WHAT IS CLAIMED IS:

1. A system for tracking heat exchanger performance, comprising:

a heat exchanger for installation in a system that has a load;

an output subsystem; and

at least one controller configured to:

determine a clean coefficient value of the heat exchanger when in a clean state, wherein the clean coefficient value is a flow capacity, a fouling factor, a heat transfer capacity, or a heat transfer coefficient,

calculate, from measurement of real-time operation when sourcing the load, an actual coefficient value of the heat exchanger,

calculate a comparison between the actual coefficient value of the heat exchanger and the clean coefficient value of the heat exchanger, and

output to the output subsystem when the comparing satisfies criteria, wherein the output includes at least one signal to control one or more variable control pumps to a maximum flow amount in order to perform flushing of a fouling of the heat exchanger.

2. The system as claimed in claim 1, wherein the at least one signal is to control two or more of the variable control pumps to a maximum flow amount in order to perform the flushing of the heat exchanger.

3. The system as claimed in claim 1, wherein the outputting comprises outputting an alert to the output subsystem, wherein the output subsystem includes a display screen or a communication subsystem.

4. The system as claimed in claim 2, wherein the alert indicates that the flushing or maintenance of the heat exchanger is required.

5. The system as claimed in claim 2, wherein the alert indicates that there is performance degradation of the heat exchanger.

6. The system as claimed in claim 1, wherein the at least one controller is integrated with the heat exchanger.

7. The system as claimed in claim 1, wherein the calculating the actual coefficient value

of the heat exchanger comprises predicting the actual coefficient value of the heat exchanger based on previous measurement of the real-time operation when sourcing the load.

8. The system as claimed in claim 1, wherein determining the clean coefficient value of the heat exchanger is performed using a testing rig.

9. The system as claimed in claim 1, wherein determining the clean coefficient value of the heat exchanger is performed from the measurement of the real-time operation when sourcing the load.

10. A method for tracking performance of a heat exchanger for installation in a system that has a load, the method being performed by at least one controller and comprising:

determining a clean coefficient value of the heat exchanger when in a clean state, wherein the clean coefficient value is a flow capacity, a fouling factor, a heat transfer capacity, or a heat transfer coefficient;

calculating, from measurement of real-time operation when sourcing the load, an actual coefficient value of the heat exchanger;

calculating a comparison between the actual coefficient value of the heat exchanger and the clean coefficient value of the heat exchanger; and

outputting to an output subsystem when the comparing satisfies criteria, wherein the outputting includes sending at least one signal to control one or more variable control pumps to a maximum flow amount in order to perform flushing of a fouling of the heat exchanger.

11. The method as claimed in claim 8, wherein the calculating the actual coefficient value of the heat exchanger comprises predicting the actual coefficient value of the heat exchanger based on previous measurement of the real-time operation when sourcing the load.

12. The method as claimed in claim 9, wherein the determining the clean coefficient value of the heat exchanger is performed using a testing rig.

13. The method as claimed in claim 9, wherein the determining the clean coefficient value

of the heat exchanger is performed from the measurement of the real-time operation when sourcing the load.

14. The method as claimed in claim 9, wherein the at least one signal is to control two or more of the variable control pumps to the maximum flow amount in order to perform the flushing of the heat exchanger.

15. A non-transitory computer readable medium having instructions stored thereon executable by at least one controller for performing the method as claimed in any one of claim 8 to 14.