CLAIMS

1. A liquefied natural gas transportation system, comprising:

a superconducting cable including:

an outer tube;

a plurality of inner tubes are disposed inside the outer tube, and the plurality of inner tubes are arranged along an axial direction of the outer tube;

a core portion which is disposed inside each of the inner tubes and which includes a former and a superconducting member disposed on an outer periphery of the former; and

a first heat insulating layer disposed on an outer periphery of the outer tube,

a liquefied natural gas supply source disposed on a first end side of the superconducting cable;

a first pipe disposed between the liquefied natural gas supply source and a space formed between the outer tube and the inner tube of the superconducting cable;

a consumer disposed on a second end side of the superconducting cable; and

a second pipe disposed between the space and the consumer,

wherein an inside of each inner tube is filled with a cooling medium, and a space formed between the outer tube and the inner tube is filled with a liquefied natural gas;

wherein the system is configured to transport the liquefied natural gas to the consumer from the liquefied natural gas supply source, via the superconducting cable, and

wherein the cooling medium is filled between the inner tube and the core portion in each of the plurality of the inner tubes.

2. The system according to claim 1,

wherein the core portion includes an electric insulating layer disposed on an outer periphery of the superconducting member.

3. The system according to claim 1 or 2,

further comprising a second heat insulating layer disposed on an outer periphery of the inner tube.

4. The system according to any one of claims 1 to 3,

wherein the inner tube consists of a single inner tube, and is disposed inside the outer tube concentrically with the outer tube.

5. The system according to claim 4,

wherein the core portion includes an electric insulating layer disposed on an outer periphery of the superconducting member, and

wherein a plurality of superconducting members and a plurality of electric insulating layers are disposed on an outer periphery of the former alternately along a radial direction of the former.

6. The system according to claim 4,

wherein a plurality of core portions are disposed inside the inner tube, and

wherein the plurality of core portions are arranged along an axial direction of the inner tube.

7. The system according to any one of claims 1 to 6,

wherein the cooling medium is liquid nitrogen.

8. The system according to any one of claims 1 to 7,

wherein the system is configured to send natural gas to the consumer,

wherein the natural gas is gasified from the liquefied natural gas transported via the superconducting cable to the consumer.

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

wherein the consumer includes a storage tank to which natural gas gasified from the liquefied natural gas is discharged.

10. The system according to claim 3,

wherein the first heat insulating layer is disposed adjacent to the outer tube and is configured as an outermost layer of the superconducting cable,

wherein the second heat insulating layer is disposed adjacent to the inner tube,

wherein the liquefied natural gas is filled adjacent to each of the outer tube and the second heat insulating layer,

wherein the cooling medium is filled adjacent to the inner tube.

11. The system according to any one of claims 1 to 10, wherein the superconducting cable includes no vacuum layers.