

UptimeAI Expert Mitigates Heat Exchanger Losses, Saving \$150,000 Annually for a 600 MW Power Plant

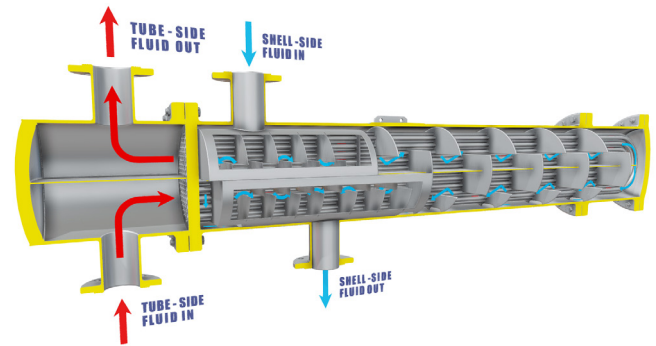
Background: The Challenge

Changes in operating parameters are often too subtle for the Distributed Control System (DCS) to detect. Manually correlating multiple process parameters, particularly for critical assets, remains a significant challenge. In this case, a 600 MW power plant experienced increased energy consumption in one of its units due to heat exchanger inefficiencies.

Fouling was identified as a potential issue, but diagnosing it is challenging because temperature fluctuations, pressure drops, and reduced flow often result from various factors, including equipment malfunctions or upstream/downstream conditions. Additionally, fouling can take many forms—deposition, corrosion, or biological growth—making it hard to pinpoint the exact cause.

Solution with UptimeAI Expert:

- » UptimeAI Expert identified that the steam was losing 120°C, while the feedwater was only gaining 30°C to 40°C—below expected performance.
- » By monitoring key parameters such as the terminal temperature difference (TTD), drain cooler approach (DCA), and analyzing 22 specific tag readings, UptimeAI Expert identified fouling as the root cause of the efficiency drop and provided actionable recommendations.
- » This gave plant engineers the insights needed to resolve the anomalies and restore optimal operation.



Technical Overview of Heat Exchanger

At a Glance

Estimated Savings
\$150,000

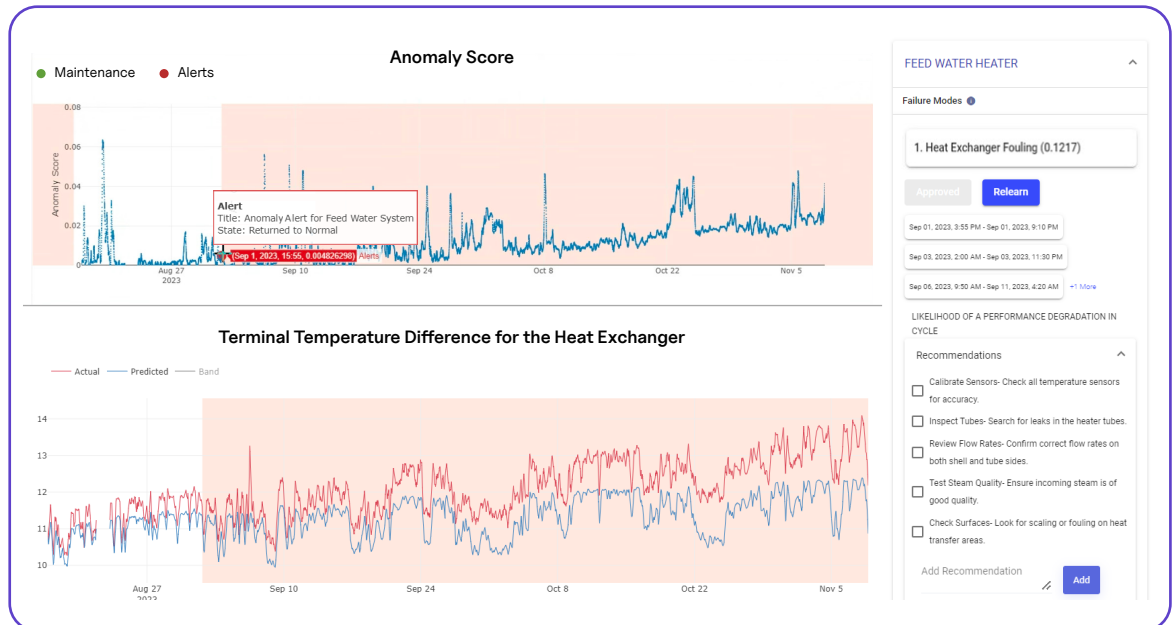
Increase in Efficiency
0.5%

Deployment Profile

Total Number of Assets
196
(Static: 40, Rotating: 156)

Deployment Timeline
< 6 Months

Number of Tags Linked
7256



About UptimeAI:

UptimeAI uniquely combines Artificial Intelligence with Subject Matter Knowledge from 200+ years of cumulative experience to explain interrelations across upstream/downstream equipment, adapt to changes, identify problems, and give prescriptive diagnosis like a human expert would.

The UptimeAI Expert OEx Platform serves as a trusted Subject Matter Expert, empowering plant engineers to achieve operational excellence with minimal dependency.