

Process and Metrics for Selecting Transmission Solutions for Reliability

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The following is a draft NYISO proposal, which defines process changes to address NYISO's FERC Order 1000 compliance filing obligation. The draft is focused on Reliability based needs with the expectation that a similar Public Policy process will be developed subsequent to the development of the Reliability process.

1. **RNA:** Identify needs
 - a. *Existing RNA Process:* Perform RNA as is presently done. Base case inclusion rules will be the same, including with respect to Local Transmission Plans.
 - b. *Quantify Needs:* Use base case from the 10th year of the study period to calculate the amount of load (MW) that would need to be reduced from beneficiary zones to eliminate a transmission violation in the 10th year of the study period. This step identifies the minimum MWs required to provide the needed benefits.
 - i. For transmission security Reliability Needs, loads to be reduced are those that have a mitigating impact on the transmission security violation.
 - ii. For resource adequacy needs, Compensatory MW methodology will be used to define need as is presently done in the RNA.
2. **CRP:** Study regulated and market based (including Interregional Transmission Projects) submitted solutions to RNA defined Reliability Needs. The CRP will be made up of two parts. The Reliability Solutions Assessment will include existing steps, as enhanced in 2.a to 2.d. The Regulated Transmission Solution Evaluation will include new steps, as described in 2.e to 2.j. The revised process will analyze specific solution proposals in more detail.

Reliability Solutions Assessment

- a. *Receive specific solutions:* NYISO receives specific proposed solutions in response to the Reliability Needs identified in the RNA. The specific proposed solutions must have sufficient detail to perform all study and evaluation needs for the 10-year RNA horizon. Required project information is specified in Attachment Y, which includes:
 - i. Generation and Demand Response components: Physical information (e.g. geographic and electric location & size) and technical data, which is to be supplied with the initial response to the solicitation.
 - ii. Transmission components: Physical information (e.g. terminations and conceptual routing) and technical data (e.g. electrical characteristics) which is to be supplied with the initial response to the solicitation.
 - iii. Transmission Owners would be required to have an all transmission solution as a reference point
 - iv. Cost estimates and development milestones for proposed transmission solutions are to be supplied for use in the economic screen, deadline to be established by the NYISO.

- b. *Viability Screen:* Evaluate all types (e.g. Generation, Transmission, Demand Response) of proposed solutions based on the following criteria:
 - i. Developer provides required data to evaluate the proposal
 - ii. Solution preliminarily deemed to satisfy the specified Reliability Need(s)
 - iii. Solution is technically practicable
 - iv. Developer indicates possession of, or an approach to acquiring, the necessary rights-of-way, property and facilities that will make the proposal reasonably feasible in the required timeframe
 - v. Solution can be completed in the required timeframe
- c. *Sufficiency Screen:* Comparably analyze each solution to confirm that it meets the needs through the 10th year. Note: Each proposed solution may contain multiple components and different types of solutions. Each solution is evaluated independently to confirm that the proposed solution eliminates the Reliability Need as specified by the developer.
 - i. LOLE drops to 0.1 days/year or below
 - ii. Transmission Security violations eliminated
- d. *Reliability Solutions Assessment:* Similar in purpose to today's CRP, this assessment will identify viable and sufficient solutions and be presented to stakeholders for comment. Information provides guidance to developers and stakeholders for all types of regulated and market based solutions. The NYISO will seek input from the NYDPS on all proposed solutions.

Regulated Transmission Solutions Evaluation: All subsequent steps in the NYISO process will only apply to the selection of regulated transmission solutions.

- e. *System Impact Screen:* A proposed regulated transmission solution will only be considered for selection if it is found to not have a significant adverse impact to the reliability of the system. Starting with the 10th year base case, perform power flow and short circuit studies for regulated transmission solutions. Other studies will be considered and performed, as deemed appropriate.
 - i. If a proposed project results in a significant impact in the 10th year case and a proposed solution involves multiple components, then in addition each year of identified Reliability Need should be modeled to confirm that applicable reliability criteria is met.
- f. *Solicit regulated transmission solution adjustments:* If the System Impact Screen identifies an issue that requires modification to a regulated transmission solution, then the developer may be asked to make an adjustment to their proposed solution in order for them to continue to receive consideration for selection.
- g. *Review adjustments:* NYISO will review submitted adjustments and confirm that the solutions still meet the earlier screens. Solutions that have a significant adverse impact to reliability or do not meet the viability and sufficiency screens will not be considered for selection.
- h. *Local Transmission Plan Sensitivity Analysis:* Evaluate whether other proposed regional transmission solutions may more efficiently or cost effectively meet Bulk

Power Transmission Facility (BPTF) needs addressed by Transmission Owner (TO) Local Transmission Plans (LTPs).

- i. In consideration of TO LTPs compared to the other proposed regulated transmission solutions, the NYISO will assess the potential for other proposed regional solutions to meet any BPTF needs addressed by LTPs.
 - ii. If such a potential is identified, the potentially displaced Transmission Owner LTPs will be removed from the 10th year case and the impact of the proposed solution(s) on the BPTF needs will be evaluated.
 - iii. If the proposed solution(s) addresses the identified BPTF needs, the potentially displaced TO LTPs will also be evaluated in the Efficiency Analysis and Economic Screen steps below.
- i. *Efficiency Analysis:* For use as input to the Cost/MW ranking in the Economic Screen, this analysis considers the efficiency improvement, in MW, that a regulated transmission solution offers in addition to serving the needs identified by the RNA.
 - i. Increase load (MW) in the beneficiary zones until a reliability criteria violation occurs to determine how much margin there is in the solution
 - ii. Use the load differences (MW) across solutions to measure the relative efficiency of the solutions
 - iii. For a transmission security Reliability Need, the loads that are included in the adjustment will be the same as those used in the RNA (see 1.b.i above)
- j. *Economic Screen:* For use as the primary metric in selecting the more efficient or cost-effective regulated transmission solutions, this economic screen will evaluate two independent perspectives. The Cost/MW ranking evaluates economy of scale and the capital cost aspect evaluates investment.
 - i. Cost/MW ranking
 - 1. Determine the present worth of the total capital cost of the proposed regulated transmission solution in current year dollars.
 - 2. Determine the MW value of a solution by summing the need in MW determined in the RNA and the MW impact determined in the Efficiency Screen. Obtain the Cost/MW ratio by dividing the present worth of the total capital cost by the MW value.
 - ii. Capital Costs
 - 1. Developers must provide Professional Engineer certified capital cost estimates for their regulated transmission solutions including an assumed \pm range [Cost estimates and handling cost overruns are linked]
 - 2. Capital costs are to include all components that are needed from the first year of need through the 10th year of the study horizon
 - 1. Capital costs are Overnight costs
 - 3. Lowest total regulated transmission solution capital cost will be used as the base capital cost (For reporting purposes, the capital cost will be converted to a ratio based on the lowest cost solution,

e.g. the cost of the lowest cost solution equals 1.0. Similarly the \pm range of the cost estimate will be converted to ratios.)

4. For comparison of regulated transmission solution capital costs, if the high range of the lowest cost solution is greater than the low range of a competing solution, then the competing solution is comparable and is included. If the high range of the lowest cost solution is lower than the low range of the competing solution, then the competing solution doesn't pass the capital cost screen.
5. The NYISO will engage an independent consultant to review the accuracy of the cost estimates.

3. Selection Process

- a. Proposed regulated transmission solutions will be ranked based on the following parameters with consideration of the quality of each of the parameters
- b. Only regulated transmission solutions will be selected by NYISO
- c. A proposed regulated transmission solution will only be considered for selection if the developer meets the entity qualification criteria.
- d. NYISO will compare proposed regional transmission solutions to determine whether they may be more efficient or cost effective than local transmission solutions proposed in NYTO's respective LTPs. NYTO's will consider whether to adopt a regional transmission solution in lieu of their local solutions.
- e. Non-transmission or solutions that combine transmission and non-transmission will be considered by the NYPSC.
- f. Metrics for evaluation
 - i. Cost/MW of the total solution
 - ii. Capital Costs by resource type
 - iii. Capital cost accuracy
 1. Solutions within the \pm range of the lowest capital cost solution, but with tighter \pm projected range may rank higher because they provide less risk
 - iv. Property rights in order of ranking (highest to lowest)
 1. Possession of rights of way
 2. Completed transmission routing study, which:
 1. Identifies a specific routing plan with alternatives
 2. Includes a scheduling consideration of how long it will take to obtain siting & permitting
 3. Provides specific attention to sensitive areas (e.g. wetlands, river crossings, protected areas, schools)
 3. Plan or approach for determining routing and acquiring property
 - v. Transmission Security Ranking
 1. Regulated transmission solutions with the lowest LOLE are preferred because they address transmission security needs more effectively
4. If an Interregional Transmission Project is proposed, the respective regions shall analyze whether the project may be more efficient and cost-effective than the separate regional

transmission projects, as described in the Northeastern ISO/RTO Planning Coordination Protocol.

5. The earliest date at which a triggering decision would be made is determined by backing up from the need date using the longest project development schedule requirement of the acceptable solutions.
6. If the trigger date has not yet occurred or market solutions are sufficient, then a recommendation for a preliminary selection of a regulated transmission solution will be prepared with consideration of the primary and secondary metrics along with a schedule to control when and how the developer will be expected to proceed.
7. If there are insufficient market solutions, the trigger date has been reached and a determination of necessity has been made in the CRP; then NYISO will recommend the final selection of a regulated transmission solution and trigger it.
8. **Input from NYDPS:** NYISO will seek guidance and recommendations from the NYDPS with respect to all proposed regulated solutions, including non-transmission solutions for the purpose of evaluating the most efficient and cost effective regulated transmission solutions.
9. **Draft CRP Report:** NYISO will prepare and provide a draft CRP report, which will:
 - a. Summarize the study effort, evaluation process, and study results from both the Reliability Solutions Assessment and the Regulated Transmission Solutions Evaluation.
 - b. Be presented to the Stakeholders for review and comment
 - c. Reflect input from the NYDPS
 - d. Recommend either preliminary or final solution selection(s)
 - e. Recommend conditions, actions, and schedules for proceeding
10. **Final Draft CRP Report:** NYISO will present the final CRP report together with any Stakeholder comments to the NYISO Board of Directors for action.
11. **NYISO Board Action:** The NYISO Board will approve, or modify and approve, the CRP report and select a preliminary or final regulated transmission solution and define any conditions, actions, or schedule for proceeding as it deems appropriate.
12. **Next Steps**
 - a. *Preliminary Selection:*
 - i. If a solution doesn't need to be triggered immediately, then a preliminary selection will be recommended.
 - ii. If one or more alternative transmission provider proposes solutions that may be comparable or superior to a Transmission Owner's backstop solution, then one alternative may be preliminarily selected in addition to the responsible Transmission Owner backstop solution.
 - iii. The developer of the preliminarily selected solution shall submit an interconnection request to the NYISO if they have not done so already.
 - iv. Preliminary selection can provide:
 1. Documentation of leading considerations for viable solutions
 2. Information that may be used for other studies which need to model a solution

3. Documentation of schedules as to when solutions may be needed and triggered
 4. Identification of solutions that may warrant advancing preliminary development to minimize scheduling risk and to improve cost estimates to provide better quality information for a final selection.
- b. *Final Selection:* When it is deemed by NYISO that a regulated transmission solution must be triggered, a single regulated transmission solution will be selected and recommended to the NYISO Board for approval subject to project tracking.
- i. If the Transmission Owner backstop solution is not selected, it may still, upon NYISO determination, be requested to proceed and to continue to receive cost recovery following the selection of another regulated transmission solution until the other regulated transmission solution completes a defined set of conditions and milestones (e.g. permits, acquisition of right-of way, ordered equipment, begins construction).
 - ii. The developer of the preliminarily selected solution shall submit an interconnection request to the NYISO if they have not done so already.
- c. *Development Cost recovery:*
- i. Development cost recovery will be provided for development expenses incurred after the final selection has been made for a regulated transmission solution and, if applicable, for the responsible Transmission Owner backstop solution to continue with development consistent with specific milestones and conditions approved by the NYISO Board of Directors.
 1. Examples of milestones
 1. Advancing quality of cost estimates to levels authorized by the NYISO Board of Directors
 2. Completing routing studies
 3. Completion of additional studies that are deemed necessary for the particular solutions (e.g. SRIS, SIS)
 - ii. All solutions authorized by NYISO to obtain cost recovery are subject to halting orders up until the solution has received Article VII approval and NYISO approval to proceed to completion
 1. Project costs will be supported consistent with continued solution viability and need.
 2. Examples of conditions that could invoke halting
 1. Needs change through an updated RNA or otherwise
 2. Solution cost estimates change significantly (e.g. more than the high range of the alternative solution cost estimate) as solution plans are developed
 3. Solution schedules are not meeting milestones (e.g. having difficulty with defining ability to acquire property rights)

4. SRIS or SIS studies identify issues that impact the solution plan cost or schedule
 5. Additional studies or development identifies new issues that affect the selection
- iii. *Project Tracking*: The NYISO will track preliminarily selected projects to confirm that they continue to develop consistent to the conditions, actions, or schedule as defined by the NYISO Board

13. Next RNA Study cycle

- a. If a regulated transmission solution does not need to be triggered prior to the expected completion of the next RNA study cycle, then it will be considered as a viable solution in the next RNA study cycle.
 - i. A new solicitation for solutions will be issued, at which time any solution that was submitted during the previous RNA cycle may be resubmitted for consideration.
- b. If a regulated transmission solution has been triggered and meets inclusion rules, then it will be modeled in the base case for the next RNA study cycle.