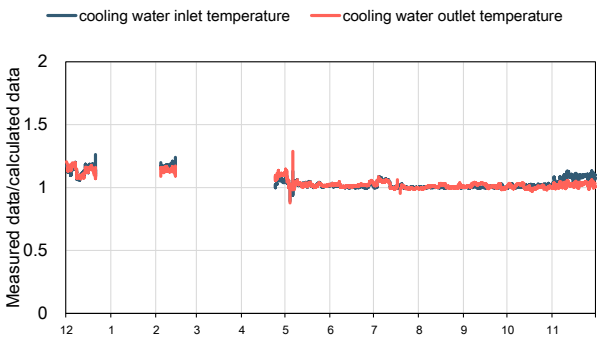

Figure14. *The evaluation result by the one-day moving average*

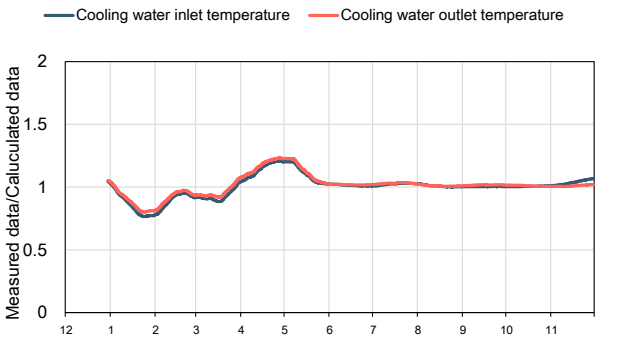

Figure15. *The evaluation result by the one-month moving average*

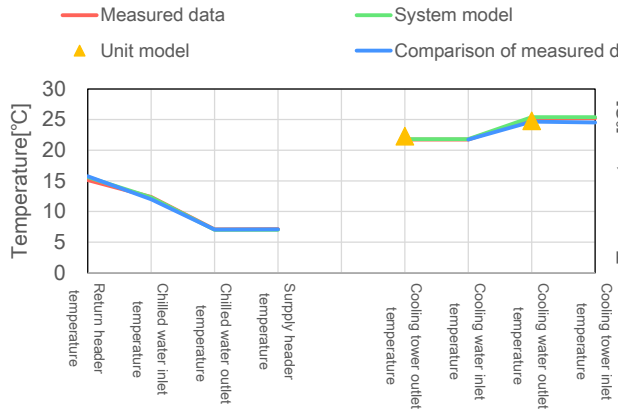

Figure16. *Analysis results of the hourly evaluation (No fault)*

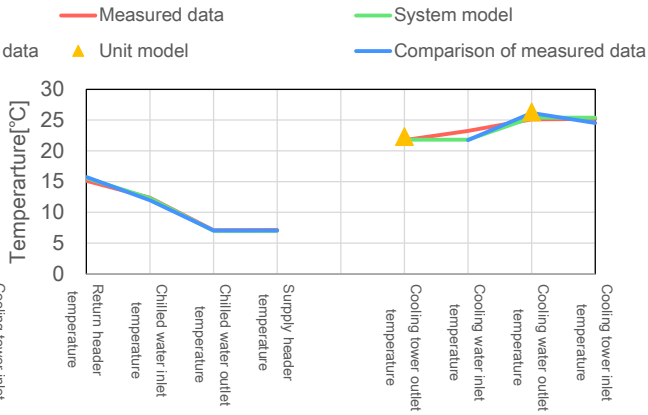

Figure17. *Analysis results of the hourly evaluation (Fault occurring)*

5. Conclusion

In this report, two different simulation models with different input values were constructed targeting a system in an industrial facility in Sendai City, Miyagi Prefecture and how the measurement errors of the sensors affect each simulation result was discussed. In this discussion, it was found out that it is possible to find out sensor errors and determine error spots by comparing measured data, unit model results and system model results. At that time, the sensor errors of the targeted system can be classified into four cases from the perspective of input and output values of simulation. Furthermore, it was also discussed how to consider the deviation between the measured data and model value when the proposed fault detection method is practically used. It is important to use different evaluation methods for the evaluation of the deviation amount depending upon targets. Hourly evaluation is needed in practical use. The proposed method will be further developed and the development of a tool to automatically detect faults from long-term measured data also will be implemented in the future.

References

Nikaido S., Ueda K. et al., Development of performance evaluation method for optimally controlled heat source system -Part5, Performance evaluation by using simulation data-, Technical papers of annual meeting, the Society of Heating, Air-Conditioning and Sanitary Engineers of Japan ,2014,B-48, (submitted to)

8