.8	884.0	1991.0	**1107.0**
Volney-East	ABC	DEFGHI	7948.5	10491.8	13260.9	1366.4	1402.7	3091.7	**1689.0**
Moses-South	D	ABCEFGHI	836.7	1203.7	1888.9	603.4	81.8	1139.2	**1057.4**
Total East/Central East	ABCDE	FGHI	10281.8	12284.0	16526.3	2751.4	1490.9	2705.1	**1214.2**
UPNY-SENY	ABCDEF	GHI	12735.9	16375.6	21165.7	3146.6	1643.5	-80.1	**-1723.6**
UPNY-ConEdison	G	HI	2540.4	2808.0	3761.2	256.7	696.5	1428.2	**731.7**
Millwood-South	GH	I	3227.1	4770.7	5928.1	381.9	775.5	2219.2	**1443.7**

Additional New Capacity Zone Criteria

The NYISO proposes two additional criteria for new capacity zones, to be considered as part of Step 2 of the overall process.

- The first is a simple *informative* Ratio Metric
- The second is a CONE comparison for substantially equivalent technology types.

Zone	Capacity (1)	Load (2)	Import[1] (3)	Cap/Load (4)=(1)/(2)	Cap+Imp/Load (5)=((1)+(3))/(2)	Cap/ICR (6)=(1)/(2)*IRM	Cap+Imp/Load MODIFIED (7)	Ratio (7) less ICR (8)	Cap Zone
A	5386	2725	3875	1.98	3.40		3.40	2.22	A
B	911	2131	3500	0.43	2.07		2.07	0.89	B
C	6891	2950	4350	2.34	3.81		3.81	2.63	C
D	1912	577	3667	3.31	9.67		9.67	8.49	D
E	763	1422	10470	0.54	7.90		7.90	6.72	E
F	3780	2271	5950	1.66	4.28	1.41	4.28	3.10	F
G	3087	2477	8250	1.25	4.58		4.58	3.40	G
H	2122	683	7000	3.11	13.36		13.36	12.18	H
I	49	1563	10980	0.03	7.06		5.69	4.51	I
J	9980	11725	5893	0.85	1.35	0.72	1.35	0.17	J
K	6727	5368	1751	1.25	1.58	1.06	1.58	0.40	K
NYCA	41608	33891	2675	1.23	1.31		1.31	0.13	NYCA
G-K	21965	21816	7536	1.01	1.35	0.85	1.35	0.17	G-K
F-K	25745	24087	8036	1.07	1.40	0.91	1.40	0.22	F-K
F w/G-K	3780	2271	3950	1.66	3.40	1.41	3.40	2.22	F w/G-K
G-I	5258	4723	6580	1.11	2.51	0.94	2.41	1.23	G-I

From the RCMS A M2 v2 Report 3/10/2010

For the 2/12/2010 OC meeting

	LF Date	
NYCA	Nov-09	33025
	Sep-09	32976

IRM and LCR	Study	Adopted
NYCA	117.9%	118.0%
NYC	79.6%	80.0%
LI	104.9%	104.5%

Zone J

Import from	
Zone I	4000
PJM	1500
Zone K (max=508)	393
IMPORTS	5893

Zone K

Import from	
Zone I	1290
Zone J	175
NE	286
	1751

Zone F-K

Import from	
Zone E	4850
NE	1686
PJM	1500
	8036

Zone G-I

Import from	
Zone E/F	5150
Zone K	393
NE	600
PJM	0
	6143

Zone I

Import from	
Zone H	8450
Zone J Max=2000	0
Zone K (max=508)	393
	8843

Zone G-K

Import from	
Zone E/F	5150
NE	886
PJM	1500
	7536

F w/G-K

Import from	
Zone E	3150
NE	800
Zone G	0
IMPORTS	3950

NOTES:

1 G-K is the instant issue as the Highway between F and K is seriously congested.

2 F-K is an additional possible Superzone; Zones G-I, F-K and G-K Imports are limited for the modified Ratio.

2 F w/G-K assumes formation of a G-K Cap Zone and since the G-K Cap/ICR Ratio (6) is <1.0, no Import is considered into F from the G-K superzone.

All UDR backed capacity is considered Capacity.

[1] Values taken from A-13 and A-13.1 of the 2010 NYCA IRM Study (bubble diagrams); they were also included in the RCMS document referenced above

CONE Difference Criterion

The NYISO proposes that CONE differences for substantially similar technologies be considered in the formation of any new capacity zone.

- This criterion limits comparisons to within a technology group such as 7FAs *or* LMS100s but <u>not</u> between them.
- Rather than net CONE as has been suggested, CONE goes to the direct cost of adding a new peaker.
  - *Due to the very nature of North to South and West to East flow within NYCA, rational decisions would call for such a unit being built in the Zone with the most offsetting revenues.*
  - *For example, Zone C and Zone F differ in CONE by <1.0% but Zone F has much higher E&AS revenues making it a more desirable location as a merchant plant.*
- The CONE difference, or more appropriately, the lack of it, would inform the decision to move forward with a new Capacity Zone.

Process Step 2 – Part 1: Independent Analysis of Demand Curve Parameters/ Mitigation Recommendations: Proposal

- The NYISO will retain an independent consultant to determine detailed parameters for the new capacity zone, including but not limited to:
  - *Locality requirement*
  - *Shape and slope of demand curve*
  - *Level of capacity excess*
  - *CONE and net CONE for proxy unit located within the proposed capacity zone*
  - *Seasonally shaped reference price for the new zone*
- The independent analysis will also evaluate whether mitigation measures are needed for the new capacity zone.

Process Step 2 – Part 1 (cont'd)

- If the new capacity zone process is triggered in a year that does not coincide with the year in which the NYISO files its proposed three-year Demand Curve reset, the level of escalation used will be the currently-effective escalation level, and the new curves would be effective until the next demand curve reset cycle.
- If the new capacity zone process is triggered coincident with the year of the Demand Curve reset filing, the consultant will develop a Demand Curve for the potential new zone at the same time the consultant develops the Demand Curves for the existing zones.
- The consultant will issue its analysis in both draft and final versions (see further phases in this step).

Process Step 2 – Part 2: NYISO Staff Process, MMU Consultation

- Following the independent consultant's draft analysis of the new capacity zone, the NYISO will:
  - *Verify the locality requirement through a MARS analysis (tan45 approach under consideration).*
  - *Consult with and obtain input from MMU on the independent consultant's analysis.*
  - *Draft the required tariff changes reflecting the new capacity zone.*
  - *Submit NYISO draft recommendations to stakeholders for comment.*
  - *Present for review and comment the draft analysis and recommendations to the NYS Reliability Council.*

Process Step 2 – Part 3

- NYISO and the independent consultant will review comments submitted by stakeholders, revise the independent analysis and NYISO recommendations as needed, and submit final versions of the analysis and recommendations to the NYISO Board for consideration.
- Stakeholders may submit written comments to the Board on any aspect of the proposed new capacity zone, including whether or not such a zone should be created.
- The NYISO Board will consider stakeholder comments and issue a determination, the outcome of which could be but is not limited to:
  - *Direct the NYISO to file tariff changes for the new capacity zone as submitted,*
  - *Remand aspects of the filing to the ICAPWG for further consideration, or*
  - *Decide that creation of a new zone is not warranted.*

NYISO Reply to Stakeholder Written Comments

- ***Comment: NYISO should not create new capacity zones before a reliability need is identified***
- ***NYISO reply:***
  - *Existing localities (J&K) were created to address limited zonal generation and available transfer capabilities from other zones.*
  - *Zone K currently has generation in excess of Zone K load.*
  - *There is no reliability need per se identified for NYCA, yet the NYISO annually develops IRM requirements for NYCA based upon an LOLE of 1 day in ten years.*
  - *Conceptually it is no different to draw a circle around a given subset of NYCA zones and perform the same IRM analysis to determine when LOLE=0.1 is reached.*

NYISO Reply to Stakeholder Written Comments

- ***Comment: Pricing within the various zones/localities should reflect economically rational outcomes***
- ***NYISO reply:***
  - *As part of the process to develop detailed NCZ parameters for consideration, the analysis should simulate the relative clearing prices of all capacity zones under various new entry assumptions.*
  - *At the NYISO's request, NERA prepared a demand curve for the Lower Hudson Valley concurrent with its the most recent demand curve reset process.*

NYISO Reply to Stakeholder Written Comments

- ***Comment: Need to decide on shape/slope of new capacity zone demand curve before creating a new capacity zone***
- ***NYISO reply:***
  - *The NYISO's proposed process provides for the shape/slope of the NCZ to be examined by the independent consultant as part of its evaluation.*
  - *Shape and slope also would be addressed in the NYISO's recommendations.*
  - *Stakeholders [All of the above] would have an opportunity to provide input on the above and, additionally, comments to the Board.*

NYISO Reply to Stakeholder Written Comments

- ***Comment: Process should include a vote on removing localities for which subsequent demand curve reset processes do not result in a set of curves that are economically efficient over the range of combinations of upstream and downstream surplus spanned by the demand curves.***
- ***NYISO Reply:***
  - *The NYISO believes the adjustment of demand curves should be considered in the demand curve reset process.*
  - *The interaction of capacity zone clearing prices should be considered both in designing the new capacity zone and in the demand curve reset process.*

NYISO Reply to Stakeholder Written Comments

- ***Comment: Locality requirement should be based upon IRM tan45 methodology***.
- ***NYISO Reply:***
  - *The NYISO is considering whether the full tan45 methodology is appropriate.*

NYISO Reply to Stakeholder Written Comments

- ***Comment: New locality demand curve should be capped at a price based on adjacent deliverable zone plus the cost of transmission upgrades to remove the deliverability constraint.***
- ***NYISO Reply:***
  - *In the absence of transmission upgrades being made, it is still reasonable to base the new capacity zone demand curve parameters (including locality requirement) on the net cost of new entry in the new zone.*
  - *If new transmission is built that relieves the deliverability constraint, the next update of the locality requirement for the new zone should reflect the increased import capability.*

NYISO Reply to Stakeholder Written Comments

- ***Comment: Decision to create a new capacity zone should recognize persistent cost differentials between capacity zones.***
- ***NYISO Reply:***
  - *The NYISO proposal contemplates that this issue will be analyzed by the independent consultant and considered in the recommendations regarding demand curve parameters/mitigation for proposed new zone(s).*

NYISO Reply to Stakeholder Written Comments

- ***Comment: New capacity zone design should consider market power issues.***
- ***NYISO Reply:***
  - *The NYISO proposal contemplates that this issue will be analyzed by the independent consultant and considered in the recommendations regarding demand curve parameters/mitigation for proposed new zone(s).*

NYISO Reply to 10/12 ICWG Comments

- ***Comment: How are CRIS Rights handled if a new G-K Capacity Zone were formed?***
- ***NYISO Reply:***
  - *The new capacity zone would also create a new Capacity Region. No Deliverability standard exists between Capacity Regions.*
  - *The NYISO will consider the market implications of any new Capacity Region.*
    - *Currently this situation exists between ROS Capacity Region and J and K.*
    - *ROS Capacity is allowed into both J and K without CRIS Rights.*

NYISO Reply to 10/12 ICWG Comments

- ***Comment: What is the minimum size of any new Capacity Zone that the NYISO would consider?***
- ***NYISO Reply:***
  - *The NYISO position is that any new Capacity Zone would be no smaller than any existing LBMP Zone.*

Next Steps

- ***Written comments on this presentation and any other new capacity zone issues should be submitted by COB November 2 so that they can be timely considered by the NYISO in relation to a timely posting of its presentation for the November 9 ICAPWG meeting. Timing is driven by January 4 filing due date.***
  - *Comments should be sent to Pete Lemme at plemme@nyiso.com*
  - *Clearly indicate whether the comments can be posted or whether they should be treated as confidential.*

The New York Independent System Operator (NYISO) is a not-for-profit corporation that began operations in 1999. The NYISO operates New York's bulk electricity grid, administers the state's wholesale electricity markets, and provides comprehensive reliability planning for the state's bulk electricity system.

www.nyiso.com