On Ramps & Off Ramps: Response to Mr. Younger's 1/10/2018 ICAPWG Presentation*

***Revised 1/30/2018 to reflect accurate dates on slides 6 and 11**

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ICAPWG

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Rensselaer, NY

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Background

- On 1/10/2018, Mr. Younger presented concerns with the NYISO's proposed On Ramps and Off Ramps Market Design that it developed in the stakeholder process
  - In addition, Mr. Younger proposed some solutions to address his concerns.
- The NYISO has evaluated Mr. Younger's concerns and solutions, and has the following response

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N-1-1 Transmission Security Analysis – Mr. Younger's Concerns and Proposal

- **Mr. Younger presented:**
  - His concern: the modeling of generators would not align with the current capacity market requirement setting process or the proposed alternative LCR methodology
    - Specifically, intermittent generators are modeled at zero (0), traditional generators are modeled at ICAP, and SCRs are not modeled
  - His proposal: instead model all generators at UCAP and reduce Load Forecasts by SCR UCAP

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N-1-1 Transmission Security Analysis – NYISO Response

- The NYISO believes that it is not appropriate to blend Transmission Security Analysis (i.e., the current on/off ramps proposed test) and Resource Adequacy Analysis
- The NYISO has continually described in it's Project Design Statement and Market Design Guiding Principles (see appendix) that the proposal should be "open, transparent, robust, predictable, stable"
- Using a UCAP measure for generation in N-1-1 Transmission Security Analysis for the on/off ramp test:
  - Is a change from today's widely accepted practice for conducting N-1-1 transmission security analysis
  - Would introduce volatility into the test, as generator UCAP values can change year over year, which may cause different test results even without any changes in actual generation, load, or transmission
  - Would decrease the transparency of the process, as these cases would no longer be available for others to access

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N-1-1 Transmission Security Analysis – NYISO Response (continued)

- **Transmission Security Analysis with the additional 2G margin for creation is likely to send a "create" signal at least as soon as a Resource Adequacy Analysis**
  - NYISO views the Transmission Security Analysis with the additional 2G margin as sending an appropriate zone creation signal
- **Using a UCAP measure for generation and performing a Transmission Security Analysis would be the equivalent of increasing the create and eliminate margin from 2G/4G to some larger value (e.g., 3G/5G)**
  - 2G and 4G were selected as a proxy for a single plant and 2 plants

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N-1-1 Transmission Security Analysis NYISO - Response (continued)

- The table below illustrates the variability of EFORds, using the base case from the 1/16~~25~~/2018 NYISO supplemental presentation, which assumed Indian Point retires, and AC Transmission, CPV, Cricket Valley, and Bayonne Energy Center enter

	Formula	G-J @ 5 Year EFORd	G-J @ 5 Year EFORd +2%	G-J @ 5 Year EFORd -2%
Load Forecast	[A] = Given	15556	15556	15556
Transmission Security Limit	[B] = Calculated	4225	4225	4225
2017 5-year EFORd	[C] = Given	10.50%	12.50%	8.50%
Total Resources Modeled	[D] = Given	13211	12916	13506
Total Resources + Transmission	[E] = [B]+[D]	17436	17141	17731
Transmission Security Balance	**[F] = [E]-[A]**	**1880**	**1585**	**2175**
Generator Contingency #1	[G] = Given	871	851	890
Generator Contingency #2	[H] = Given	606	592	619
Generator Contingency #3	[I] = Given	537	525	549
Generator Contingency #4	[J] = Given	528	516	540
Eliminate Test Balance	**[K] = [F]-[G]-[H]-[I]-[J]**	**-662**	**-900**	**-423**

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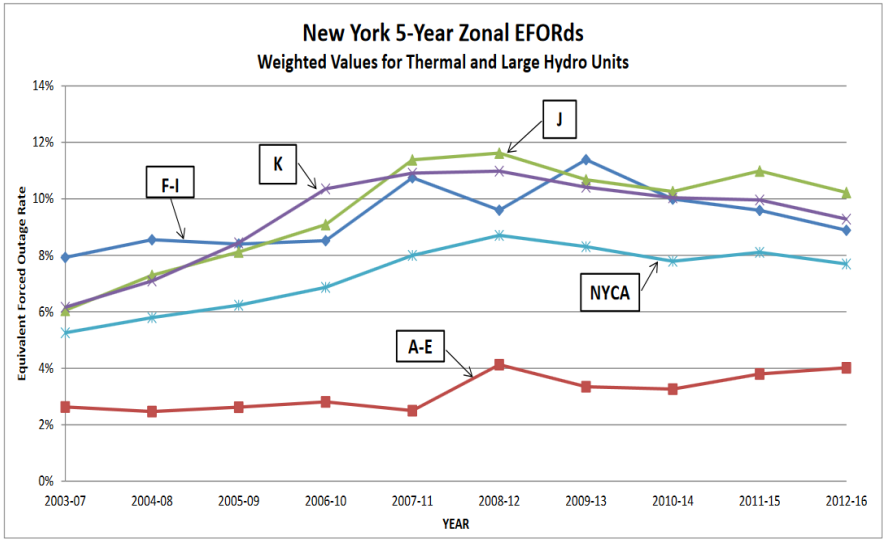
N-1-1 Transmission Security Analysis – NYISO Response (continued)

Figure A.5 Five-Year Zonal EFORds



NYSRC: NYCA Installed Capacity Requirement for the Period May 2018 through April 2019 Page 26

- The graph charts the 5 year EFORds for the past 10 years, from NYSRC 2018 IRM Study

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N-1-1 Transmission Security Analysis – Mr. Younger Concerns and NYISO Response

- While discussing the results of the NYISO's Indian Point Energy Center (IPEC) Generator Deactivation Assessment, Mr. Younger correctly identifies that both the on/off ramps proposed test (Transmission Security Analysis N-1-1-2G) and Resource Adequacy Analysis would indicate the need for zone creation if both Indian Point Energy Center units deactivated and no additional capacity entered into service in the Lower Hudson Valley (i.e., the on/off ramps proposed test sends a signal consistent with an RA test)
- Mr. Younger states that the transmission security need was much lower than the resource adequacy need
  - NYISO Response: That statement is incorrect. The need for generation MW in the transmission security was somewhat smaller, but close to the Resource Adequacy need
- The sensitivity Mr. Younger relies on is if there was a need after the deactivation of both Indian Point Energy Center units, and no additional generation or transmission came into service prior to the deactivation date
  - NYISO Response: That hypothetical fails to consider the entrance of any of the following projects: CPV, Cricket Valley, Bayonne Energy Center, or AC Transmission

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Additional Concerns and Proposals raised by Mr. Younger

- Treatment of New Entry
- Contingency Size
- Persistence of Zone Elimination Analysis
- Out of Market Retention

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Treatment of New Entry

- **Mr. Younger proposes modeling new resources as a single contingency for 20 years**
- **NYISO Response:**
  - This would also diverge from today's existing and widely accepted N-1-1 Transmission Security Analysis
  - This equates to using 'plant' level contingencies for new units
    - The proposal uses 2G as a proxy for a plant
  - Additionally, this could be viewed as discriminatory against incumbent generation, which could have similar electrical configurations but be considered differently in this analysis

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Contingency Size

- **Mr. Younger raised concerns about the treatment of some 2x1 combined cycle plants in the generator contingencies**
- **NYISO Response:**
  - Mr. Younger correctly identified that the data posted had inadvertently not listed these plants as a single contingency. The NYISO's supplemental 1/15~~5~~6/2018 presentation corrects the data posting

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Persistence of Zone Elimination

- **Mr. Younger raised concerns about the confluence of Generator Deactivations and elimination of a Localility**
- **NYISO Response:**
  - The proposed elimination rules are reasonable
    - The on/off ramps design expands the physical withholding rules and penalty provisions to protect the market in the event an existing generator provides a notice of retirement simply to avoid zone elimination (i.e., economic generators noticing retirement to avoid zone elimination and then withdrawing the notice)
    - At the same time, mitigation rules recognize a generator could be economic with the Locality in place but uneconomic if the Locality is eliminated. Such a deactivation notice would not result in penalties or exclusion from the elimination test
    - The proposal's premise that certain generators may become uneconomic when a Locality is sufficiently long to trigger zone elimination is not unreasonable
  - The elimination test period is known in advance, and the NYISO "Reliability Must Run" rules for a deactivation notice only require a payment of study costs if the unit chooses to not retire
    - Study costs are anticipated to be around $50,000

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Uneconomic Retention

- Mr. Younger raises concerns that the test provides a new potential for market power through uneconomic retention
- NYISO response: the NYISO's proposal does not increase the potential for uneconomic retention

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Conclusion

- The NYISO thanks Mr. Younger for presenting to the ICAPWG his specific concerns with and alternative proposals regarding the On Ramps and Off Ramps proposal the NYISO has developed in the stakeholder process
- At this point, the NYISO does not believe that any changes to its proposal are warranted, and plans to bring it's proposal to the BIC in February

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- Maintaining and enhancing regional reliability
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- Planning the power system for the future
- Providing factual information to policy makers, stakeholders and investors in the power system

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Appendix: Project Design Statement and Market Design Guiding Principles

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Project Design Statement

- Develop a robust and transparent process for the creation and elimination of Localities based on reliability principles to ensure locational capacity prices reflect system reliability needs and market conditions

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NYISO Proposal: Align Create & Eliminate Rules with Reliability Planning Process (RPP)

- **Guiding Principles: Open, Transparent, Robust, Predictable, Stable**
  - Use accepted and familiar reliability planning approach
  - Use established planning cases from the existing Reliability Planning Processes
  - Focus primarily on transmission capability between LBMP zones
  - Use of transmission security and/or resource adequacy

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Market Design Guiding Principles

Efficient Market Signals

- Maintain reliability
  - Timely creation of zones sufficiently in advance of reliability concerns
  - Timely elimination of zones when reliability concerns are sufficiently resolved for planning horizon
- Incent appropriate investment
  - Locational price signals
  - Adequate supply where needed

Transparent and Robust

- Stable and Predictable
  - Anti -toggling
- Market risk borne by Market Participant
- Functions well over wide range of system/market conditions

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Reliability Through Markets

- **Market should compliment and reinforce system reliability**
- **Utilizing the proven reliability construct of transmission security to determine when to create or eliminate a Locality:**
  - Ensures locality price signals direct efficient investment needed to retain and attract supply where it provides the greatest reliability benefit
  - Provides transparent and predictable outcomes, allowing developers to make informed and efficient investments that enhance grid reliability
  - Permits NYISO to leverage the reliability criteria, analysis, procedures, and rules utilized to manage system reliability for market design
    - OATT Attachment Y Reliability Planning Process
    - NERC TPL-001-4, NPCC Regional Reliability Reference Directory#1, NYSRC Reliability Rule 1

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