THE PROBLEM
Ironmaking is a capital and energy intensive process. The blast furnace process is a counter current moving bed chemical reactor to reduce iron oxides to iron, which involves complex transport phenomena and chemical reactions. There are many important parameters to evaluate the operation stability in the blast furnace. With the Blast Furnace Operation Stability Monitoring Program, it will make operators easier to monitor the operation.

THE PROJECT
This project is to develop a user-friendly interface program to monitor the stability of the blast furnace operation. Key variables includes wind rate, permeability, tuyere kinetic energy, O/C ratio, bosh gas intensity, flame temperature, burden descending slag basicity and Si percentage in hot metal. The program includes the parameter setup tab, graphic display tab and report tab. The graphic user interface and data structure are designed by U. S. Steel.

THE OUTCOME
A software package has been developed to monitor the key variables for evaluation the performance of the blast furnace. The status of the variables can be graphically displayed as the spider char and the report char. It is easy for operators to use and visually see the dynamics of the variables. It can be run both off-line and on-line.

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