CLAIMS

1. A steam-using facility monitoring system comprised of a steam-using equipment, which consumes steam for a particular purpose, comprising:

a trap state detector that detects a state of a steam trap provided in a steam pipe accompanying the steam-using equipment; and

an operational state estimating means having a signal input unit that inputs a detection signal from the trap state detector and an operational state estimation unit that estimates suitability of the operational state of the steam-using equipment based on one inputted detection signal or a preset particular combination of detection signals.

2. The monitoring system according to claim 1, wherein:

there is provided a control state detector for detecting a state of a valve or a strainer provided in the steam pipe;

the signal input unit inputs also a detection signal from the control state detector;

the operational state estimation unit estimates the operational state of the steam-using equipment based on the detection signals including the detection signal from the control state detector;

the steam controller includes a steam trap; and

the control state detector includes a trap state detector for detecting a state of the steam trap.

3. The monitoring system according to claim 1 or 2, wherein:

a steam state detector is provided for detecting a steam state in the steam pipe;

the signal input unit inputs also a detection signal from the steam state detector; and

the operational state estimation unit estimates the operational state of the steam-using equipment based on the detection signals including the detection signal from the steam state detector.

4. The monitoring system according to any one of claims 1 -3, wherein:

there is provided a sub-equipment state detector for detecting a state of a sub equipment accompanying the steam-using equipment;

the signal input unit inputs also a detection signal from the sub equipment state detector; and

the operational state estimate unit estimates the operational state of the steam-using equipment based on the detection signals including the detection signal from the sub equipment state detector.

5. The monitoring system according to any one of claims 1-4, wherein:

there is provided an equipment state detector for detecting a state of the steam-using equipment;

the signal input unit inputs also a detection signal from the equipment state detector; and

the operational state estimation unit estimates the operational state of the steam-using equipment based on the detection signals including the detection signal from the equipment state detector.

6. The monitoring system according to any one of claims 1-5, wherein:

the operational state estimating means includes a storage unit for storing the detection signals inputted over time; and

the operational state estimation unit utilizes history of a particular detection signal in estimating the operational state of the steam-using equipment.

7. The monitoring system according to any one of claims 1-6, wherein the operational state estimation unit estimates the operational state of the steam-using equipment based on a change in detection result of the trap state detector starting from activation of the steam-using equipment.

8. The monitoring system according to any one of claims 1-7, wherein the operational state estimating means includes an alarm unit for issuing a predetermined alarm when the operational state estimation unit senses abnormality in the operational state of the steam-using equipment.

9. The monitoring system according to any one of claims 1-8, wherein the operational state estimation unit estimates a cause of abnormality based on one inputted detection signal or a preset particular combination of detection signals, when abnormality is sensed in the operational state of the steam-using equipment.

10. The monitoring system according to claim 9, wherein the operational state estimation unit generates countermeasure information for abnormality based on a cause of this abnormality.

11. The monitoring system according to any one of claims 1-10, wherein the control state detector is configured to detect temperature or vibration of the steam controller.

12. The monitoring system according to any one of claims 1-11, wherein the operational state estimation unit detects clogging or temperature change in the steam controller based on a detection signal from the control state detector and estimates the operational state of the steam-using equipment based on the clogging or temperature change in the steam controller.

13. The monitoring system according to any one of claims 1-12, wherein:

the steam-using equipment generates drain in association with consumption of steam; and

the steam controller is provided in an outlet pipe for discharging the drain generated in the steam-using equipment and discharges the drain generated in the steam-using equipment.