[0019]

In the present disclosure, the "state in which the flow failure has occurred" includes a state in which the operation efficiency of the plant 2 (including the efficiency of a combustion process, the efficiency of the boiler, and the safety of the plant 2) is reduced due to the flow failure. In addition, in the present disclosure, the "state in which the precursor of the flow failure has occurred" includes a state in which there is a high probability that the operation efficiency of the plant 2 may be reduced due to the flow failure in the future.

[0020]

<2. Configuration>

An example of a configuration of the plant management system 1 will be described with reference to FIGS. 2 to 3.

[0021]

FIG. 2 is a diagram showing an overall configuration of the plant management system 1. The plant management system 1 includes the plant 2, a distributed control system (DCS) 2, the operation support device 4, and a communication network 5.

[0022]

The plant 2 includes a CFB boiler. As shown in FIG. 2, the CFB boiler includes a fuel bunker, a drum, a furnace, a separator, a wall seal, an air heater, a

superheater, a main steam outlet, a water supply inlet, a dust collector, a chimney, an induced draft fan, a forced draft fan, a bottom ash cooler, a bottom ash discharge path, a fly ash discharge path, an ash tank connection path, and the like. These devices and facilities are provided with sensors that measure temperature, pressure, flow rate, and the like.

[0023]

The operation support device 4 acquires the operation data of the plant 2 from various sensors provided in the plant 2 via the DCS 3 and the communication network 5. The operation support device 4 detects the flow failure of the heat transfer medium or the precursor of the flow failure of the heat transfer medium in the plant 2 based on the acquired operation data, and outputs support information for supporting the operation of the plant 2 to the operator of the plant 2. The operation support device 4 may include output devices, such as a display and a speaker, and input devices, such as a keyboard, a touch panel, and a mouse.

[0024]

[Operation Support Device 4]

FIG. 3 is a diagram showing an example of a configuration of the operation support device 4. The operation support device 4 includes a control unit 10, a storage unit 12, a network interface unit 14, and bus 16.