

# *Ancillary Services Manual*

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### 3.5.3 Failure to Maintain Automatic Voltage Regulator in Service

- a) A Resource will be disqualified as a supplier of voltage support after it fails to maintain the automatic voltage regulator in operation and fails to commence timely repairs following a failure of the automatic voltage regulator within a 30-day period.

#### **Reinstatement of Payments**

The Supplier will not receive Voltage Support Service payments for the disqualified Resource until the Supplier complies with the following conditions:

- the Supplier provides documentation to the NYISO of the completion of the repairs,
- the Supplier's Resource successfully performs a Reactive Power (MVar) capability test, and
- the Resource provides Voltage Support Service for 30 consecutive days without any compliance failures. No payments for Voltage Support Service or LOC are made to the Supplier during this period.

## 3.6 Reactive Power Capability Testing or Demonstration

The purpose of the Reactive Power capability testing or demonstration is to establish a uniform procedure of determining, confirming, and documenting the Reactive Power capability of VSS Suppliers for real-time system voltage control. VSS suppliers must have a functioning automatic voltage regulator (AVR). The procedures set forth below provide the NYISO with accurate and timely information on the Reactive Power capability of the VSS Suppliers. The demonstration also provides confirmation that the supplier's AVR is in proper working condition and that the supplier is able to automatically adjust its reactive power production or consumption to properly control voltage.

Each year resources that participate in VSS must be tested to demonstrate both Lagging and Leading Reactive Power capability or must provide data collected during actual operation to demonstrate both Lagging and Leading Reactive Power capability. In all cases, the Supplier's AVR must be enabled and providing automatic voltage control during the demonstration period. Tests may take the form of demonstration of Reactive Power capability based upon actual generator output data or tests conducted pursuant to the procedures set forth in this Manual. Tests must be coordinated with the NYISO and the Transmission Owner (TO) in whose service territory the unit is located. Test data reports must be submitted electronically by the VSS Supplier within five (5) business days of the test to the NYISO for review and acceptance. The demonstrated performance of the Lagging Reactive Power capability tests is the basis for compensation to Suppliers of VSS.

#### **Definitions**

**Lagging MVar** — Reactive Power that is generated out of a generator and into the power system. By convention, lagging MVar is a positive (+) number.

**Leading MVAR** — Reactive Power that is absorbed by a generator out of the power system. By convention, leading MVAR is a negative (-) number.

### 3.6.1 Frequency, ~~and~~ Timing, and Other Requirements

At least once each calendar year each Resource providing Voltage Support Service must test or demonstrate both Lagging and Leading Reactive Capability. The demonstrated *Gross* Lagging MVAR capability will be the basis for compensation in the next compensation (calendar) year.

Both Lagging MVAR and Leading MVAR capability must be tested or demonstrated during the Summer capability period (May 1 through October 31, inclusive). Failure to test or demonstrate the resource's Reactive Power capability will result in the disqualification of the resource in the next compensation year. The Supplier's AVR must be enabled and providing automatic voltage control during the demonstration period.

Lagging MVAR capability testing will normally be performed during on-peak hours. The VSS Supplier must operate at maximum Lagging MVAR for at least one hour for the test to be acceptable.

The Leading MVAR testing will normally be performed during off-peak hours. The VSS Supplier must operate at maximum Leading MVAR for at least one hour for the test to be acceptable.

A VSS Supplier may schedule additional MVAR tests during the Summer capability period, however; only one test at a time may be scheduled. When scheduling an additional Reactive Capability Test, the VSS Supplier must again follow the test procedures given below. The VSS Supplier will be placed at the end of the queue for scheduling requests when requesting additional tests during a given capability period.

### 3.6.2 Test Procedure for Generators

Reactive Power capability tests are to be carried out under normal operating conditions. Extreme measures that might overstate a unit's reactive capability must be avoided. For example, measurements should be made with the unit operating with normal hydrogen pressure (or other normal coolant conditions). Both leading and lagging MVAR are to be measured at the generator terminal (gross) and, if metered data is available, at the point of interconnection (net). The lagging MVAR test must be performed at a net real power level of 90% (or greater) of the generator's Dependable Maximum Net Capability (DMNC). The leading MVAR test should be performed at the generator's minimum MW level (consistent with a real power level typical for off-peak or light load conditions).

The Transmission Owner is responsible for coordinating the test with the respective plant. Each Transmission Owner shall notify the NYISO at least one hour prior to the initiation of generator MVAR testing. The NYISO in turn notifies any other affected Transmission Owners. Test procedures are set forth below:

1. The VSS Supplier must notify the NYISO and the Transmission Owner (TO), at least five (5) business days prior to the day that the test is to be performed if the