

Condition Monitoring and Diagnosis of Power Plants using EnergyWin™

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Abstract

EnergyWin is Windows® desktop application developed by CRIEPI that analyzes heat and mass balance of power generation system. This easy-to-use software can provide the valuable information on power plant in operation, and it can be applied to almost all power systems such as BTG, GTCC, IGCC and so on.

Since the thermal power plant is composed of many components, it was difficult to clarify the cause of the performance degradation of the total plant. However, EnergyWin enables quantitative evaluation of thermal efficiency lowering factors.

In EnergyWin, input values and output values can be chosen freely. It is also possible to calculate the performance of each component (for example, the adiabatic efficiency of the turbine) by inputting the measurement data, or to calculate the expected plant performance by inputting the equipment performance. By analyzing operation data with EnergyWin, we can obtain not only the performance of each component, but also the impact of changes in performance of each component on the plant thermal efficiency. This information is very useful for maintaining and improving the thermal efficiency of the power plant and reducing the operation and maintenance cost.

In Japan, EnergyWin has been applied to almost 100 units of thermal power generation, nuclear power generation, and geothermal power generation.

We will demonstrate this software at this workshop. However only Japanese version of this software is available currently, we are preparing to create English version. We will demonstrate this software at this Workshop.