



Manual 29

Outage Scheduling Manual

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2. TRANSMISSION FACILITIES OUTAGES

This section of the manual describes the scheduling of transmission facility outages. The following phrases used in this Outage Scheduling Manual have the following meaning:

- “Facilities expected to impact system Transfer Capability of the NYISO secured system” are those transmission facilities, under an outage condition, that effectively reduce the Transfer Capability of an NYISO transfer interface by a minimum of 150 MW.
- “Operative TCC month” is the calendar month(s) during which the facility outage is requested.

2.1. Transmission Facilities Outage Coordination

The NYISO coordinates all requests for transmission outages based on their potential impact on power system reliability.

The methods described in this section of the manual are used to determine whether system reliability and power transfer requirements are met, consistent with the New York State Reliability Council (NYSRC) Reliability Rules.

The NYISO will determine if reliability criteria violations will occur based on the requested transmission outages scheduled. This assessment will be performed as proposed outages are received so that TOs can be advised as soon as possible to help manage their outages.

The NYISO has authority to defer, postpone, or cancel scheduled transmission outages of facilities under NYISO operational control.

This includes:

1. Deferral to alternate dates of requested outages not yet approved by the NYISO.
2. Postponement and rescheduling of previously NYISO approved outages for which the associated TO has not yet committed resources.
3. Cancellation and rescheduling of previously NYISO approved outages for which the associated TO has committed resources. The NYISO will defer, postpone, or cancel requested transmission outages of facilities as listed in [Attachment A](#) of this manual, if a contingency on a NYISO monitored facility will result in a reliability criteria violation. Otherwise, the NYISO will approve the requested outage, or reschedule the outage as agreed to by the requesting TO.

The NYISO has final authority in postponing or canceling outages on transmission facilities under NYISO operational control, if the outage would violate established reliability criteria. When the NYISO postpones or cancels a transmission facility outage request, the NYISO provides alternate periods for the TO to schedule the required outage.

When the NYISO denies an Outage Schedule, the reasons for denial will be made available for review by all parties involved.

The NYISO is not responsible for the physical operation (such as the switching of transmission lines for maintenance or security) or actual maintenance of the transmission facilities as listed in Attachment A of this manual. These functions remain under the responsibility of the TOs. Switching authority under both normal and Emergency conditions on facilities within or affecting a TO's own transmission system also remains within the purview of the TO.

Transmission Owners have final authority in scheduling, postponing, or canceling outages on all transmission facilities except for those under NYISO operational control.

The following information must be provided regardless of the method of notification:

- a. Equipment Name
- b. Description of Work
- c. Posted Reason
- d. Request Type
- e. Schedule Type
- f. Emergency Recall Time
- g. Outage Type
- h. Start Date/Start Time of Outage
- i. End Date/End Time of Outage
- j. Local Generation Impact

See section 3.2 of the Outage Scheduler User's Guide for description.

<https://www.nyiso.com/manuals-tech-bulletins-user-guides>

2.1.1. Transmission Facilities Outages Impact on Congestion Settlements

Transmission facility outages can have an impact on congestion settlements related to the Day-Ahead Market and TCC Auction settlements, as described in Attachment N of the *NYISO Open Access Transmission Tariff* (available from the NYISO Web site at <https://www.nyiso.com/regulatory-viewer>). Attachment N defines the congestion rent shortfall charges and congestion rent surplus payments

to TOs, resulting from transmission facility outages and returns-to-service.

2.2. Transmission Facilities Outage Scheduling Procedures

TOs should make an effort to expedite completion of an outage on facilities which impact the reliability of the power system.

To provide the NYISO with enough time to perform the required studies and verify power system thermal, voltage, and stability criteria, all transmission facilities outage requests are subject to the following procedures.

2.2.1. General Procedures for Scheduling Annual Maintenance

These are the general procedures for submitting information and reports, general NYISO verifications, and rescheduling of outages to develop the annual maintenance schedules.

NYISO Actions

1. Review the annual maintenance transmission facilities outage schedules submitted by TOs by November 1 of each year.
2. Determine impact on NYISO monitored reliability and transfer criteria, if a conflict exists that violates system reliability criteria.
3. Notify TOs and coordinate changes to the proposed schedule.
4. Post approved outages on the NYISO Open Access Same Time Information System (OASIS) site.
5. Make revisions of the approved Outage Schedules and post the updates on the NYISO OASIS site.

Transmission Owner Actions

1. Submit the proposed annual maintenance transmission facilities outage schedules for all known outages of Facilities under NYISO Control (A1 facilities) for the coming calendar year, including daily outages, scheduled for three or more calendar days in succession by October 1 for each year in written form via available means.
2. Reschedule rejected requests in periods offered by the NYISO.
3. Submit updates to the annual maintenance transmission facilities to NYISO Scheduling Department consistent with section 2.2.3 for approval. Updates are processed on an on-going, first-come, first-serve basis.

2.2.2. NYISO Analysis Procedure

The following procedure defines the applicable rules for scheduling outage requests in consideration of NYISO reliability.

NYISO Actions

1. Perform the contingency analysis evaluation, as required.
2. Apply the System Reliability and Transfer Criteria described in [section 2.3](#) of this manual.

2.2.3. Facility Outage Scheduling Procedures

All outage requests for Facilities under NYISO Control (A1 facilities) or other Facilities Requiring NYISO Notification (A2 facilities) that are not considered Emergencies by NYISO are processed according to the following procedure.

NYISO Actions

1. Receive and acknowledge TOs' facilities outage requests. The NYISO will approve outages in the order received.
2. The NYISO will determine if reliability violations will occur so that TOs can be advised as soon as possible to help manage their outages.
3. The NYISO will defer, postpone, or cancel requested transmission outages of Facilities under NYISO Operational Control if a contingency on a NYISO monitored facility will result in a reliability criteria violation.
4. The NYISO will disapprove/reject the requested outage if notification is not received within the minimum notification time requirements. Otherwise, the NYISO will approve the requested outage, or reschedule the outage as agreed to by the requesting TO.
5. Prepare and issue the following reports every calendar day:
 - a. NYISO Daily Outage Schedule
 - b. NYISO Transfer Limitations
 - c. Daily Outage Notifications for each TO
 - d. Daily Scheduled Outages Report for the NYISO Power Control Center.

Transmission Owner Actions

Transmission Outage Scheduling

1. Submit via e-mail, telephone, or other means available the outage requests, based on best available information, within minimum notification time and requirements as provided in this *Outage Scheduling Manual*:
 - a. Facilities expected to impact system Transfer Capability of the NYISO secured system: No later than 30 calendar days before the first day of the operative TCC month with the exception of:
 - i) Outage requests that the NYISO and TO agree cannot prudently be delayed, based on reliability concerns, to the next or later operative TCC month(s), or
 - ii) Outage requests for weekend, NYISO observed holiday, or weekday off-peak periods, or
 - iii) Outage requests for a period within an operative TCC month throughout which significant congestion is not expected to occur in the judgment of the NYISO.

Facility outage requests that are expected to impact system Transfer Capability of the NYISO secured system may be submitted more than 30 calendar days before the first day of the operative TCC month and, if necessary, revised by the TO provided the revision is submitted no later than 30 calendar days before the first day of the operative TCC month.

- b. Facilities Under NYISO Control expected to impact system Transfer Capability less than 150 MW: At least five calendar days before the proposed scheduled time and date.
 - c. Facilities Requiring NYISO Notification: At least two calendar days before the proposed scheduled time and date.
 2. Specific facility notification times are identified in [Attachment A](#) of this manual. The 30 calendar day notification requirement is in advance of the first day of the operative TCC month. For example, all facility outage requests during the month of June that are expected to impact system Transfer Capability of the NYISO secured system must be submitted by May 1.

Transmission Outage Scheduling Affecting Local Reliability Commitment

1. Transmission Owners in the New York Control Area (NYCA) must coordinate scheduling of transmission facility outages with the NYISO. This includes verifying that a specific generator is available for commitment, if required during the transmission outage.

2. Transmission Owners must submit a maintenance outage request to the NYISO Scheduling Department. If that request requires a specific generator be committed or remain on line during the outage, that information must be provided when the request is made. The NYISO will record the details of the outage.
3. Transmission Owners must perform the following with respect to outages:
 - a. Verify that any required generators are available for commitment during the outage.
 - b. Review the Day-Ahead Market generation commitment to determine that the required generation is scheduled. If it is not scheduled, the TO must notify the NYISO Grid Operations Department that a unit commitment for local reliability is required, identifying the generators required and the Start Date/Start Time and End Date/End Time of the local reliability commitment.
 - c. Notify the GOs of the commitment after the NYISO has approved the local reliability commitment.
4. If a transmission outage request requires a specific generator remain offline or derated during the outage, that information must be provided when the request is made. Notification of an outage impacting a generator will be made to the affected generator via the NYISO scheduling software.

Transmission Outage Rescheduling

1. Facilities expected to impact system Transfer Capability of the NYISO secured system:
 - a. Wherever possible, in the event of a NYISO or TO cancellation of an approved outage request fewer than 30 calendar days before the first day of the operative TCC month, a transmission outage will be rescheduled within the same operative TCC month if both of the following conditions are met:
 - i) The outage will be expected to have similar impact to Day-Ahead or Real-Time Market system Transfer Capabilities as in the originally scheduled period.
 - ii) The outage will be submitted within the minimum notification time of two calendar days.
 - b. In the event that cancelled facility work cannot be rescheduled to meet the above conditions but cannot be prudently delayed based on reliability concerns, then the

cancelled facility work may be rescheduled within the same or another operative TCC month; provided the work is rescheduled in a manner that is close as practical to the above conditions.

2. Facilities under NYISO Operational Control expected to impact system Transfer Capability less than 150 MW
 - a. Consider rescheduling outage requests deemed by the NYISO to have a substantial impact on Transfer Capability.
 - b. Reschedule unapproved outage requests.
3. Facilities Requiring NYISO Notification: consider rescheduling outage requests deemed by the NYISO to have a substantial impact on Transfer Capability.

Transmission Outage Cancellation

1. Provide reasons for the cancellation of an outage request for review by the NYISO Grid Operations Department and NYISO Market Monitoring and Performance Department.

2.2.4. On Shift Outage Scheduling Procedures

On shift outage scheduling by the NYISO is performed according to the following procedure.

NYISO Actions

1. After being notified by the TO of its intention to proceed with a prescheduled outage:
 - a. Check the online Outage Scheduler function to verify that the requested outage has been prescheduled.
 - b. Study the system conditions for thermal, voltage, or stability violations including the equipment outage before outage starts.
 - c. If required, take the necessary actions to ensure that the outage will not violate reliability criteria and make all the necessary pre-outage Notifications.
2. Notify the TO via telephone, to proceed with the actual switching sequence, when the pre-outage actions have been taken and it has been determined that the outage can proceed.
3. Assess the post-contingency conditions for thermal, voltage, or stability violations, after being notified by the TO that the equipment is out of service. If the NYISO determines that the reliability criteria will be violated as a result of the outage, the

NYISO will take appropriate actions to correct the problem.

4. After receiving notification from the TO that the outaged equipment is restored and in normal working condition, take the necessary actions to remove restrictions placed on the NYISO monitored facilities for the outage. Equipment restored to service with a derated capacity or with an operational deficiency will be logged appropriately.

Transmission Owner Actions

1. Before starting the actual switching sequence, notify the NYISO Grid Operations Department via telephone of its intention to proceed with a Scheduled Outage and then wait for NYISO approval to proceed.
2. Upon receiving approval from the NYISO, proceed with the switching sequence to remove the equipment from service.
3. Notify the NYISO Grid Operations Department immediately after the facility has been removed from service.
4. If the NYISO recalls the outage, return the facility to service as soon as possible.
5. Notify the NYISO Grid Operations Department immediately after completing the scheduled work, in preparation for restoring the outaged equipment to service. The TO will notify NYISO Grid Operations Department of the restoration intent, however, for the sake of reliability will begin the process of restoring the facilities promptly.
6. Upon receiving approval from the NYISO, proceed with the actual restoration sequence to return the facility to service.
7. Inform the NYISO Grid Operations Department immediately after the equipment is restored to service and of any derated capacity or operational deficiency with that facility. The TO must take appropriate measures to correct the problem as soon as possible.

2.2.5. Switching Requests

Short duration changes in equipment status for the purpose of removal from and restoring to service other associated equipment is classified as *switching*.

Switching requests may be made on shift provided the request meets each of the following requirements:

1. The request is directly related to an appropriately prescheduled outage or the

request is to exercise a disconnect switch.

2. The duration of the switching request does not exceed two hours.
3. The TO notifies the NYISO Grid Operations Department a minimum of two hours prior to the start of the switching.
4. The switching is requested to take place during off peak hours or when significant congestion is not expected to occur in the judgment of the NYISO.
5. The switching request will not violate applicable reliability criteria.

2.2.6. Emergency Outages

Planned outages are normally evaluated prior to the calendar day on which they are scheduled to begin. However, there are situations when special operating conditions, or Emergency Outage requests by TOs, require additional study cases to be performed. Special operating conditions that require an Emergency Outage of transmission facilities, whether they are identified by the NYISO or by a TO, will be evaluated immediately by the NYISO according to the following procedures.

NYISO Actions

1. The NYISO will perform the following:
 - a. Obtain a description of the special condition or emergency.
 - b. Identify components involved in the emergency.
 - c. Determine any special conditions related to the outage.
 - d. Request the Start Date/Start Time and End Date/End Time, if known, of the Emergency Outage.
2. Evaluate the impact of the Emergency Outage, if possible. If the nature of the Emergency Outage is such that it cannot be delayed, approval will be given, but appropriate mitigating measures will be implemented to ensure compliance with reliability criteria.
3. Ask the TO requesting the outage to consider delaying the outage if the following conditions apply to the request: the outage meets reliability criteria but has a substantial impact on Transfer Capability in conjunction with previously scheduled outages.
4. If conditions permit, the NYISO will perform the following after coordinating the Emergency Outage request:

- a. Inform the appropriate TOs of the impending Emergency Outage.
 - b. Make all the necessary pre-outage verifications and adjustments to the NYISO monitored facilities as required.
5. Notify the requesting TO via telephone, to proceed with the actual switching sequence.
 6. Assess the post-contingency conditions for thermal, voltage, or stability violations, after being notified by the TO that the equipment is out of service. If the NYISO determines that the reliability criteria will be violated as a result of the outage, the NYISO will take appropriate actions to correct the problem.
 7. Include Emergency Outage and all changes to the Outage Schedule in the daily reports.
 8. After receiving notification from the TO that the outaged equipment is restored to service and in normal working condition, take the necessary actions to remove restrictions placed on the NYISO monitored facilities for the outage. Equipment restored to service with a derated capacity or with an operational deficiency will be logged appropriately.
 9. Inform the appropriate TOs of the conclusion of the Emergency Outage.

Transmission Owner Actions

1. Inform the NYISO Grid Operations Department immediately after determining that an Emergency Outage is required.
2. Provide the NYISO Grid Operations Department with the following information:
 - a. Description of the special condition or emergency.
 - b. List of applicable components to be taken out-of-service.
 - c. Any special conditions related to the outage.
 - d. Start Date/Start Time and End Date/End Time, if known, of the Emergency Outage.
3. Notify the NYISO Grid Operations Department via telephone of their intention to proceed with an Emergency Outage before starting the actual switching sequence and then wait for NYISO authorization to proceed, if the nature of the emergency allows time to do so.
4. Removal of the equipment from service without first notifying the NYISO Grid

Operations Department must only be done for safety purposes and to prevent further damage to equipment. If such action is taken, the TO must immediately notify the NYISO Grid Operations Department of the action after the equipment is safely out of service.

5. Upon receiving approval from the NYISO, proceed with the switching sequence to remove the equipment from service.
6. Notify the NYISO Grid Operations Department immediately after the facility has been removed from service.
7. Notify the NYISO Grid Operations Department immediately after completing the emergency work in preparation for restoring the outaged equipment to service. The TO will notify NYISO Grid Operations Department of the restoration intent, however, for the sake of reliability will begin the process of restoring the facilities promptly.
8. Upon receiving the approval from the NYISO, proceed with the actual restoration sequence to return the facility to service.
9. Inform the NYISO Grid Operations Department immediately when the equipment is restored to service and of any derated capacity or operational deficiency with the facility. The TO must take appropriate measures to correct the problem as soon as possible.

2.2.7. In-Service Work and Relay Testing

In-service maintenance or testing of relays on transmission facilities under NYISO Operational Control and on all inter-company and inter-control area ties is allowed under this procedure:

NYISO Actions

1. The NYISO will perform the following:
 - a. Identify facilities involved in the test.
 - b. Request the Start Date/Start Time and End Date/End Time of the in-service relay test.
 - c. Evaluate the impact of the in-service relay test.
 - d. List approved in-service relay testing in daily outages notification for each TO.

Transmission Owner Actions

1. For normally scheduled in-service relay tests, the TO must notify the NYISO Scheduling Department at least one business day before the proposed scheduled

Start Date, for which the work is to be scheduled. The TO must provide the NYISO Scheduling Department the following:

- a. List of transmission facilities that could be impacted by the test (e.g., line, breaker, capacitor bank, etc.).
 - b. Start Date/Start Time and End Date/End Time of the in-service relay test.
2. For same day work, the TO must notify the NYISO Grid Operations Department as soon as possible of their need to perform such work that day. The TO must provide the NYISO Grid Operations Department the following:
 - a. List of transmission facilities that could be impacted by the test (e.g., line, breaker, capacitor bank, etc.).
 - b. Start Time and End Time of the same day in-service relay test.
 3. The TO must perform testing such that appropriate measures that would mitigate the impact of the test are taken.
 4. The TO must inform the NYISO Grid Operations Department when the testing has been completed and of any derated capacity or operational deficiency with that facility. The TO must take appropriate measures to correct the problem as soon as possible.

2.2.8. Hot Line Work

Hot line work, as referred to in this procedure, is defined as work on or near any transmission line which requires automatic re-closing to be removed from the line or manual re-closing to be held off for the protection of personnel working on or near such facilities.

NYISO Actions

1. The NYISO will perform the following:
 - a. Identify lines included in the work.
 - b. Request the Start Date/Start Time and End Date/End Time of the hot line work.
 - c. If required, evaluate the impact of the hot-line work.

Transmission Owner Actions

1. For normally scheduled hot line work, notify the NYISO Scheduling Department of hot line work on any transmission facilities under NYISO Operational Control and on all inter-company and inter-control area ties 115 kV and above. One day prior notification is required except for emergency situations.

2. For emergency situations the TO must notify the NYISO Grid Operations Department immediately after determining that hot line work will be required.
3. Notify the NYISO Grid Operations Department when automatic re-closing is disabled or manual closing is being held off on the line where the work is being performed.
4. Notify the NYISO Grid Operations Department immediately of any problems or outages relating to hot line work in progress.
5. Notify NYISO Grid Operations Department when hot line work is completed and the automatic re-closing has been enabled.

2.2.9. Emergency Restoration of Facilities

When the NYISO determines that emergency conditions can be averted or alleviated by the restoration of transmission facilities out of service for scheduled work, and the work is of such nature that the facility can be restored within a reasonable recall time, the following procedure will apply.

NYISO Actions

1. Request the restoration of facilities deemed helpful in alleviating the emergency condition.
2. Evaluate continuously the emergency situation and determine if any further attempt should be made to restore the facility, in the event a transmission facility cannot be returned to service using the pre-established procedure for emergency restoration.

Transmission Owner Actions

1. Have restoration procedures in place as part of the outage request for emergency restoration when so requested by NYISO. These will include estimates of time required to restore the facility to service under these conditions.
2. Evaluate the emergency situation and determine if any further attempt should be made to restore the facility in coordination with the NYISO Grid Operations Department, in the event that the transmission facility cannot be returned to service using the emergency restoration procedure.

2.2.10. Extensions of Outages

Although the planning of scheduled outages should always include a realistic allocation of time to accomplish the expected scope of work, it is inevitable that situations will occur that force the extension of the End Date/End Time of a scheduled outage due to unforeseen

circumstances. The following actions will be taken in such cases.

NYISO Actions

1. Modify the existing Outage Schedule as required. This includes performing all the necessary reliability studies described in the previous sections according to the extension time required.
2. Notify affected TOs whose prescheduled outage requests must be rescheduled or canceled due to these extensions.
3. Post the new revised schedule in OASIS and update daily reports.

Transmission Owner Actions

1. If the equipment outage extension does not meet the minimum notification required by section 5.3 of this Outage Scheduling Manual, notify the NYISO Grid Operations Department immediately of the delay and the new planned schedule so that a review can be made of the impact of this extension on system reliability.
2. If the equipment outage extension meets the minimum notification required by [section 5.3](#) of this *Outage Scheduling Manual*, notify the NYISO Scheduling Department.

2.3. System Reliability and Transfer Criteria

The NYISO uses the approved Outage Schedules to determine operating transfer limits for the monitored interfaces. The following is the current list:

1. Internal Interfaces:
 - a. WESTERN NY EXPORT
 - b. DYSINGER EAST
 - c. WEST CENTRAL
 - d. OSWEGO EXPORT
 - e. MOSES SOUTH
 - f. CENTRAL EAST
 - g. TOTAL EAST
 - h. UPNY/CONED
 - i. SPRAINBROOK/DUNWOODIE SOUTH
2. External Interfaces:

- a. CSC-NPX
- b. NPX-CSC
- c. HQ-NYISO
- d. NYISO-HQ
- e. IMO-NYISO
- f. NYISO-IMO
- g. ISONE-NYISO
- h. NYISO-ISONE
- i. 1385-NPX
- j. NPX-1385
- k. NYISO-PJM
- l. PJM-NYISO
- m. PJM-NEPTUNE
- n. SCH-HQ IMPORT/EXPORT
- o. CEDARS-HQ
- p. HQ-CEDARS
- q. SCH-PJM_VFT
- r. SCH-VFT_PJM

2.3.1. Outage Impact Method

The method described below quantifies an outage's impact on the NYISO monitored interfaces. The interface impact method is used because it includes the effect of the outaged facility power flow distribution in addition to the change on the affected interface's thermal, voltage, and stability limits. It is important to remember that changes in the generation dispatch can affect the interface impact.

The Outage Interface Impact is best described by the following formula:

Where:

$$OII = \frac{\{FIL_{max} - [FOI_L + (FIL_{max} * FT_{SF} * FO_{IDF}) - (FF_{FIL_{max}} * FO_{IDF})]\}}{1 + (FT_{SF} * FO_{IDF})}$$

OII = Outage Interface Impact

FIL_{max} = All Facilities in service Interface limit FOI_L

= Facility Outage Interface limit

FT_{SF} = Facility Transfer shift factor for change at interface flow FO_{DF} =

Interface distribution factor for the Facility Outage $FF_{FIL_{max}}$ = Facility Flow

at all facilities in service limit interface

To mitigate the impact of specific maintenance outages on system operations, operating measures are coordinated in advance with the affected TOs and included as part of the outage request or proposed Outage Schedule. These measures include but are not limited to:

1. Opening of additional circuit breakers or reconfiguring stations to minimize the impact of normal or stuck-breaker contingencies.
2. Scheduling the outage during off-peak hours, or weekends, when the anticipated NYISO monitored facilities power flows are lower.
3. Scheduling the outage when a specific generator configuration is more suitable.

3. GENERATION FACILITIES OUTAGES

This section of the manual describes the scheduling of generation facility outages.

The NYISO has the responsibility to ensure sufficient capacity is expected to be available to serve all NYCA load on an annual basis. This is accomplished using the NYISO maintenance outage coordination procedure. All Installed Capacity (ICAP) providers are required to abide by NYISO maintenance coordination, and all other generating resources are required to inform the NYISO of their annual maintenance plans. All requirements for Generator Operators operating generating units shall apply to Aggregators operating Aggregations. For more information, please refer to the Aggregation Manual and Grid Operations Coordination Portal User's Guide available here: <https://www.nyiso.com/manuals-tech-bulletins-user-guides>.

The Transmission Owners in the New York control area have the responsibility to maintain their local reliability requirements. This is accomplished by requiring local TO concurrence with all generator outage requests. This authority ensures all local Transmission Owner reliability concerns are addressed.

3.1. Generation Facilities Outage Coordination

The NYISO coordinates and approves generator Outage Schedules according to the following procedure.

Annual Reliability

1. All generators located in the NYCA or supplying ICAP to the NYCA must submit a confidential notification of their proposed Outage Schedule in accordance with Northeast Power Coordinating Council (NPCC) time schedules to the NYISO. The GOs must provide proposed Outage Schedules for the next two calendar years by September 1 of the current year.

If a GO notified the NYISO sometime after September 1 that it will be an ICAP provider, then its proposed Outage Schedule will be reviewed to see if it will result in the NYISO having insufficient reserves. If the proposed Outage Schedule will result in insufficient reserves, then the GO will be directed to move its outage to a period where its outage is not expected to compromise the reliability of the electric system.
2. Using the proposed Outage Schedules, the NYISO will perform a reliability assessment to determine if projected Operating Reserve over the next two calendar years will be adequate. This reliability assessment will compare projected Operating Capacity with the forecast NYCA peak Load for each week (where Operating Capacity equals NYCA ICAP less Proposed Outage Schedules less Projected Unavailable Capacity) as illustrated on the "Market Data Reports and Info" area of the NYISO Web site. The NYISO will post the projected weekly Operating Reserve margins for all Market Participants for the two calendar year projection. If no Operating

Reserve deficiencies are projected, Steps 3, 4, and 5, below, will not be needed, so the NYISO will proceed directly to Step #6.

3. If Operating Reserve deficiencies are projected for the upcoming calendar year, the NYISO will request that generators located in the NYCA and/or supplying ICAP to the NYCA voluntarily reschedule their proposed outages.
4. Based on voluntary reschedules, the NYISO will rerun the reliability assessment. If Operating Reserve deficiencies are projected to remain (for the upcoming calendar year) after voluntary rescheduling, the NYISO will invoke forced rescheduling of outages planned by generators supplying ICAP to the NYCA to ensure that projected Operating Reserve over the upcoming calendar year is adequate.

These reschedules will be based on:

- a. Adherence to applicable Reliability Rules [i.e., those rules, standards, procedures, and protocols developed and promulgated by the New York State Reliability Council (NYSRC) — in accordance with North American Electric Reliability Council (NERC), Northeast Power Coordinating Council (NPCC), Federal Energy Regulating Committee (FERC), Public Service Commission (PSC), and the Nuclear Regulatory Commission (NRC) standards, criteria, rules and regulations, and other criteria — and the Local Reliability Rules pursuant to the NYSRC Agreement];
- b. Minimizing the number of Outage Schedules impacted;
- c. Minimizing the shifting of Outage Schedule Start Date/Start Times.

Forced rescheduling will be completed by December 1 of the prior calendar year. No compensatory payments will be made to generators as a result of forced rescheduling of planned outages.

5. The NYISO will post the projected weekly Operating Reserve margins for all Market Participants for the next two calendar years.
6. Requests for approval of changes in generator Outage Schedules will first require a repeat of the above steps starting with Step 2.

3.2. Generation Facilities Outage Scheduling Procedures

This section describes the procedures for reporting and scheduling of generator outages within the NYCA and/or supplying ICAP to the NYCA.

Generator Owners must notify the NYISO and the local Transmission Owner when a generator is scheduled

for an outage or when a generator is forced into an outage. For all subsections of section 3.2, Generator Owners must notify the NYISO but there is no requirement for ICAP suppliers backing imports to notify a local Transmission Owner. This notification does not preclude the need for the GO to adjust affected Market Information System (MIS) bids to reflect the generator outage or to coordinate the generator outage with the local TO. Ambient temperature derates should not be included in generator derates submitted to the NYISO Outage Scheduling Group.

3.2.1. Scheduled Generator Outage Coordination

Generator Outage Schedule is the basis for determining that the available ICAP meets the NYISO requirements. This generator Outage Schedule shows all anticipated generator outages for the current and next two calendar years and is prepared by the NYISO with the information submitted by GOs. Unless otherwise specified, this information is treated as confidential. The following procedure is used to produce this generator Outage Schedule.

NYISO Actions

1. Prepare load forecasts for weekly peak loads for the current and next two calendar years and include them in the NYISO Maintenance Load and Capacity Surveys.
2. Receive the individual GO's proposed Outage Schedules for the current and next two calendar years.
3. Determine schedule conflicts that cause available Operating Reserve to fall below requirements of the NYCA.
4. Coordinate schedule changes with the appropriate GOs to alleviate those projected deficiencies.
5. Prepare the following report that comprises the NYISO Generator Outage Schedules: NYISO Maintenance Load and Capacity Survey for the next two calendar years. The survey is posted only for the total NYCA.
6. Revise the NYISO Generator Outage Schedules upon receiving the GO's updates.

Generator Owner Actions

The NYISO Scheduling Department must be notified of outages as soon as practicable. This notification does not preclude notification to other NYISO departments that may be required, or the need for the GO to adjust affected MIS bids to reflect the generator outage.

1. Provide the NYISO Scheduling Department and local TO with unit outage and rescheduled unit outage requests, based on best available information at the time, no later than 30 calendar days before the first day of the operative TCC month. The generation asset owner may schedule or

reschedule a unit outage on a shorter time frame if the following conditions are met:

- a. The NYISO Scheduling Department and TO agree that there is no reliability criteria violation.
- b. The unit outage or rescheduled unit outage request must be submitted to the NYISO Scheduling Department and the TO within the minimum notification time of two calendar days.

Generation Owners are required to provide reasons for cancellation to be reviewed by the NYISO Scheduling Department, NYISO Grid Operations Department, and NYISO Market Monitoring and Performance Department.

2. Reschedule conflicting generator outages as required by the NYISO.

If the information provided is replacing or revising an earlier Outage Schedule that has been reported, the GO must request cancellation of the previous Outage Schedule when providing the new information.

The following information must be provided regardless of the method of notification:

- a. MIS Generator Name
- b. Generator Point Identifier (PTID)
- c. Derate to MW
- d. Generator DMNC
- e. Generator Owner Name
- f. Transmission Owner Sub-zone
- g. Reason for the Outage
- h. Start Date/Start Time of Outage
- i. End Date/End Time of Outage
- j. Name and Telephone Number of the Person Reporting the Outage Schedule
- k. Does this outage replace or modify an existing outage or record? (Y/N)
- l. Details if Yes.

See section 3.1 of the Outage Scheduler User's Guide for description. <https://www.nyiso.com/manuals-tech-bulletins-user-guides>

Examples of the information to be supplied to the NYISO Scheduling Department are presented in [Attachment B](#) of this manual.

3.2.2. On Shift Outage Procedures for Approved Generator Outage Schedules
NYISO Actions

When authorizing a scheduled generator outage:

1. Inform affected TOs of the impending generator outage.
2. Make all the necessary pre-outage verifications and adjustments to the NYISO monitored facilities, if any are required.
3. Update the status of the outage in the Online Outage Scheduler function.
4. Give the requesting GO authorization to remove the generator out of service after all necessary system adjustments are complete. If it is determined that the generator outage cannot be accommodated, the NYISO may cancel the outage for rescheduling at a later date.
5. Verify the post-contingency conditions for thermal, voltage, or stability violations after being notified by the GO that the generator is out of service. If the NYISO determines the reliability criteria will be violated as a result of the outage, the NYISO will take appropriate actions to correct the problem.
6. Inform the appropriate TOs of the generator outage.
7. After the generator is returned to service, take the necessary actions to remove restrictions placed on the NYISO monitored facilities.
8. When the generator is returned to service, inform the appropriate TOs.

Generator Owner Actions

Before starting the process of taking the generator out of service, notify the NYISO and local Transmission Owner of the intention to proceed with a scheduled generator outage and then wait for NYISO and TO authorization to proceed.

1. Notify the NYISO Grid Operations Department after the generator has been removed from service.
2. Before starting the process to restore the generator to service, submit a new bid and confirm the generator commitment.
3. Inform the NYISO Grid Operations Department immediately when any generator is restored to service and of any derated capacity or operational deficiency with the generator. The GO must take appropriate measures to correct the problem as soon as possible.

3.2.3. Inactive Reserves

A generator which is unavailable to produce Energy for a limited period of time not to exceed six months, for reasons that are not equipment related, as defined in the Market Services Tariff, is considered to be in

Inactive Reserves. Notification shall be provided to the NYISO Scheduling Department and local TO with unit outage no later than 30 calendar days before the first day of the operative TCC month.

NYISO Actions

Obtain the following information:

- a. Generator(s) involved in the outage
- b. Reason for the Outage
- c. Start Date/Start Time and End Date/End Time

Generator Owner Actions

Report to the NYISO Grid Operations Department the following information:

- a. Generator(s) involved in the outage
- b. Reason for the Outage
- c. Start Date/Start Time and End Date/End Time

3.2.4. Forced Generator Outages (Full or Partial)

A forced generation outage is a serious event that can impact power system stability and reliability. Depending on the capacity of the generator(s) affected, the power system can change from normal operational status to an emergency condition. Even if a single generator outage does not cause this effect by itself, it is extremely important that the NYISO knows the correct status of all generators located in the NYCA and/or serving load in the NYCA. In cases where generators suffer a full or partial outage, the following procedure will apply.

A Forced Outage is defined as "An unscheduled inability of a Market Participant's Generator to produce Energy that does not meet the notification criteria to be classified as a scheduled outage or de-rate as established in ISO Procedures." A Generator in a Forced Outage will no longer be ICAP eligible at the end of the month which contains the 180th day from the start date of the Forced Outage unless the Market Participant has Commenced Repair of its Generator. See the Market Services Tariff for a description of the evidence and decision regarding Commence Repair.

See the Market Services Tariff for additional information and criteria.

NYISO Actions

1. Obtain the following information about the generation forced outage:
 - a. Generator(s) involved in the outage
 - b. Reason for the full or partial generation outage
 - c. If unit advises it has not been forced offline but is not operating due to economic factors,

advise that a Forced Outage is not the appropriate outage and Generator should advise the NYISO it is in Inactive Reserves.

- d. Any special conditions related to the full or partial generation outage
- e. Start Date/Start Time and End Date/End Time of the generation outage
2. If a Forced Outage is greater than 120 days in duration, request status reports every thirty days from start date, unless no change to report from previous report; request confirmation of return date at 90 days.
3. Change generator status or limits appropriately in the Energy Management System.
4. Assess the post-contingency conditions for thermal, voltage, or stability violations, after being notified by the GO that a generator is out of service or derated. If the NYISO determines that the reliability criteria will be violated as a result of the outage, the NYISO will take appropriate actions to correct the problem.
5. Inform the appropriate TOs.
6. After the generator is returned to service, take the necessary actions to remove restrictions placed on the NYISO monitored facilities.
7. When the generator is restored to normal service, inform the appropriate TOs.

Generator Owner Actions

1. Inform the Transmission Owner and NYISO Grid Operations Department (through the TO as soon as possible).
2. Determine and report to the NYISO Scheduling Department the following information:
 - a. Generator(s) involved in the full or partial forced outage
 - b. Reason for the full or partial outage
 - c. Any special conditions related to the full or partial outage
 - d. Start Date/Start Time and End Date/End Time of the full or partial outage
3. If a Forced Outage is greater than 120 days in duration, provide status reports every thirty days from start date, unless no change to report from previous report. Provide confirmation of return date at 90 days.
4. If a Forced Outage has an expected return date not before 180 days, provide Repair Plan no later than 120 days from the start date. See the Market Services Tariff for description of a Repair Plan. Market Participant will have to Commence Repair of its Forced Out unit to continue its unit in a Forced Outage beyond the last day of the month in which the 180th

day from the start date falls. See the Market Services Tariff for a description of the evidence and decision regarding Commence Repair.

5. When a generator on full or partial forced outage becomes available for service again, it may submit a new bid in-day for potential commitment in the Real-Time Commitment (RTC), or Special Resource Evaluation (SRE), or Day-Ahead for potential commitment by Security Constrained Unit Commitment (SCUC).
6. Inform the NYISO Grid Operations Department through the TO immediately when any generator is available and of any derated capacity or operational deficiency with the generator.

3.2.5. Unscheduled Generator Outages (Full or Partial)

These procedures apply to GOs supplying (or wishing to qualify for supplying) ICAP to the NYISO, who require unscheduled and unplanned outages that arise due to a generator's auxiliary equipment failure or minor breakdowns. These outages require deratings or partial outages on the generator and do not meet the minimum notification time for scheduled generator outages. The procedure to manage these outages follows:

NYISO Actions

1. The NYISO will obtain the following information:
 - a. Reason for the unscheduled generator outage
 - b. Generator(s) involved in the outage
 - c. Any special conditions related to the outage
 - d. Requested Start Date/Start Time and End Date/End Time of the generator outage
2. Based on current generator outage information, perform a reliability assessment to determine capability adequacy.
3. Disapprove and inform the requesting GO if the unscheduled generator outage request will violate reliability criteria.
4. Coordinate a new schedule for the generator outage with the GO, if needed.

Generator Owner Actions

1. Notify the NYISO Grid Operations Department through the TO as soon as possible after determining that a generator will require an unscheduled full or partial outage.
2. Determine and report to the NYISO Scheduling Department the following information:
 - a. Generator(s) involved in the full or partial unscheduled outage
 - b. Reason for the full or partial outage

- c. Any special conditions related to the full or partial outage
- d. Start Date/Start Time and End Date/End Time of the full or partial outage
3. Adjust MIS bids to reflect the generator outage:
 - a. For day-ahead analysis, the bids must be adjusted before the closing time for the Day-Ahead Evaluation market.
 - b. For on shift requests, the necessary information must be available at the NYISO Grid Operations Department one hour before the closing time for the next Real-Time Commitment (RTC) evaluation period.
4. Coordinate a new schedule for the generator outage with the NYISO Scheduling Department, if needed.

3.2.6. Automatic Voltage Controlling Equipment and Power System Stabilizer Outages

Automatic voltage controlling equipment (AVCE), could include, but is not limited to, an Automatic Voltage Regulator (AVR) for non-inverter-based resources or inverters capable of automatic voltage control for inverter-based resources, and Power System Stabilizers (PSSs) on generating units play a very important part in maintaining both generator and power system stability during major disturbances. The NYISO requires that the controlling equipment and stabilizers remain in service during such disturbances unless damage to the generator is imminent. The NYISO keeps control and encourages minimization of outages of automatic voltage controlling equipment for maintenance or any other purpose. The following actions describe the procedure for requesting and approving maintenance of (AVCE) and PSSs.

NYISO Actions

1. Maintain a log of the AVCE and PSSs taken out of service, and their return to service.
2. Approve AVCE and PSS outage requests for routine maintenance contingent upon the following conditions:
 - a. No more than six AVCE on units greater than 40 MW capability or larger will be allowed out of service simultaneously throughout the NYCA, with a limit of three in the Area east of the Central/East Interface, and three more west of the Central/East Interface.
 - b. No more than one generator PSS that impacts a common Stability Limit will be allowed out of service throughout the NYCA.
3. Deny requests for routine maintenance outages of AVCE and PSSs if these conditions are not met or if power system conditions do not warrant such an outage.
4. Verify the log of AVCE and PSS outages when notified of an Emergency Outage. If the above

conditions are not met with the new outage, take the necessary steps to normalize conditions, including canceling routine maintenance in progress.

Generator Owner Actions

1. Coordinate with the NYISO the outage of AVCE and PSSs on generators with 20 MW capability or larger.
2. Maintain strong excitation fields at all times on all generators whose AVCE are out of service.
3. Request permission for routine AVCE and PSS outages from the NYISO Scheduling Department and notify the controlling TO of NYISO approval.
4. Notify the NYISO Grid Operations Department and controlling TO immediately of Emergency Outages of AVCE and PSSs.
5. Coordinate with the NYISO Scheduling Department to reschedule the outage when routine maintenance is denied.