

Operating Procedures

ISO New England Operating Procedure No. 11

Black Start Capability Testing Requirements

Effective Date: October 13, 2006

Revision No. 4

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

Effective Date: October 13, 2006

- REFERENCES:
- (1) NERC Standard EOP-002 - Capacity and Energy Emergencies
 - (2) NERC Standard EOP-005 - System Restoration Plans
 - (3) Standard – EOP-007- Establish, Maintain, and Document a Regional Blackstart Capability Plan
 - (4) NPCC Procedure A-3 - Emergency Operation Criteria
 - (5) NPCC Procedure C-20 - Procedures During Abnormal Operating Conditions
 - (6) ISO New England Operating Procedure No. 6 - System Restoration

Local Control Center Instruction No:

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

I. INTRODUCTION

An integral portion of any system restoration is the provision of Generators with black start capability. By definition, a Black Start Generator is capable of being started without an outside electrical supply as determined by the ISO. Generators claiming Black Start Capable should strive to achieve the fastest start time possible within a two-hour time frame. As a result, the Generators are expected to be manned and prepared to commence generation within ninety (90) minutes of receiving instructions to initiate black start operations. Once started, Black Start Generators begin the process of starting and synchronizing other Generators that are not Black Start Capable and, energizing and synchronizing transmission. This Procedure outlines requirements for testing Black Start Generators. These tests will provide training for power plant operators, and provide the ISO and the Local Control Centers with up-to-date information concerning the black start process for system restoration.

The process of starting Black Start Generators, establishing system configurations, which will allow the energizing of transmission circuits to Generators that are not Black Start Capable, 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 Black Start Generator in preparation for the possibility of a system restoration. The ISO and Local Control Centers currently test other emergency procedures, such as load shed simulation and voltage reduction tests, on a regular basis.

II. TESTING

All Generators designated Black Start Capable shall perform an actual black start of the Generator without dependency on the interconnected system or other unrelated Generator support. Market Participants may also choose to conduct black start tests as part of their scheduled Annual Inspection outages.

Tests should include key operating aids used in black starts such as telephone communications and SCADA, if applicable. The time required for the test should include ICU start-up, normal start-up of the Generator plus station's service switching time to the actual synchronizing of the Generator. Prior to beginning the black start test, station personnel shall notify the ISO and the appropriate Local Control Center, and receive approval in cases where the test will delay the planned start-up or shutdown time of the Generator or other Generators. The ISO will review and verify that the Generator passed its black start test. A successful test will require a minimum of 10 minutes of stable Generator operation.

III. TEST SCHEDULING

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

IV. REPORTING

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

V. COMPLIANCE ASSESSMENT

All Participants that have a black start Generator identified in Appendix A must test the Generator annually. Failure to do so will result in a finding of non-compliance with this Procedure as well as applicable NERC and NPCC requirements. As an Area, New England must successfully test 95% of the Black Start Generators identified in Appendix A. Additionally, Appendix B 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.

Participants that do not pass a black start 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.

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