FROM DETECTION TO PREVENTION

Sensei Enabled Opto-Matic Oiler Ensures Boiler Feedwater Pump Reliability

Photo courtesy of Reworld™ FFX Mechanical Team

Sensei Devices Help Maintain Lubricant Levels

Reworld™

A long time power plant customer, Reworld™, realizes savings from installing Sensei Device on their boiler feedwater pumps.

Trico's Sensei Devices identified six low level lubricant events, preventing a potential of ***+$500,000 in operating costs and repairs.***

We're grateful to Reworld™ for sharing their journey with Trico and allowing us to showcase their success. Their willingness to share insights and outcomes is invaluable, and we hope their story inspires others.

Executive Summary

Lubrication is the lifeblood of industrial machinery, ensuring smooth operations, reducing friction, and minimizing wear in critical components. One of the most important components of lubrication is maintaining optimal lubricant levels and it is essential for the reliable performance of equipment such as boiler feedwater pumps. Even slight deviations from recommended levels can lead to overheating, increased wear, and ultimately, catastrophic equipment failure.

This case study will identify the challenges of visual and manual inspections and underscore the value directly associated with advanced sensor technology, specifically Sensei Devices and the real-time benefits of these continuous monitoring devices installed on electric boiler feedwater pump units at Reworld™.

Challenges

Despite its importance, monitoring lubricant levels remains a persistent challenge in industrial environments, due to:

- Labor intensive actions and introduced subjectivity and human error
- Difficult to access and hazardous locations
- Provides a single snapshot in time

Event Summary & Identification

Reworld™, a long-time Trico Corporation partner identified a need for enhanced monitoring on their critical electric boiler feed pump units, specifically requesting Trico's new Sensei Enabled Opto-Matic Oiler and Machine Vitals condition monitoring sensors. Installation occurred in September 2024 and identified over the course of the first five months, loss of lubricant trends and events on six separate occasions across four unique bearings on motors and pumps, shown below:

Unit	Asset	Bearing	Alert Type	Drop Date Start	Reading	Lowest Volume Date	Lowest Oil	Percent Volume Change	Time of Drop
BFP A	Pump	IB	Low Level	8/2/2024	78%	9/25/2024	38%	-40%	30+ days
BFP A	Motor	IB	Low Level	10/10/2024	75%	11/17/2024	25%	-50%	30+ days
BFP B	Motor	OB	Low Level	10/15/2024	53%	10/16/2024	17%	-36%	1 day
BFP B	Motor	OB	Low Level	11/2/2024	49%	11/3/2024	22%	-27%	1 day
BFP B	Motor	IB	Low Level	11/28/2024	49%	12/1/2024	12%	-37%	3 days
BFP B	Motor	OB	Low Level	11/30/2024	50%	11/30/2024	20%	-30%	4 hours

Low-level alerts detected a range of equipment-level events, including both sudden, event-based notifications indicating short-term lubricant losses and trend-based alerts revealing gradual lubricant depletion over a period of a month or more. These insights enabled proactive decision-making, allowing maintenance teams to allocate resources efficiently and address issues before they escalated, ensuring operational reliability and reducing downtime risk.

Value-Added, Predictive Maintenance

Electric boiler feedwater pumps are critical to the power generation process and loss of lubricant can have a catastrophic impact on the equipment. Through accessing the various direct, indirect, and safety/environmental costs, each identified event presents significant monetary and downtime savings. Based on information provided by the site, had the equipment failed it is estimated the following costs were avoided:

1. Minor Failure - $20,000 - $100,000
2. Moderate Failure (bearing damage) - $100,000 - $500,000
3. Severe Failure (catastrophic equipment damage) - $1,000,000+

Stay Ahead of Failures

Condition monitoring devices make it easier to monitor lubricant levels, avoid costly failures, and keep operations running smoothly. By using Sensei Enabled Opto-Matic Oilers and Machine Vitals, the power plant identified issues early, reduced downtime risks, and improved maintenance efficiency.

Want to see how Sensei Condition Monitoring can support your maintenance goals?
Reach out today to learn more or schedule a demo!