

Procedure for Developing and Maintaining the NYISO Short Circuit Representation

Introduction

This procedure has been designed to guide the creation and maintenance of the NYISO Short Circuit Study representation and associated data. Until otherwise directed by the NYISO Operating Committee, the Operations Engineering staff shall facilitate and coordinate the maintenance process with the designated representatives of the Transmission Owners.

Purpose

The NYISO Short Circuit representation is needed to support several study efforts and goals of the Operations Engineering and Transmission Planning groups at the NYISO. These include:

- System Reliability Impact Studies
- Annual Transmission Reliability Review
- NPCC Triennial Review of System Reliability
- NERC Reliability Planning Requirements

These study requirements are detailed in the appropriate manuals and procedures issued by the NYISO, NYSRC, NPCC, and NERC. In addition, the NYISO representation is available to assist the Transmission Owners in performing detailed analysis for planned expansions and reinforcements.

The NYISO staff will maintain base case representations for the following:

- Current, or “as found system” representation with all facilities in service.
- 2-3 year “look-ahead” representation consisting of the As Found System plus all facilities approved or committed for service within the next two (2) summer capability periods.
- 5-6 year future planning representation that is consistent with the positive-sequence load flow representation submitted to the NERC/MMWG as the future system case.
- A data file containing current circuit breaker interrupting ratings (manufacturer’s nameplate), by station, for all power transmission facilities in the “NYISO controlled facilities” and “NYISO secured facilities” lists (these are generally 115kV and above)

Initial Creation Effort

The NYISO Operations Engineering staff shall receive the representational data provided by each of the Transmission Owners, and will create a single, complete NYS representation.

For each representation, the NYISO staff will:

1. Validate the representation received from each Transmission Owner to insure that the data was received correctly from each. (This may require performing a basic short circuit analysis on the “as found system” and providing the results to the Transmission Owner’s representative for review.)
2. Identify the boundary locations (interconnecting circuit and terminal buses) between each of the Transmission Owners.
3. Compare the representational data (impedances, connections, names, ratings, etc.). Where differences occur, contact the involved parties to resolve the issue(s).

Where possible, bus names and numbers should be consistent with the NERC/MMWG positive sequence load flow representations. Boundary bus names on inter-Area tie lines shall be consistent with the NERC/MMWG representations.

Data from each of the Transmission Owners will be assigned (each) to individual load flow areas consistent with the NYISO, NPCC, and NERC representations:

Company	LF-Area	Bus	Range
Central Hudson	1	74000	74299
Con Edison	2	74300	74899
LIPA	3	74900	75399
NYSE&G	4	75400	76499
NMPC	5	76500	79299
O&RU	6	79300	79499
NYPA	7	79500	79799
RG&E	8	79800	79999

Initial Transmission Owner Review

As each area data is merged into the NYISO representation, the NYISO staff will perform network continuity and other data reasonability checks to verify that the data is correctly incorporated into the case. The merged case will be returned to that area’s

representative for review. The Transmission Owner's representative will return any comments or corrections to the NYISO staff.

NYISO staff will then incorporate the comments received from this review and prepare a final representation for final review. Each transmission owner's representative should provide written concurrence with this final revision. This will be the completed NYISO base short circuit representation.

Annual Review and Representation Maintenance Process

The NYISO Operations Engineering staff will facilitate an annual review and update of the short circuit representational data. Staff will initiate this review upon the publication of the NYISO Annual Load and Capacity Report (April 1 of each year). The review process will be coordinated with the System Protection Advisory Subcommittee and the Transmission Planning Advisory Subcommittee.

Review of Current Year ("As Found System") Representation

The NYISO staff, in cooperation with the transmission owners' representatives will develop the revised current system representation (dates indicate approximate completion date for each step).

1. NYISO Staff will distribute the current base short circuit representation and summary of breaker ratings to the Transmission Owners' representatives. Where possible, staff will identify any specific area(s) of concern such as system configuration changes that may effect the representation. (April 15)
2. Each Transmission Owner representative shall review the data and provide necessary changes, revisions, corrections to the NYISO staff for incorporation into the model. (May 15)
3. NYISO staff will prepare a revised representation incorporating this additional information and distribute to the Transmission Owners' representatives for review. (June 15)
4. Each Transmission Owner will complete the review of the revised case and indicate acceptance of the change(s) or provide additional data, as appropriate. (June 30)

Review of Future (Planning) Representations

NYISO Operations Engineering and Transmission Planning staff will jointly review the schedule of proposed system additions and reinforcements, the NPCC Major Projects List and other appropriate sources, and identify those "new" facilities that should be added to

the near-term planning model. These changes should be identified as appropriate for the near-term (2-3 year) planning model, or the long-range (5+ year future) model.

1. NYISO Staff will distribute a summary list of changes to the TPAS and SPAS for review. (May 1)
2. The TPAS and SPAS will jointly identify which changes need to be added in each representation. (June 1)
3. The Transmission Owner representative(s) shall provide the appropriate information and model data, including changes to breaker ratings, (July 15) based on either:
 - a. the interconnection agreement with the developer (where available)
 - b. typical planning model data assumptions
4. NYISO staff will prepare a revised representation incorporating this additional information and distribute to the Transmission Owners' representatives for review. (July 30)

At the completion of each review, the base case representation will be distributed to the Transmission Owner representatives for their use for updating their internal representations, as appropriate.

Distribution of Representations

The scope of the short circuit representation includes information and representational data for facilities in various stages of development or approval. This clearly has confidentiality implications. The NYISO staff must maintain proper vigilance to protect the proprietary nature of these data.

While it is desirable for the Transmission Owner or the NYISO staff to perform these system studies, this may not always be practical.

Request for Representation

An entity (other than NYISO staff or Transmission Owner engineering, planning or system protection group staff) requiring the short circuit representational data to perform System Reliability Impact Study short circuit analysis shall submit the request to the NYISO, stating this purpose for the data (i.e., to perform a system reliability impact study for a proposed merchant generator). The NYISO staff will provide the representation to the consultant or applicant upon execution of the appropriate NYISO Confidentiality Agreement.

The NYISO staff may be required to provide the “As Found System” representation in response to regulatory agency or state, regional, or national reliability organization requests.