Claims

1. A power allocation system suitable for retrofitting into a power supply system including at least two segregated power system sections thus constituting two redundancy groups, each of the two redundancy group defining a segregated section comprising at least one of a power generator and a power consumer being connected through an AC switch board,

wherein the power allocation system comprises at least one energy storage and an energy management unit connected to an energy storage system comprising an energy storage system distribution board,

wherein the energy storage distribution board is coupled independently to an AC switchboard of each of the at least two segregated power system sections through an AC connection and is adapted to detect power fluctuations in said redundancy group supply power to or from a battery through the energy storage system distribution board, and

wherein each redundancy group includes sensors monitoring power consumption and generation of each groups and the energy, the power allocation system including a communication system for receiving the information from said sensors, the energy management unit distributing power based on the information from said sensors.

2. The power allocation system according to claim 1, wherein said energy storage system distribution board includes protection units between the connected segregated power system sections.

3. The power allocation system according to claim 1, being adapted to be connected over an existing bustie between the redundancy groups.

4. A method for allocating power to a segregated power supply system sections for vessels comprising at least two segregated power system sections thus constituting at least two redundancy groups, comprising at least one of a power generator and a power consumer being connected through an AC switch board,

the system also comprises a power allocating system including an energy storage system and being connected to each redundancy group switch boards though an AC connection including the steps of monitoring power consumption and generation in each of the at least two redundancy groups and at a detected power fluctuation in a group, and

allocating power to or from each of the at least two segregated power system sections based on said monitored power consumption and generation.

5. A method according to claim 4, wherein the power allocation also involves load sharing by controlling a power flow between generators over the ESS switchboard.

6. A method according to claim 4, wherein power is supplied to said segregated power sections based on predetermined information about the consumers and generators in the section.

7. A power allocation system for retrofitting into a power supply system including at least two segregated power system sections thus constituting two redundancy groups, each redundancy group defining a segregated section comprising at least one of a power generator and a power consumer being connected through an AC switch board,

wherein the power allocation system comprises at least one energy storage and an energy management unit connected to an energy storage system comprising an energy storage system distribution board,

wherein the energy storage system distribution board is coupled independently to an AC switchboard of each of the at least two segregated power system sections through an AC connection and is adapted to detect power fluctuations in said redundancy group supply power to or from a battery through the energy storage system distribution board,

wherein the system also comprises input for receiving information from each of the at least two segregated sections through a chosen communication system, including information related to power consumption and generation in each segregated section, said energy management unit calculating the required distribution of power in said sections.