operation, which deteriorates the cooling capacity of the evaporators. Consequently, the other normal evaporators are subjected to increase in cooling load, and the thermal environment of the entire equipment room deteriorates with time.

An object of the present invention, which has been made in order to solve the problems according to the conventional art, is to provide an apparatus for operating a cooling system in an abnormal state capable of securely determining an evaporator having abnormality in the cooling capacity among plurality of evaporators, and preventing warm air exhausted from electronic equipment from being recirculated in an equipment room, thereby reducing cooling load of the other evaporators operating normally, and preventing deterioration of the air conditioning environment in the entire equipment room.

{Solution to Problem}

In order to achieve the above object, there is provided an apparatus for operating a cooling system in an abnormal state, wherein the cooling system including: a plurality of evaporators that suck warm air exhausted from a plurality of electronic equipment installed in an equipment room with fans, cool the warm air through heat exchange with a refrigerant flowing in a cooling coil, and supply cool air into the equipment room; and a condenser disposed at a position higher than the plurality of evaporators, the condenser which cools the refrigerant circulated naturally between the condenser and each evaporator, the cooling system which adjusts a supplied air temperature of air supplied from each evaporator by adjusting an opening degree of each flow regulating valve that regulates a flow rate of the refrigerant flowing in the cooling coil,

wherein the apparatus comprising: deviation information detecting means for sequentially detecting deviation information between an maximum cooling capacity and a current cooling capacity in operation for each of the plurality of evaporators; and fan controlling means for reducing or stopping a rotational frequency of a fan for an evaporator which has deviation information exceeding a predefined abnormal determining threshold value among the plurality of evaporators.

The deviation information detecting means includes: supplied air temperature detecting means for detecting the supplied air temperature; and valve opening degree detecting means for detecting the opening degree of each flow regulating valve.

The fan controlling means reduces or stops the rotational frequency of the fan if the supplied air temperature is equal to or higher than an upper limit of a specification temperature range of the electronic equipment, and if the flow regulating valve has an approximate maximum opening degree.

According to the present invention, it is configured to sequentially detect deviation information between the maximum cooling capacity and the current cooling capacity in operation of each of the plural evaporator, and to reduce or stop a rotational