CLAIMS

1. A moving body provided with a cooling device that is used in a power generation system that comprises: a gas turbine unit in which a combustion means burns an air-fuel mixture of air and a fuel gas obtained by gasifying a liquid fuel to generate a combustion gas, and a gas turbine is driven to rotate with the combustion gas generated by the combustion means; and a first power generating means for generating power using a rotative force of the gas turbine, the cooling device being configured to cool air to be supplied to the combustion means,

wherein the cooling device includes

from among a first cooling unit that uses, as a cold heat source, a heating medium used to gasify the liquid fuel, a second cooling unit that uses, as a cold heat source, a heating medium from a chiller, and a third cooling unit that uses, as a cold heat source, marine water serving as a heating medium, at least the first cooling unit and the third cooling unit or at least the second cooling unit and the third cooling unit,

the moving body comprising:

a fuel tank in which the liquid fuel is stored;

a gasification unit configured to gasify the liquid fuel;

the gas turbine unit;

the first power generating means;

a waste heat recovery boiler unit configured to vaporize water using an exhaust gas from the gas turbine unit;

a steam turbine unit configured to drive and rotate a steam turbine using steam obtained by the vaporization performed by the waste heat recovery boiler unit; and

a second power generating means for generating power using a rotative force of the steam turbine,

the steam turbine unit includes:

a steam condenser configured to recover, as condensate, the steam used to drive and rotate the steam turbine; and

a condensate cooling unit configured to cool the inside of the steam condenser using, as a cold heat source, the marine water used in the third cooling unit.

2. The moving body according to claim 1,

wherein in the cooling device, the first cooling unit and the third cooling unit are arranged so that the air to be supplied to the combustion means flows through the third cooling unit and the first cooling unit in this order, or the second cooling unit and the third

cooling unit are arranged so that the air to be supplied to the combustion means flows through the third cooling unit and the second cooling unit in this order.

3. The moving body according to claim 1 or 2,

wherein the operational state of the cooling device is determined based on an electric demand and output characteristics of the gas turbine unit.

4. The moving body according to claim 3,

wherein the cooling device includes the first cooling unit and the third cooling unit, and

in a state in which the air to be supplied to the combustion means is cooled by the first cooling unit, the operational state of the cooling device is determined by determining a degree of cooling of the air to be supplied to the combustion means using the third cooling unit based on the electric demand and the output characteristics of the gas turbine unit.

5. The moving body according to claim 1,

wherein the cooling device includes the first cooling unit, the second cooling unit, and the third cooling unit.

6. The moving body according to claim 5,

wherein in the cooling device, the first cooling unit, the second cooling unit, and the third cooling unit are arranged so that the air to be supplied to the combustion means flows through the third cooling unit, the second cooling unit, and the first cooling unit in this order.

7. The moving body according to claim 5 or 6,

wherein the operational state of the cooling device is determined based on an electric demand and output characteristics of the gas turbine unit.

8. The moving body according to claim 7,

wherein in a state in which the air to be supplied to the combustion means is cooled by the first cooling unit and the third cooling unit, the operational state of the cooling device is determined by determining a degree of cooling of the air to be supplied to the combustion means using the second cooling unit based on the electric demand and the output characteristics of the gas turbine unit.

9. The moving body according to any one of claims 1 to 8,

wherein the moving body is one of a ship, a floating structure, and a land transport means.

10. The moving body according to any one of claims 1 to 9, comprising:

a first marine water flow path through which the marine water to be supplied to the third cooling unit flows;

a second marine water flow path through which the marine water to be supplied from the third cooling unit to the condensate cooling unit flows;

a bypass flow path that connects the first marine water flow path and the second marine water flow path; and

an adjustment means for adjusting the amount of marine water that is to flow through the bypass flow path.

11. The moving body according to any one of claims 1 to 10,

wherein based on at least one of an ambient air state and a cooling device condition, the operational state of the cooling device is determined, and a degree of cooling of the air to be supplied to the combustion means using at least one of the first cooling unit, the second cooling unit, and the third cooling unit is determined.

12. The moving body according to any one of claims 1 to 11,

wherein the gasification unit is configured to gasify the liquid fuel using, as a warm heat source, the heating medium to be used in the first cooling unit.

13. A moving body provided with a cooling device that is used in a power generation system that comprises: a gas turbine unit in which a combustion means burns an air-fuel mixture of air and a fuel gas obtained by gasifying a liquid fuel to generate a combustion gas, and a gas turbine is driven to rotate with the combustion gas generated by the combustion means; and a first power generating means for generating power using a rotative force of the gas turbine, the cooling device being configured to cool air to be supplied to the combustion means,

wherein the cooling device includes

a first cooling unit that uses, as a cold heat source, a heating medium used to gasify the liquid fuel,

a second cooling unit that uses, as a cold heat source, a heating medium

from a chiller, and

a third cooling unit that uses, as a cold heat source, marine water serving as a heating medium, and

in a state in which the air to be supplied to the combustion means is cooled by the first cooling unit and the third cooling unit, the operational state of the cooling device is determined by determining a degree of cooling of the air to be supplied to the combustion means using the second cooling unit based on an electric demand and output characteristics of the gas turbine unit.

14. The moving body according to any one of claims 1 to 13,

wherein the number of gas turbine units to be operated is determined based on an electric demand and an operational state of the cooling device.

15. A moving body provided with a cooling device that is used in a power generation system that comprises: a gas turbine unit in which a combustion means burns an air-fuel mixture of air and a fuel gas obtained by gasifying a liquid fuel to generate a combustion gas, and a gas turbine is driven to rotate with the combustion gas generated by the combustion means; and a first power generating means for generating power using a rotative force of the gas turbine, the cooling device being configured to cool air to be supplied to the combustion means,

wherein the cooling device includes:

a first cooling unit that uses, as a cold heat source, a heating medium used to gasify the liquid fuel; and

at least one of a second cooling unit that uses, as a cold heat source, a heating medium from a chiller and a third cooling unit that uses, as a cold heat source, marine water serving as a heating medium,

in a state in which the air to be supplied to the combustion means is cooled by the first cooling unit, the operational state of the cooling device is determined by determining a degree of cooling of the air to be supplied to the combustion means using the at least one of the second cooling unit and the third cooling unit based on an electric demand and output characteristics of the gas turbine unit, and

the number of gas turbine units to be operated is determined based on the electric demand and an operational state of the cooling device.