
 © ISO New England, Inc. 2024	Master/LCC Procedure No. 11 - Maintenance and Verification of New England System Restoration Plan, Attachment G
	Revision Number: 2.1 Revision Date: February 21, 2024
Owner: System Restoration Working Group (SRWG) Chair	Approved by: M/LCC Heads
	Review Due Date: February 21, 2025

Attachment G - Designated Blackstart Resource Evaluation Method

Table of Contents

1. Objectives	2
2. Responsibilities.....	2
3. Calculation of Overall New England DBR MW Target.....	3
4. Consideration of DBR Interconnection Voltage	5
5. Identification of At-Risk Local Areas.....	6
6. Attachment G Revision History	7

*This document is controlled when viewed on the ISO New England Internet web site. When downloaded and printed, this document becomes **UNCONTROLLED**, and users should check the Internet web site to ensure that they have the latest version.*

	© ISO New England, Inc. 2024	Master/LCC Procedure No. 11 - Maintenance and Verification of New England System Restoration Plan, Attachment G
		Revision Number: 2.1 Revision Date: February 21, 2024
Owner: System Restoration Working Group (SRWG) Chair		Approved by: M/LCC Heads
		Review Due Date: February 21, 2025


1. Objectives

This procedure is intended to assist the System Restoration Working Group (SRWG) in calculating an approximate desired MW amount of Designated Blackstart Resources (DBRs) for the overall New England System Restoration Plan (the Plan). It also serves to aid in decisions about adding new DBRs based on interconnection voltage levels, as well as replacement of existing DBRs that may be at-risk due to Resource age. The method employed in this Attachment is not intended to replace any study requirements pertaining to DBRs, but rather to provide tools for the SRWG to broadly quantify a desired target amount of DBR MW for the Plan and to assist in identifying potential areas of the Plan where it may be beneficial to add or remove DBRs.

2. Responsibilities

The SRWG will use the methods found in this Attachment to assist in evaluating whether the number, size, location and diversity of DBRs are sufficient to meet the needs of the Plan.

The SRWG will use the methods found in this Attachment to assist in determining whether a prospective DBR would be advantageous to the existing Plan.

	© ISO New England, Inc. 2024	Master/LCC Procedure No. 11 - Maintenance and Verification of New England System Restoration Plan, Attachment G
		Revision Number: 2.1 Revision Date: February 21, 2024
Owner: System Restoration Working Group (SRWG) Chair		Approved by: M/LCC Heads Review Due Date: February 21, 2025

3. Calculation of Overall New England DBR MW Target

A. The SRWG Chair (or designee) will determine the DBR MW target using the following calculation:

1. Determine the total number of Generator Assets with a cold startup + notification of more than 30 minutes and less than or equal to 4 hours.

NOTE

In Step 2, the value of 10 represents average station service load in MW.

2. Multiply the value from Step 1 by 10.
3. Determine the total number of nuclear power stations in New England.

NOTE

In Step 4, the value of 20 represents average station service load in MW.

4. Multiply the value from Step 3 by 20.

NOTE

In Step 5, multiplying by 1.2 provides a 20% outage factor for New England DBRs.

5. Add the value from Step 2 to the value from Step 4 and multiply by (1.2).

NOTE


In Step 6, Summer Seasonal Claimed Capability (S-SCC) MW values for non-hydro DBRs should be obtained from the most recently published Forecast Report of Capacity, Energy, Loads, and Transmission (CELT Report). Non-hydro DBRs that have been in-service at least 35 years are classified as “at-risk” from market, material, or environmental forces.

6. Determine the total Summer Seasonal Claimed Capability (S-SCC) of non-hydro DBRs which have been in-service at least 35 years.

NOTE

In Step 7, the value is a target value for DBR MWs in New England. The SRWG will ultimately determine whether the exact amount of DBR MWs of the fleet is sufficient to meet the goals of the Plan.

7. Add the value from Step 5 to the value from Step 6.

	© ISO New England, Inc. 2024	Master/LCC Procedure No. 11 - Maintenance and Verification of New England System Restoration Plan, Attachment G
		Revision Number: 2.1 Revision Date: February 21, 2024
Owner: System Restoration Working Group (SRWG) Chair		Approved by: M/LCC Heads
		Review Due Date: February 21, 2025

8. Determine the total MVA Nameplate of all DBRs.


<p style="text-align: center;">NOTE</p> <p style="text-align: center;">In Step 9, multiplying by 0.8 provides a DBR MW total assuming 0.8 pf.</p>
--

9. Multiply the value from Step 8 by 0.8.

10. Compare the value from Step 7 to the value of Step 9.

11. Evaluate whether DBRs should be added to or removed from the Plan based upon the comparison from Step 10.

Target DBR MWs = [(# Generator Assets with Cold Startup between 30 minutes and 4 hours)*10 MW+(# Nuclear power stations)*20 MW]*1.2 + (S-SCC of non-hydro DBRs >=35 years old)

	© ISO New England, Inc. 2024	Master/LCC Procedure No. 11 - Maintenance and Verification of New England System Restoration Plan, Attachment G
		Revision Number: 2.1 Revision Date: February 21, 2024
Owner: System Restoration Working Group (SRWG) Chair		Approved by: M/LCC Heads
		Review Due Date: February 21, 2025

4. Consideration of DBR Interconnection Voltage


<p style="text-align: center;">NOTE</p> <p>The DBR Voltage Point Target range is 36-42 points based upon 6-7 system restoration islands. Two (2) DBRs per island at 345 kV is optimal.</p>

A preference for DBRs interconnected at higher voltages was previously established in the SRWG Optimal Blackstart Assessment Study conducted in 2009. This study determined that a “top-down” approach, with DBRs connecting at higher voltages, would be more efficient for achieving the Plan objectives. To reflect this, and the recent commissioning of several new DBRs interconnecting at 115 kV into the Plan, the SRWG’s evaluation of whether DBRs should be added or removed from the Plan, shall use the following voltage point values in the calculations described below:

DBR interconnection voltage	Voltage Point Value
345kV and 115kV	3
230kV	2
All other	1

A. The SRWG Chair (or designee) will determine the total voltage point value of the DBR fleet using the following calculation:


1. Determine the interconnection voltage of each DBR.
2. Determine the electrical substation to which each DBR is connected.
3. Remove from the calculation all but one DBR at each electrical substation connected at the same voltage level (i.e., if two DBRs connect at the same substation bus, only one DBR should be counted in the point calculation; however, two DBRs interconnected at different voltage levels at the same substation would each be counted in the point value calculation)
4. Multiply each DBR remaining by the appropriate point value shown in the table above.
5. Add the point values from Step 4.
6. Compare the point total from Step 5 to the DBR Voltage Point Target range of 36-42 points.
7. Evaluate whether DBRs should be added to or removed from the Plan.

	© ISO New England, Inc. 2024	Master/LCC Procedure No. 11 - Maintenance and Verification of New England System Restoration Plan, Attachment G
		Revision Number: 2.1 Revision Date: February 21, 2024
Owner: System Restoration Working Group (SRWG) Chair		Approved by: M/LCC Heads
		Review Due Date: February 21, 2025

5. Identification of At-Risk Local Areas

The SRWG Chair (or designee) will determine if any local areas of the Plan are at risk by:

1. Accessing the most recently published Forecast Report of Capacity, Energy, Loads, and Transmission (CELT Report).
2. Determining whether removing all at-risk (described above in Section 3, Step 6) DBRs from a path compromises completion of that path's objectives.
3. Evaluating whether DBRs should be added to the Plan to enhance a local area of the Plan that could be compromised by DBR's identified to be at-risk.

	© ISO New England, Inc. 2024	Master/LCC Procedure No. 11 - Maintenance and Verification of New England System Restoration Plan, Attachment G
		Revision Number: 2.1 Revision Date: February 21, 2024
Owner: System Restoration Working Group (SRWG) Chair		Approved by: M/LCC Heads
		Review Due Date: February 21, 2025

6. Attachment G Revision History

Rev. No.	Date	Reason
Rev 0	09/09/15	Initial Draft
Rev 0.1	08/28/17	Periodic review completed by procedure owner requiring no changes. Made administrative changes required to publish a Minor Revision (including required corporate identity in all page footers;
Rev 0.2	06/05/19	Periodic review completed by procedure owner requiring no changes. Made administrative changes required to publish a Minor Revision (including updating the Procedure Owner in each page Header;
Rev 0.3	05/15/20	Periodic review completed by procedure owner requiring no changes. Made administrative changes required to publish a Minor Revision (including restoring the required information and disclaimers in each page Footer
Rev 0.4	04/16/21	Periodic review completed by procedure owner requiring no changes
Rev 1	03/03/22	Annual review by procedure owner; Changed document owner. Changed 115kV DBR interconnection voltage point value from 2 to 3. Recently commissioned DBRs at 115 kV with subsequent termination of existing DBRs.
Rev 2	03/01/23	Annual review by procedure owner; Section 3.A. Step 8: Replacing S-SCC of DBR assets with MVA Nameplate. Step 9: Added multiplying total DBR MVA Nameplate by 0.8 assuming 0.8 pf. MVA Nameplate increases assessment accuracy as DBRs are sub-asset.
Rev 2.1	02/21/24	Annual review performed by procedure owner requiring no changes; Made administrative changes required to publish a Minor Revision; This revision is not the result of a permanent planned or unplanned BES modification; This revision does not change the ability, through roles or specific tasks of one or more entities identified in the Plan, to implement the approved Plan; This revision does not impact the ability of ISO-NE to monitor and direct restoration efforts.