

Abstract

A natural gas fired combined-cycle power generation system includes a vaporizer, a cooler, a circulation passage, a pump, and a gas-turbine combined power generation apparatus. The vaporizer includes an intermediate fluid evaporator that exchanges heat between an intermediate fluid, having a freezing point lower than a freezing point of water, and water flowing out of the cooler to evaporate at least a portion of the intermediate fluid, and a liquefied natural gas vaporizing unit that exchanges heat between the intermediate fluid and liquefied natural gas to vaporize at least a portion of the liquefied natural gas.