

Emergency Operations Manual

July 2016

2.3 Responses to the Alert State

When an Alert State is declared by the NYISO, the NYISO and the TOs shall perform the actions described in this section.

NYISO Actions

The NYISO shall monitor system conditions at all times and determine the action(s) listed below that are necessary to return the NYS Power System to the Warning State and, if possible, to the Normal State.

1. Coordinate actions with TOs and Reliability Coordinators.
2. Communicate as soon as possible with all TOs, via the Emergency Hot Line System, that an Alert State has been declared, stating the reasons for the change of state.
3. Initiate one or more of the following remedial actions based upon severity and time constraints.
 - a. Adjust phase angle regulators.
 - b. Shift or start generation in order to obtain additional reactive power (MVar) control.
 - c. Activate reserves.
 - d. Adjust reactive sources and transformer taps.

- e. Perform Generation shifts.
 - f. Modify Interchange Schedules.
 - g. Request NYS Transmission System facilities that are out of service for maintenance be returned to service.
 - h. For high voltage conditions only, request NYS Transmission System facilities that are in service be removed from service where appropriate.
 - i. Implement Manual Voltage Reduction.
 - j. May call for a reserve pick-up to return to schedule if the Area Control Error (ACE) exceeds - 100 MW.
 - k. Take actions to maintain operating reserve, in accordance with the procedures described in section 4.4 of this Manual.
 - l. Direct Demand Side Resources and the TOs to
 - Curtail non-essential Market Participant load.
 - Curtail interruptible load in accordance with contractual arrangements.
 - Request large industrial and commercial customers to curtail load voluntarily.
 - m. Move Generation to Upper Operating Limit Emergency (UOLe).
 - n. Request maximum generation pick-up, at emergency response rates.
 - o. Invoke Emergency Transfer Criteria (ETC).
 - p. Purchase Emergency Energy from neighboring Reliability Coordinators.
 - q. Issue general radio and television appeals to the public to restrict unnecessary use.
 - r. Communicate with neighboring Reliability Coordinators that are creating the condition and request relief.
 - s. Request assistance from neighboring Reliability Coordinators.
 - t. Activate SCR and EDRP Resources.
4. When a situation exists in which the effects of impending severe weather may severely jeopardize the security of the NYS Power System, the NYISO shall notify all TOs of the impending conditions and declare an Alert State.
 5. For all contingencies that would result in an exceedance of Alert State criteria, the NYISO shall determine the corrective actions that would be necessary if the contingency occurs, through coordination with the affected TOs.
 6. If the NYISO foresees an extended period of operation in the Alert State, the NYISO shall solicit bids from all Market Participants.
 7. Communicate as soon as possible with all TOs via the Emergency Hot Line when the Alert State has been terminated.

Transmission Owner Actions

The TOs shall perform the following:

1. Coordinate and implement corrective actions as required by the NYISO.
2. Monitor local weather conditions and shall inform NYISO if local severe weather conditions occur or if they are predicted to occur by regional forecasts.

3. Monitor conditions with respect to their own systems.
4. Whenever a TO observes a system condition that exceeds the current NYISO system state, the TO shall take the following actions:
 - a. Notify the NYISO that a local emergency exists.
 - b. Request assistance of the NYISO, as required.
 - c. Disconnect the affected facility if there is an overload on a transmission facility or if an abnormal voltage or reactive condition persists and equipment is endangered. In doing so, the Transmission Owner shall notify the NYISO who will inform all neighboring Transmission Owners and Reliability Coordinators impacted by the disconnection prior to switching if time permits, otherwise immediately after switching.

Other Considerations:

1. For all contingencies that would result in a violation of the Alert State criteria, corrective action, which would be necessary if the contingency occurs, shall be determined through coordination between the NYISO and the affected TOs.
2. If the NYISO foresees an extended period of operation in the Alert State, a canvass of the TOs shall be made to determine if assistance can be provided through other appropriate means.

- b. Below its pre-contingency low limit and is indicative of a System Voltage Collapse, and appropriate voltage control measures have already been utilized.
 - c. Below its post-contingency low limit and is indicative of a system problem.
 - d. Above its post-contingency high limit for 10 minutes.
 - e. If having taken the actions above, the actual voltage at any bus listed in Attachment A, Table A.2 remains below its pre-contingency low limit for 30 minutes or declines to a level below the mid-point between the pre and post contingency low limits and remains there for 15 minutes, then the NYISO shall discuss the situation with the TOs to determine if corrective action could be taken following a contingency to prevent a System Voltage Collapse.
4. A deficiency in 10-Minute Reserve or Operating Reserve exists. If Sufficient 10-Minute Reserve does not exist to meet the requirements as specified in the *NYISO Transmission and Dispatching Operations Manual* (available from <http://www.nyiso.com/public/documents/manuals/operations.jsp?maxDisplay=20>), even after Quick Response Voltage Reduction is counted, and/or there are insufficient sales off the NYISO reference bus, and the appropriate Reliability Coordinator has been notified that those sales are being counted or curtailed by the NYISO based on the Reliability Coordinator's ability to have the transaction curtailed.
 5. The post-contingency flow on an internal NYCA IROL interface or towards NYCA on an inter-area IROL interface exceeds limits associated with a Voltage Collapse by 5% or more or those limits are exceeded by less than 5% and corrective measures are not effective within 15 minutes.
 6. The power flow on an internal NYCA IROL interface or towards NYCA on an inter-area IROL interface exceeds its stability limit by 5% or more or its stability limit is exceeded by less than 5% and corrective measures are not effective within 15 minutes.
 7. The Area Control Error (ACE) is greater than +/-500 MW and normal corrective procedures are not effective within 10 minutes.
 8. System Frequency declines to 59.9 Hz. or increases to 60.1 Hz, and is sustained at that level or continues to decline below 59.9 Hz. or increase above 60.1 Hz.
 9. Communications, computer, control, and indications facilities necessary to monitor these criteria are not available and, in the judgment of the NYISO, the system is in serious jeopardy.
 10. A neighboring Reliability Coordinator already in Voltage Reduction has requested assistance that can only be achieved through Voltage Reduction within the NYCA.
 11. Portions of the NYISO system are separated.
 12. The NYCA is overgenerating, and steps outlined in the section 4.7, "Overgeneration," of this Manual have been taken, and are not sufficient to reduce the ACE to zero.

3.3 Responses to Major Emergency

The NYISO has the authority and the responsibility to declare that a Major Emergency State exists whenever any of the defined conditions are met.

TOs have the responsibility to determine that an Emergency exists on their own system and to notify the NYISO of the conditions.

3.3.1 Major Emergency Declared by NYISO

When a Major Emergency is declared by the NYISO, the NYISO and the TOs shall perform the actions described in this section.

NYISO Actions

The NYISO shall monitor system conditions at all times and determine the action(s) listed below that are necessary to alleviate the Emergency and Order that such measures be implemented.

1. Coordinate actions with TOs and other Reliability Coordinators.
2. Communicate as soon as possible with all TOs, via the Emergency Hot Line System, that a Major Emergency has been declared, stating the reasons for the change of state.
3. Suspend all prescheduled generation changes until the NYISO determines that they will not aggravate system conditions.
4. Verify the status of the NYS Power System with all TOs whose facilities are involved in the Major Emergency.
5. Determine which remedial actions must be taken by any of the TOs to alleviate the Major Emergency.
6. Order one or more of the following remedial actions in the appropriate sequences based upon severity and time constraints:
 - a. Adjust phase angle regulators.
 - b. Shift or start generation in order to obtain additional reactive power (MVAR) control.
 - c. Activate reserves.
 - d. Adjust reactive sources and transformer taps.
 - e. Perform Generation shifts.
 - f. Modify Interchange Schedules.
 - g. Order NYS Transmission System facilities that are out of service for maintenance to be returned to service.
 - h. For high voltage conditions only, order NYS Transmission System facilities that are in service to be removed from service where appropriate.
 - i. Order the affected facility or facilities disconnected if there is an overload on a transmission facility or if an abnormal voltage or reactive condition persists and equipment is endangered.
 - j. Implement Manual Voltage Reduction.
 - k. May call for a reserve pick up to return to schedule if the Area Control Error exceeds -100 MW.
 - l. Take actions to maintain operating reserve, in accordance with the procedures described in section 4.4 of this Manual.

- m. Direct Demand Side Resources and the TOs to:
 - Curtail non-essential Market Participant load.
 - Curtail interruptible load in accordance with contractual arrangements.
 - Order large industrial and commercial customers to curtail load voluntarily.
 - n. Order Generation to Upper Operating Limit Emergency (UOLe).
 - o. Order maximum generation pick-up, at emergency response rates.
 - p. Invoke Emergency Transfer Criteria (ETC).
 - q. Purchase Emergency Energy from neighboring Reliability Coordinators.
 - r. Issue general radio and television appeals to the public to restrict unnecessary use.
 - s. Communicate with neighboring Reliability Coordinators that are creating the condition and request relief.
 - t. Request assistance from neighboring Reliability Coordinators.
 - u. Activate SCR and EDRP Resources.
 - v. Order Quick Response Voltage Reduction in those areas where it will relieve the condition that placed the NYISO in the Major Emergency. This step shall be taken immediately if the need for Load Shedding appears likely.
 - w. Determine the amount and location of Load Shedding required to relieve condition that placed the NYISO in the Major Emergency and order the Load Shedding. Such orders shall be followed immediately by a visual signal to the TO(s) involved via the Load Shed Alarm System.
7. Arrange to notify all TOs and neighboring Reliability Coordinators, and keep them informed, on a timely basis, of the current status of the NYS Power System.
 8. Coordinate the restoration of the NYS Power System and the termination of Load Relief measures, as conditions permit.
 9. Communicate as soon as possible with all TOs, via the Emergency Hot Line System, when the Major Emergency is terminated.

Transmission Owner Actions

The TOs shall perform the following:

1. Execute Orders received from the NYISO in accordance with this section.
2. Notify the NYISO immediately upon completion of Orders received from the NYISO.
3. Inform the NYISO of changes in system status.
4. Coordinate corrective action with the NYISO.
5. Disconnect the affected facility if there is an overload on a transmission facility or if an abnormal voltage or reactive condition persists and equipment is endangered. In doing so, the TO shall notify the NYISO, who will inform all neighboring TOs and Reliability Coordinators impacted by the disconnection prior to the switching if time permits, otherwise immediately after switching.
6. If time and flow conditions permit, notify the NYISO of the intended action and the NYISO shall notify all other TOs and Reliability Coordinators involved prior to opening the transmission facilities.

3.3.2 Emergency Declared by Transmission Owner

When TOs declare that an Emergency exists on their system, the NYISO and the TOs shall perform the actions described in this section.

Transmission Owner Actions

The TOs shall perform the following:

1. Monitor conditions with respect to their own systems at all times.
2. Whenever conditions exist that are within the criteria defined as a Major Emergency, immediately notify the NYISO that a Major Emergency condition exists.
3. Direct the operation of the generation, which is connected to its transmission system and transmission facilities to effect prompt remedial action during Emergencies on their own systems.
4. Direct immediate corrective action to prevent cascading events that may cause equipment damage.
5. Keep the NYISO fully informed of local conditions and system status.
6. Request assistance from the NYISO, if needed.

NYISO Actions

The NYISO shall perform the following:

1. Evaluate the problems on the TO system that requires assistance and shall determine whether a Major Emergency should be declared.
2. If the NYISO declares a Major Emergency, the NYISO shall initiate appropriate actions as described in this section.
3. If the NYISO does not declare a Major Emergency, the NYISO shall perform the following actions:
 - a. Notify all TOs, via the Emergency Hot Line System, that a Major Emergency does not exist, but that they should be prepared to provide assistance if it becomes necessary.
 - b. Coordinate any assistance requested by the TO that has declared that an Emergency exists.