

ABSTRACT

Provided is a flue gas waste heat coupled heating system for recycled condensate water. Depending on the flow of different media, the system may be divided into a waste incineration flue gas discharge system, a condensate heating system, and a closed circulating water system. A boiler, a dust collector, a flue gas-steam heat exchanger, an SCR denitration device, a low-temperature economizer, and an induced draft fan are sequentially connected via flue ducts. A steam turbine, a condenser, a low-pressure heater, a water-water heat exchanger, a deaerator, and a boiler feedwater pump are sequentially connected via a condensate passage. The deaerator, the circulating water pump, the water-water heat exchanger, and the low-temperature economizer are sequentially connected via circulating water pipes. A stream of circulating water is drawn from the low-pressure feedwater of the deaerator to the water-water heat exchanger to heat the condensate exiting the low-pressure heater. The cooled circulating water is then delivered to the low-temperature economizer for heat exchange with flue gas and subsequently returned to the deaerator, thereby forming an independent closed circulating water system. By utilizing the characteristic of constant temperature of outlet water from the deaerator, the influence of condensate parameter fluctuations can be effectively overcome, ensuring that the low-temperature economizer does not suffer low-temperature corrosion.