

## ISO New England Operating Procedure No. 11 Black Start Capability Testing Requirements

Effective Date: April 13, 2012

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**REFERENCES:**

- (1) NERC Reliability Standard EOP-002 - Capacity and Energy Emergencies
- (2) NERC Reliability Standard EOP-005 - System Restoration from Blackstart Resources
- (3) NPCC Directory #8 – System Restoration
- (4) NPCC Directory #2 – Emergency Operations
- (5) ISO New England Operating Procedure No. 6 - System Restoration (OP-6)
- (6) ISO New England Operating Procedure No.14 – Technical Requirements for Generation, Demand Resources and Assest Related Demands (OP-14)
- (7) ISO New England SOP-RTMKTS.0180.0080 – Process Blackstart Unit Testing
- (8) ISO New England Inc. Transmission, Markets and Services Tariff , FERC Electric Tariff No.3, Section II, Open Access Transmission Tariff (OATT) Schedule 16

**Local Control Center Instruction No:**

CONVEX:	None
MAINE:	None
NEW HAMPSHIRE:	None
NSTAR:	None
REMVEC II:	None
VELCO:	None

## **I. INTRODUCTION**

An integral portion of any system restoration is the provision of generators with blackstart capability. By definition, a blackstart generator is capable of being started without an outside electrical supply as determined by ISO, and for the purpose of this document, also participates in ISO's Schedule 16 Blackstart program. Blackstart generators are expected to be manned, generating, and prepared to pick up additional load within ninety (90) minutes of receiving instructions to initiate blackstart operations. Once started, blackstart generators begin the process of starting and synchronizing other Generators that are not blackstart capable and also energizing transmission. This Operating Procedure (OP) outlines requirements for testing blackstart generators that provide System Restoration and Planning Service under Schedule 16 of the Open Access Transmission Tariff (Schedule 16). These tests will provide training for power plant operators, and provide ISO and the Local Control Centers (LCCs) with up-to-date information concerning the blackstart process for system restoration.

The process of starting blackstart generators, establishing system configurations, which will allow the energizing of transmission circuits to generators that are not providing System Restoration and Planning Service and the subsequent synchronizing of these unit(s), is the basis of ISO New England Operating Procedure No. 6 - System Restoration (OP-6). Therefore, it is prudent to test each blackstart generator that participates in the Schedule 16 blackstart program in preparation for the possibility of a system restoration event.

## **II. TESTING**

All designated blackstart generators listed in Appendix A of this OP shall annually perform a blackstart test of the generator without dependency on the interconnected system or other unrelated generator support. Market Participants may also choose to conduct blackstart tests as part of their scheduled Annual Inspection outages.

Tests should include key operating aids used in a blackstart event, such as telephone communications and SCADA, if applicable. The time required for the test should include startup of the generator plus station service switching time. Prior to beginning the blackstart test, station personnel shall notify ISO and the appropriate LCC, and receive approval in cases where the test will delay the planned start-up or shutdown time of the generator or other generators. ISO will review and verify that the generator passed its blackstart test. A successful test will require a minimum of 10 minutes of stable generator operation.

## **III. TEST SCHEDULING**

All designated blackstart generators listed in Appendix A shall test blackstart capability at least once every year at the Market Participant's convenience. These tests will be coordinated with ISO. Market Participants who plan their tests during a scheduled Annual Inspection outage should schedule this through the ISO Generation Coordinator. Appendix A lists blackstart generators that are affected by this OP.

**IV. REPORTING**

Many Market Participants already have a company blackstart test procedure in place and those Market Participants should simply file their company's report on these tests with ISO and their LCC. Within 24 hours of conducting a blackstart test, all Market Participants shall verbally notify ISO and their LCC indicating the success or failure of the blackstart test. Within 30 days of performing a blackstart test; the Market Participant shall submit blackstart test results per SOP-RTMKTS.0180.0080 - Process Blackstart Unit Testing to ISO and their LCC. ISO shall compile the results of the blackstart tests and publish an Annual Blackstart report for distribution to the System Restoration Working Group (SRWG) in accordance with the ISO New England Information Policy.

**V. NERC CRITICAL INFRASTRUCTURE PROTECTION REIMBURSEMENT**

Blackstart stations participating in the Schedule 16 blackstart program, that are comprised of one or more designated blackstart generators and sharing blackstart equipment, may be required to meet North American Electric Reliability Corporation (NERC) Critical Infrastructure Protection (CIP) Reliability Standards as a result of providing System Restoration and Planning Service. A blackstart station designated by ISO as a Northeast Power Coordinating Council Inc. (NPCC) Basic Minimum Power System (BMPS) Key Facility is eligible to receive compensation for incurring such costs beginning June 1, 2012. Blackstart stations requesting compensation must confirm to ISO that CIP expenditures have been incurred. The request for CIP Cost compensation and confirmation of CIP-related expenditures will be made by the Lead Market Participant through the submittal to the ISO of the form found in Appendix C of this OP.

**VI. COMPLIANCE ASSESSMENT**

All Market Participants that have a designated blackstart generator listed in Appendix A of this OP must perform a blackstart test of the generator annually. Additionally, Appendix B of this OP contains groups of generator stations, which, for the viability of the restoration plan in certain critical areas of New England, must meet certain pass requirements.

A Market Participant that has a designated blackstart generator listed in Appendix A that does not pass a blackstart test for a given year due to equipment failure will be expected to commit to and submit a plan for repair and retest of the generator. This plan is subject to approval by ISO.

## VII. OP 11 REVISION HISTORY

**Document History** (This Document History documents action taken on the equivalent NEPOOL Procedure prior to the RTO Operations Date as well revisions made to the ISO New England Procedure subsequent to the RTO Operations Date.)

Rev. No.	Date	Reason
Rev 0	07/22/98	
Rev 1	07/09/99	
Rev 2	02/01/05	Updated to conform to RTO terminology
Rev 3	05/06/05	Update for initiation of VELCO Local Control Center and NERC Version 0 Standards
Rev 4	10/13/06	Updated Reporting section to ensure business requirements are met
Rev 5	04/13/12	Biennial review by procedure owner; Revised References used to support OP 11; Added NSTAR Local Control Center Instruction reference, Clarified who has to perform an actual blackstart test; Globally defined and used LCC as acronym for Local Control Center;; globally defined and used OP as acronym for Operating Procedure Replace "the ISO" with the acronym "ISO", per Manual 35, where applicable Added section for NERC CIP recovery starting June 1, 2012 Clarified compliance requirements Clarified startup time frame requirements Added new Appendix C

## VIII. APPENDICES

Appendix A – Black Start Generators in the New England Reliability Coordinator Area / Balancing Authority Area (Confidential)

Appendix B – Black Start Groups of Stations That Must Meet Certain Pass Requirements (Confidential)

Appendix C – Black Start Generator CIP Costs Compensation Form