Load Bank Testing

Even though generators are regularly "exercised,' the only way to verify that an emergency power supply system will perform to its rated load in an emergency is to perform a load bank test. A generator may appear to be running fine when it carries perhaps 30% of its rated load, but all sorts of failures and problems might occur when it's increased to 100%.

Load bank testing is an important part of preventive maintenance. In addition to verifying that a generator can deliver power as rated, it can also be used to:

- test the general condition of the engine
- test the condition of the cooling system
- identify potential problems before an emergency
- burn off carbon in the exhaust system

How it Works

A load bank test places a controlled load on the generator. The load is gradually increased in specified increments over time. At each stage, the technician records engine temperature, pressure levels and voltage output until he verifies that 100% of the nameplate kW loading is achieved. By performing this preventive test, facility managers can identify points of failure before an emergency strikes and avoid overtime repair and rush charges on replacement parts.

Load bank test reports should include:

- Kilowatt load
- AC voltage
- Oil pressure
- Engine temperature
- Hertz
- Amperage rating
- Voltage tested
- Identification of other trouble spots

A Required Test

The NFPA requires load bank testing for acceptance testing upon initial installation of level 1 and level 2 systems and periodically thereafter depending upon the application. Data centers, healthcare facilities and other critical applications require monthly testing, while other facilities may require quarterly or annual load bank tests.

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