

# *System Restoration Manual*

*April 2016*

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### **3.1.3 Inclusion of Black Start Resources in the Con Edison SRP**

NYSRC Reliability Rule G-R4 requires that the NYISO have procedures and implement actions to provide for the inclusion or continued inclusion of an eligible Black Start Resource in the Con Edison SRP if it would provide a material benefit to the Con Edison SRP. The NYISO procedures adopted to satisfy NYSRC Reliability Rule G-R4 are found in the Services Tariff, Rate Schedule 5, Section 15.5.4 (available from the NYISO Web site at the following URL:

[http://www.nyiso.com/public/markets\\_operations/documents/tariffs/index.jsp](http://www.nyiso.com/public/markets_operations/documents/tariffs/index.jsp)).

### **3.1.4 Testing Procedures**

Each Generator Operator with a Black Start Resource shall prepare Black Start Resource specific testing procedures, perform Black Start Resource tests, and maintain records of such testing, in accordance with the testing requirements set by the Transmission Operator to verify the unit's ability to, following a system-wide blackout, start up and fulfill its requirements in the SRP without the availability of an outside electric supply.

Gas turbine, combined cycle, and hydro black start units shall complete a successful test of the startup and operation of each of those black start facilities included in the NYISO and Transmission Owner SRPs for each Capability Year. These units shall be tested for successful equipment startup and energize a transmission element or a generating station switchyard element and verify stable operation while isolated from the bulk power system for a minimum of ten minutes, unless more stringent requirements are specified by the Transmission Owner.

Steam black start units shall complete a successful test of the startup and synchronization to the transmission system of each unit included in the NYCA SRP every three Capability Years. In addition, completion of successful tests requiring isolation from the transmission system, but not requiring startup and synchronization with the transmission system, shall be conducted during each intervening Capability Year. This intervening test shall be conducted as follows: 1) a black start gas turbine isolated from the transmission system shall energize the internal light and power bus of the steam black start unit; and 2) auxiliary loads required to introduce fire into the boiler (fans, pumps, etc.) shall be added to the internal light and power bus. The intervening year's test does not require fire in the boiler or synchronization to the transmission system. The NYISO will specify which steam units shall be tested during each Capability Year in accordance with the above testing requirements.

Each Generator Operator, for each Black Start unit, shall annually provide a letter to the NYISO confirming that it identifies and maintains a list of critical components in its facilities (i.e., batteries, diesel back-up generators, inverters, etc.) to verify the condition of these critical components in accordance with good industry practice.

The most current test procedure shall be provided to the NYISO, and in the case of local Black Start Resources, to the appropriate TO, upon request.

### **3.1.5 Testing Frequency**

At least once each capability year each Black Start Facility in the NYISO's Reliability Coordinator Area must successfully test or demonstrate the ability of their Black Start unit(s) to perform their intended function as required by the NYISO's or local TO's SRP.

The NYISO shall designate which units shall be tested during each capability year in accordance with the testing requirements listed above.

The NYISO shall determine the time within the capability year that the testing shall be completed.

Tests must be coordinated with the NYISO and the TO in whose service territory the unit is located.

### **6.3 Generator Operator Restoration Training**

Each Generator Operator shall participate in NYISO restoration drills, exercises, or simulations as requested by the NYISO.

Each Generator Operator with a Black Start Resource shall provide a minimum of two hours of training every two calendar years to each of its operating personnel responsible for the startup of its Black start Resource generation units and energizing a bus. The training program shall include training on the following:

- System restoration procedure elements requiring coordination with the TO
- Procedures for starting each Black Start Resource and energizing a bus

Each Generator Operator with a Black Start Resource shall maintain training program records showing that operating personnel have been trained in the implementation of Black Start procedures. These records shall be made available to the NYISO upon request.