Table of Contents

3. Black start test

2
3. Black start test

Note: This information is a draft version only and all content is currently being reviewed.

The term ‘black start test’ as used in this guideline refers to the full test of the installed emergency electricity generating and switching systems designed to operate on the occasion of a break in the supply of mains generated electricity to the facility. A black start test commences with the opening of the circuit breakers on the incoming mains feeders and concludes with the successful reconnection of the facility to the mains feeders. Refer to the black start test checklist for all requirements.

Note: A simulation of a system failure, where the emergency generators are manually caused to start without the incoming circuit breakers being opened, is not considered an acceptable black start test.

Purpose

The purpose of the black start test is to prove that the emergency electricity supply performs as an integrated system in the restoration and continued delivery of power supplies to critical areas in an orderly manner. It is also used to prove the orderly restoration of supplies once the normal source of power supply has been restored. A black start test must be planned, designed and executed to demonstrate the proper operation of the entire system, rather than to demonstrate the correct operation and/or exercise of just component parts of the system.

Conduct

The test should be conducted with all normal loads connected and operating to replicate, as far as possible, the circumstances that may exist at the time of random failures. Critical items of equipment should not be isolated as the test should be used to gain an understanding of the performance of all hospital equipment and procedures under conditions of power failure and restoration. It is also imperative that loads should be representative of actual operations to demonstrate the capability of generators and ancillary systems such as load staging.

The suggested sequence of actions is shown in the black start test checklist. It is not prescriptive and should be adapted to suit the requirements of each particular facility.

Success of Test

A test is only deemed successful if, under normal operating conditions, the system works as designed, results in power being supplied to the essential areas and continues to operate for one hour.

Report

On completion of the test a report is to be presented to facility management for consideration. The report is to contain details of the test results, comment on the operation of the contingency plans, and any human resources, staff and customer communications and management issues. The report is also to include a statement of any remedial action taken as a result of the test. A suggested format is shown in the Department of Health and Human Services facilities by category. After endorsement by facility management a copy of the report is to be forwarded to the Infrastructure Planning and Delivery (IPD) branch. Refer to the black start test report proforma to ensure all requirements are met.