

3.2 Supplier Qualification

The NYISO requires that VSS suppliers meet the following criteria. Each resource must:

- Be able to produce and absorb Reactive Power within its tested reactive capability range
 - *If the resource is precluded from running in “lead” mode in which it can absorb reactive power, then the unit is not eligible to provide Voltage Support Services.*
 - *The requirement to absorb Reactive Power can be waived for system reliability by the NYISO with input from the Transmission Owner in whose Transmission District the resource is located. The criteria for granting a waiver are: 1) whether the resource has the capability to produce Reactive Power that the NYISO determines in its judgment to be needed for system reliability, and 2) whether, in the judgment of the NYISO, it is not necessary for the Resource to have the ability to absorb Reactive Power.*
- Be able to maintain a specific voltage level under both steady-state and post-contingency operating conditions, subject to the limitation of its tested reactive capability
- Be able to automatically respond to voltage control signals; for a generator, a functioning Automatic Voltage Regulator (AVR) is required
- Be under the operational control of the NYISO, a Transmission Owner, or an External Control Area operator
- Successfully perform a Reactive Power (MVar) capability tests in accordance with the NYISO Procedures described below

In order to qualify to receive payments as a VSS Supplier the candidate Supplier, including previously disqualified VSS Suppliers that must re-qualify, must:

- complete a VSS Qualification Form. That form is provided as [Attachment A](#) of this manual. The Qualification Form must:
 - be completed by a representative of the Supplier and signed by a Vice-President (or equivalent signing authority) of the corporation
 - have generator documentation attached, including the manufacturer’s model number and specifications, and a generator reactive capability datasheet (“D-curve”)
 - have documentation that the synchronous generator or synchronous condenser has an automatic voltage regulator (AVR). This documentation shall include the voltage regulator block diagram and associated data

- include a statement of intent to provide Voltage Support Services ~~and attach documentation that the synchronous generator or synchronous condenser has an automatic voltage regulator (AVR). This documentation shall include the voltage regulator block diagram and associated data, the manufacturer's model number and specifications, and a generator reactive capability data sheet ("D-curve").~~
- return the Voltage Support Service Suppliers Qualification Form, and supporting data to:

Manager, Auxiliary Market Operations
New York Independent System Operator, Inc.
3890 Carman Road
Schenectady, NY 12303

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. [If granted a waiver for absorbing Reactive Power as described in section 3.6.6 of this manual, a resource is not required to demonstrate 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 ten (10) 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, 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. [If granted a waiver for absorbing Reactive Power as described in section 3.6.6 of this manual, a resource is not required to demonstrate Leading Reactive Power capability.](#) The demonstrated *Gross* Lagging MVAR capability will be the basis for compensation in the next compensation (calendar) year.

Small units at the same site may apply test results from one unit to another unit at the same site. In order to qualify for this treatment, the units must be electrically identical and must be less than 60 MW nameplate capacity. Qualification to apply test results from one unit to another requires one-time submittal of the D-curve and registration information for each unit, along with a request for this treatment, and pre-approval by the Manager, Auxiliary Market Operations. Each year, a test result form must be submitted for each unit that is requesting this treatment. The test form must reference the PTID of the unit at the site that actually performed the test and the date and time of the test.

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. [If granted a waiver for absorbing Reactive Power as described in section 3.6.6 of this manual, a resource is not required to demonstrate Leading Reactive Power capability.](#) 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.

3.6.6 Waivers of Requirement to Absorb Reactive Power (New Section)

[Three conditions must be met before the NYISO will consider waiving the requirement to absorb Reactive Power:](#)

- [1. The ability of the resource to produce Reactive Power must be determined by the NYISO to be needed for reliable system operation.](#)
- [2. The ability of the resource to absorb Reactive Power must be determined by the NYISO to not be necessary for reliable system operation.](#)

3. The resource must be unable, due to limitations of resource-related plant equipment, plant configuration, or system configuration to absorb Reactive Power.

If these three conditions are met, the NYISO will review the request for waiver with the Transmission Owner in whose Transmission District the resource is located and determine whether it will be granted.

All requests for waivers from absorbing Reactive Power must be made in writing to the Manager of Auxiliary Market Operations at the NYISO. These requests must include the specific resource(s) and the basis for requesting the waiver. Additional documentation may be required during the NYISO and Transmission Owner's reviews. Requests must be signed by an officer of the organization (or equivalent signing authority) and can be submitted to the following e-mail box or address:

vss_test_results@nyiso.com

Manager, Auxiliary Market Operations
New York Independent System Operator, Inc.
3890 Carman Road
Schenectady, NY 12303

With the exception of Voltage Support Service tests performed in 2008 for compensation in 2009, requests for waivers from absorbing Reactive Power must be submitted prior to the end of the test period.

Voltage Support Services Qualifications Request Form

- _____ Attached to this form is generator or synchronous condenser documentation, including manufacturer's model number and specifications, a generator reactive capability data sheet ("D-curve"), and documentation that demonstrates that the resource(s) listed below have an Automatic Voltage Regulator (AVR), including voltage regulator, block diagram and associated data, ~~manufacturer's model number and specifications, and a generator reactive capability data sheet ("D-curve")~~.
- _____ Attached to this form is a completed NYISO Reactive Power Capability Test Report documenting that the resource(s) listed below have successfully performed Reactive Power capability testing during current calendar year.

The resource(s) listed below will participate in Voltage Support Ancillary Service under the direction of the NYISO and agree to comply with all applicable rules and procedures associated with NYISO voltage and Reactive Power control.

<i>Resource</i>	<i>Type (Generator or Synchronous Condenser, etc.)</i>	<i>Location</i>	<i>NYISO ICAP DMNC or Nameplate</i>	<i>NYISO MIS PTID</i>	<i>Generator MW Capability</i>

Market Participant Information:

Officer's Signature	Date
New York ISO Approval:	
Manager, Auxiliary Market Operations	Date