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that Matter

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confidence”



PATTERN DISCOVERY
TECHNOLOGIES INC

Case Study:

Sinopec

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● The Customer ●



Sinopec Corp. is the largest producer of oil products in China. In 2004, the company processed 132.95 million tons of crude oil and produced 80.83 million tons of oil products. Key products include gasoline, kerosene, diesel, chemical light oil, fuel oil, solvent oil, petroleum wax, petroleum coke, propylene and benzene products for refining.

The Shijiazhuang Refining and Chemical Company (SRCC), a subsidiary of Sinopec Corp., operates a delayed coking operation in Hebei province. Pound for pound, coking is the most energy intensive of any operation in modern refining. Large amounts of energy are required to heat the thick, low grade petroleum residue to the 900-950 °F temperatures required to crack the heavy hydrocarbon molecules into lighter, more valuable products. Due to complex relationships within the production process and the constraints of physics, coking is an expensive and volatile process. Maintaining steady state operating conditions, ensuring plant safety and controlling energy consumption are imperative for the customer.

● The Production Challenge ●

Like most companies with complex industrial processes, the Shijiazhuang Refining and Chemical Company has made significant investment in plant automation projects including distributed control systems to support process monitoring and control. While they collect and archive huge volumes of data on a daily basis, they have struggled with how to exploit this data to improve performance. They generate, collect, store and then routinely purge the data, forever losing the value locked into this asset.



More specifically, SRCC wanted to:

- leverage the historical data.
- visualize performance problems before reaching critical thresholds.
- measure operator effectiveness to control the process
- determine economic impact of control variables by linking to energy consumption.

● The Solution ●

After careful consideration Sinopec chose Pattern Discovery's Production Intelligence (PI) solution and expert analysis services. The overall goal is to provide SRCC with a system that will take advantage of historical plant data, integrating it with real-time data to establish a view into plant performance. This will allow operators, engineers and plant managers to gain a better understanding of the key factors that impact performance and initiate improvement measures.

Phase 1 of the project included the development of three modules: the *Standard Curve Generator (SCG)*, *Real-Time Monitoring and Control System (RTMC)* and the *Sinopec Report Server*.

● Contacts ●

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