



*Working to Perfect the Flow of Energy*

# PJM Manual 12: Balancing Operations

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Prepared by Chris Pilon  
Dispatch

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## Section 4: Providing Ancillary Services

### 4.6 Black Start Service

#### 4.6.12 Testing

Every generating unit that is providing black start capability shall be tested to verify that it can be started and operated without being connected to the PJM power system. Black start generating unit owners/operators shall annually schedule tests of resources providing black start capability to confirm the ability of such resources to meet the applicable standards for performance and control.

Tests may be scheduled at the discretion of the generation owner, however, tests must be prescheduled with PJM prior to the test. Compensation for energy output delivered to the system shall be provided for the unit's [soak time plus](#) minimum run time at the higher of the unit's cost-capped offer or real-time LMP, plus start-up and no-load costs for up to two start attempts, if necessary. Any unrecovered costs of Black Start Tests should be submitted in writing to the Manager of Market Settlements.

For units with high operating rates with the ability to remain operating at reduced levels when automatically disconnected from the grid, an opportunity cost will be provided to compensate the unit for lost revenue during the black start testing.

Annual tests shall include:

- Starting and bringing the resource to synchronous speed without assistance from a system electrical feed or demonstrating the ability to remain operating at reduced levels when automatically disconnected from the grid.
- Testing of all communication circuits.
- Simulating switching needed to connect the black start unit to the transmission system following a system blackout.
- Testing the features unique to each facility that relate to Black Start Service.

For New Units:

For a generator that is a new Black Start Unit, revenue requirements must be submitted to PJM and the MMU through the eDART upload process. Next, the unit must successfully pass a Black Start Service test according to their plant's procedures (and restoration plan requirements), and submit the test results to PJM using the PJM Black Start Test Report Form (Attachment C). Upon successful completion of the Black Start Service test, the payment start date is the 1st day of the next month following the receipt of both test and cost data.

For Units Integrating into PJM:

For an existing Black Start Unit which has recently been integrated into the PJM Region, the Black Start Unit owner must send revenue requirements to PJM and the MMU through the eDART upload process at least one month prior to joining PJM. The unit must successfully pass a Black Start Service test within 6 months of integration then submit the test results to PJM using the PJM Black Start Test



Report Form (Attachment C). The payment start date is the 1st day of integration.

For Recertifying Units:

After the Black Start Unit has been decertified due to failure to complete testing requirements, the Black Start Unit will be considered a new unit for purposes of testing, and must recertify by conducting a successful Black Start Service test. PJM will reinstate the unit's payment in the next month after the successful test is performed.