【CLAIMS】

【Claim 1】

A leakage detection and prevention system for a liquid heater, comprising:

a high pressure pump 10 configured to be supplied with a low-temperature, low-pressure liquid to increase a pressure;

a heater 20 configured to be supplied with a high pressure liquid from the high pressure pump 10 to increase temperature;

a heating medium outlet shut-off valve 45 configured to be mounted at a heat medium discharge line 40 connected to a heat medium regenerator;

a leakage gas accumulation tank 60 configured to be mounted at the heating medium discharge line 40 to temporarily store leaked gas and a heating medium; and

a first detector 65 configured to have at least any one of a pressure detector, a temperature detector, a gas detector, and a water level detector which is mounted at the leakage gas accumulation tank 60.

【Claim 2】

The leakage detection and prevention system for a liquid heater of claim 1, further comprising:

a heating medium discharge line 40 configured to be

connected to a heating medium outlet of the heater 20 to discharge the heating medium from the heater 20;

a heating medium introduction line 30 configured to be connected to a heating medium inlet of the heater 20 to introduce the heating medium being heat-exchanged with the liquid into the heater 20;

a heating medium inlet shut-off valve 35 configured to be mounted at the heating medium introduction line 30;

a second detector 25 configured to have at least one of the pressure detector, the temperature detector, and the gas detector which are mounted at the heater 20; and

a controller configured to perform a control to shut-off the heating medium inlet shut-off valve 35 on the basis of a signal detected by the second detector 25,

wherein the controller performs a control to shut-off the heating medium inlet shut-off valve 35 on the basis of the signal detected by the first detector 65.

【Claim 3】

The leakage detection and prevention system for a liquid heater of claim 2, wherein the heating medium outlet shut-off valve 45 is disposed at an outlet side of the leakage gas accumulation tank 60.

【Claim 4】

The leakage detection and prevention system for a liquid heater of claim 2 or 3, further comprising:

a steam trap 80 configured to be mounted at the heating medium discharge line 40 and disposed at an inlet side of the leakage gas accumulation tank 60 to store a condensate generated from the heater 20; and

a first detector 70 configured to include a water level detector which is mounted at the heating medium discharge line 40 and mounted at ~~an inlet side of~~ the steam trap 80 to detect a water level of the condensate,

wherein the heating medium is steam and the controller performs a control to shut-off the heating medium inlet shut-off valve 35 on the basis of a signal detected by the first detector 70.