

Cycle Isolation Monitoring

FAMOS Solutions

**CURTISS-
WRIGHT**

Power Products and Services



About

Curtiss-Wright is a leading provider of performance and reliability improvement solutions for the global power and process industries. Over 500 fossil, nuclear, combined-cycle, and simple-cycle plants worldwide use Curtiss-Wright products and technologies to increase the efficiency, safety, and profitability of their operations.

Finding and correcting issues with leaking valves in power plants leads to:

- Improved plant efficiency
- Prevention of valve damage
- Increased generation
- Decreased fuel usage
- Decreased water production cost
- Decreased maintenance cost

Valve	Current Tailpipe Temp (°F)	Leakage (lbm/hr)	ΔMW (MW)	ΔHR (Btu/kWh)
MS Safety	245°	30,000	-4.68	256.92
CRH Safety	150°	6,416	-0.71	38.95
HP Heater 5 ES Safety to ATM	165°	1,414	-0.15	8.37
HP Heater 6 ES Safety to ATM	185°	1,141	-0.13	6.93
Total			-5.66	311.17

This chart illustrates the impact on generation and heat rate resulting from valve leak-by.

Find Lost Megawatts Now

Aging plants, deteriorating valve performance, and increased demand for electric power require careful attention to any potential loss of efficiency and generation. Capturing lost MWs is often the greatest return on investment, especially inside of the steam cycle. To find these lost MWs in the steam cycle, Curtiss-Wright has developed our cycle isolation monitoring platform to keep your plant operating at its peak performance.

What is Cycle Isolation?

Cycle isolation is valve leakage losses that bypass the generation process. Leakage through these valves is one of the largest and often most overlooked issues in nuclear, fossil, and CCGT power plants. In some cases, leaking steam valves can result in more than 5 MWs of lost generation. These losses are compounded by the undetected valve leakage continuously damaging the valve, increasing the leak, and leading to additional losses in generation and increased heat rate. By understanding and evaluating the valves' performance, we can balance MW losses against planned outages and determine maintenance scheduling that is most advantageous to the utility.

How does the Cycle Isolation Product Work?

On-line cycle isolation monitoring and reporting is now an integral part of our FAMOS suite and PMAX thermal performance monitoring software. Combining real-time data and web browser displays, our product quickly detects cycle isolation issues and automatically estimates the leakage rate as well as generation and heat rate impacts for each leaking valve.

The cycle isolation monitoring software uses downstream temperature information to generate leakage alerts. These temperatures can be entered manually from plant walk downs, or, if instrumentation is available, the data can be gathered in real time. Additionally, tools are available to set up notification, alarms, and reports to be automatically delivered to users and recorded in the historian.

The cycle isolation monitoring module can be deployed as an upgrade to an existing FAMOS/PMAX installation or independently. With either option, the cycle isolation monitoring system is a must-have for getting the most out of your power plant.

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