[10] The system may further include: a cold heat collecting unit heat-exchanging the fluid d with the boil off gas discharged from the storage tank, as a coolant, to cool the fluid d.

[11] The fluid d may be primarily cooled in the cold heat collecting unit, secondarily cooled by the heat-exchanger, and subsequently expanded by the first expanding unit so as to be reliquefied.

[12] The fluid c may be supplied to the second expanding unit by way of the heat-exchanger, and the heat-exchanger may heat-exchange the fluid c before passing through the second expanding unit, the fluid c after passing through the second expanding unit, and the fluid d.

[13] The fluid c which has passed through the second expanding unit and the heat-exchanger may join the boil off gas discharged from the storage tank.

[14] The system may further include: a vapor-liquid separator separating a reliquefied liquefied natural gas (LNG) and a boil off gas remaining in a gaseous state in the fluid d which has passed through the first expanding unit, wherein the LNG separated by the vapor-liquid separator may be sent to the storage tank, and the boil off gas separated by the vapor-liquid separator may join the boil off gas discharged from the storage tank.

[15] In the flow formed as the fluid a and the fluid b join, a remaining flow excluding the fluid c and the fluid d may be sent to a fuel consumer.

[16] The first compressor and the second compressor may compress the boil off gas to 1 to 10 Megapascal (10 to 100 bar).

【Advantageous Effects】

[17] As described above, the system for reliquefying a boil off gas has the following advantages and effects.

[18] First, since the boil off gas primarily cooled by the cold heat collecting unit is decompressed through an additional cooling process by the heat-exchanger, compared with the existing PRS, reliquefaction efficiency and reliquefaction amount may be increased. In particular, most or all of the remaining boil off gas may be

exchanges the fluid c before passing through the second expanding unit, the fluid c after passing through the second expanding unit, and the fluid d.

【Claim 5】

The system of any one of claims 1 to 3, wherein the fluid c which has passed through the second expanding unit and the heat-exchanger joins the boil off gas discharged from the storage tank.

【Claim 6】

The system of claim 4, wherein the fluid c which has passed through the second expanding unit and the heat-exchanger joins the boil off gas discharged from the storage tank.

【Claim 7】

The system of claim 6, further comprising a vapor-liquid separator separating a reliquefied liquefied natural gas (LNG) and a boil off gas remaining in a gaseous state in the fluid d which has passed through the first expanding unit,

wherein the LNG separated by the vapor-liquid separator is sent to the storage tank, and the boil off gas separated by the vapor-liquid separator joins the boil off gas discharged from the storage tank.

【Claim 8】

The system of claim 6, wherein, in the flow formed as the fluid a and the fluid b join, a remaining flow excluding the fluid c and the fluid d is sent to a fuel consumer.

【Claim 9】

The system of claim 8, wherein the first compressor and the second compressor compress the boil off gas to 1 to 10 Megapascal (10 to 100 bar).