the product to the first-order delay circuit 123. Subsequently, the first-order delay circuit 123 multiplies the output value of the multiplier 122a by the transfer function {1/(1+sM/D)} to calculate the first frequency deviation $\Delta\omega_1$, and outputs the first frequency deviation $\Delta\omega_1$ to the first governor controller 113, to the first command value generator 102, and to the subtractor 217.

[0058]

The first governor controller 113 is the same functional block as that of the first embodiment, multiplies the first frequency deviation $\Delta\omega_1$ output from the first VSG controller 101a by the transfer function {K/(1+sT)}, and outputs the resulting value to the subtractor 111a, where the time constant T and the gain K are the same as those in the first embodiment.

[0059]

In step S22 illustrated in FIG. 7, the first command value generator 102 uses the first frequency deviation $\Delta\omega_1$ calculated by the first VSG controller 101a to generate a first frequency command value f_{v1}, which is the frequency command value of the output voltage, as the control command value for the inverter 42. The first command value generator 102 then outputs the generated first frequency command value f_{v1} to the inverter 42. Similarly to the first embodiment, the first command value generator 102 comprises the constant multiplier 114a, the ZOH circuit 114b, and the adder 115.

Specifically, the constant multiplier 114a multiplies the first frequency deviation $\Delta\omega_1$ by the rated frequency fn to calculate the frequency deviation df_1, and outputs the frequency deviation df_1 to the ZOH circuit 114b. The ZOH circuit 114b outputs a signal value resulting from zero-order holding of the frequency deviation df_1, to the adder 115. The adder 115 adds the rated frequency fn to the signal value output from the ZOH circuit 114b to thus calculate the first frequency command value f_{v1}, and outputs the first

M and the damping constant D included therein are the same as those of the first VSG controller 101a.

[0063]

Similarly to the first governor controller 113, the second governor controller 213 multiplies the second frequency deviation $\Delta\omega_2$ output from the second VSG controller 201 by the transfer function $\{K/(1+sT)\}$, and outputs the resulting value to subtractor 211. Here, the time constant T and the gain K are the same as those of the first governor controller 113.

[0064]

The second command value generator 202 comprises a constant multiplier 214a, a ZOH circuit 214b, and an adder 215, and generates and outputs a second frequency command value f_{v2} as a frequency command value, similarly to the first command value generator 102. Specifically, the constant multiplier 214a calculates a frequency deviation df_2 by computation processing similar to that of the constant multiplier 114a, and outputs the frequency deviation df_2 to the ZOH circuit 214b. The ZOH circuit 214b outputs a signal value resulting from zero-order holding of the frequency deviation df_2, to the adder 215. The adder 215 adds the rated frequency fn to the signal value output from the ZOH circuit 214b to thus calculate the second frequency command value f_{v2}, and outputs the second frequency command value f_{v2} to the reference output calculator 117.

[0065]

The reference output calculator 117 calculates the active power to be output from the inverter 42 when the load 12 in a predetermined reference state is connected, on the basis of the second frequency command value f_{v2} output from the second command value generator 202, and outputs the calculated active power, to the ZOH circuit 216 as the active power reference value P_{st}. Specifically, the reference output calculator 117 calculates the

transformer (CT).

[0074]

Furthermore, in the first and second embodiments, the method for connecting the integrated controller 31 to the power generation facility 11, the load 12, the storage battery 13, and the power conversion device 14 is not limited in any manner. These components may be connected to each other, for example, by a signal line such as a coaxial cable, by wireless communication, or via the Internet or an intranet.

[0075]

In addition, in the first and second embodiments, the integrated controller 31 may be configured as, for example, a community energy management system (CEMS), an area energy management system (AEMS), a building and energy management system (BEMS), or the like to control, for example, power supply and demand in another power system in parallel.

[0076]

A plurality of embodiments has been described above. In addition to the above disclosure contents, arbitrary combination of the embodiments, modification of an arbitrary component of the embodiments, or omission of any of the embodiments can be made as long as not conflicting with the features described in the embodiments. For example, the arrangement order of the constant multiplier 114a and the ZOH circuit 114b may be reversed in each of the first and second embodiments. In the second embodiment, the second error correction controller 218 may output the second error dP_2, which is the output value thereof, not to the subtractor 111a, but to the subtractor 121.

[Reference Signs List]

[0077]

1 Microgrid