

## Power Up With a Load Management System: Identifying Load Management System Applications

Part 1 of a 3-part series

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*Load management systems can improve flexibility, versatility, and power quality of a power generation system. This three-part series explores tips for setting up load management systems along with guidelines for seven load management methods.*

*This first installment focuses on appropriate applications of load management systems where controlling load priorities can improve power quality to critical loads.*

### WHAT IS LOAD MANAGEMENT

A load management system allows industrial management and facilities engineers to control when a load is added or shed from a power system, making paralleling systems more robust and improving power quality to critical loads on many power generation systems.

In the simplest form, load management, also called load add/shed or load control, allows removal of non-critical loads when the capacity of the power supply is reduced or unable to support the entire load. If the non-critical loads are removed, critical loads can retain power under circumstances where they could otherwise experience poor power quality due to an overload condition or lose power due to a protective shutdown of the power source. It allows for removal of non-critical loads from the power generation system based on certain conditions such as a generator overload scenario. Load management enables loads to be prioritized and removed or added, based on

certain conditions such as generator load, output voltage, or AC frequency.

On a multi-generator system, if one generator shuts down or is unavailable, load management enables lower priority loads to be disconnected from the bus. This ensures that the critical loads are still operational even with a system that has an overall capacity lower than originally planned. In addition, by controlling how many and which non-critical loads are shed, load management can enable a maximum number of non-critical loads to be supplied with power based on the actual system capacity.

In many systems, load management can also improve power quality. For example, in systems with large motors, the starting of the motors can be staggered to allow a stable system as each motor starts. Load management can further be utilized to control a load bank so when loads are below a desired limit the load bank can be activated, ensuring proper operation of the generator.

Load management may also provide load relief so that a single generator can connect to the bus without being overloaded immediately. Loads can be added gradually, with a time delay between adding each load priority, enabling the generator to recover voltage and frequency between steps.