AW-LAKE
PROCESS FLOW MEASUREMENT

APPLICATION SPOTLIGHT

Steel & Aluminum Plant – Bearing Lubrication Integrity

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APPLICATION:

In a high-volume steel and aluminum manufacturing facility, precise gear lubrication is essential to maintaining the uptime and reliability of critical rolling and forming equipment. These facilities rely on large gearboxes and multiple lubrication points that must be continuously supplied with the correct volume of oil to prevent galling, overheating, or failure under extreme mechanical loads. The plant environment is characterized by high temperatures and the risk of water intrusion—conditions that challenge the consistency and quality of gear lubrication. Ensuring accurate flow and early detection of oil contamination is vital to protecting high-value assets and maintaining continuous production.

PRODUCT SUPPLIED:

- **JVA-60BBT-NS Gear Meters**
- **AW-Lake EDGE Sensors**
- **TCM-28K-SGSS-CSDS Coriolis Mass Meters**

CHALLENGE:

The customer experienced inconsistent lubricant spray patterns across the gearboxes, leading to localized under-lubrication and, eventually, gear damage. With numerous lubrication points across multiple machines, verifying even distribution was time-consuming and often reactive, only addressed after failures. The risk was compounded by water contamination in the oil reservoirs, which reduced lubrication quality and accelerated component wear. Without a reliable method to detect water ingress or measure lubricant flow in real-time, maintenance was largely schedule-based rather than condition-based—resulting in costly downtime, long lead times for replacement parts, and expensive equipment repairs.

SOLUTION:

To address these issues, AW-Lake provided a turnkey monitoring solution integrating several flow technologies. JVA-60BBT-NS gear meters equipped with EDG2-1A-13S sensors were installed downstream of the filter stands to assess spray quality across the gears inside the gearbox. Not only do these meters ensure that each spray point receives the required flow rate, but they also validate that gears and bearings are adequately protected during operation.

Additionally, the customer implemented a second-level monitoring system using AW-Lake's TCM-28K-SGSS-CSDS Coriolis meter at the lubrication system header. This meter measures total oil flow and continuously monitors fluid density. A rise in density signals water ingress into the oil—triggering a system shutdown to prevent further gear damage.

Together, this system gives the plant a powerful diagnostic and control tool to safeguard against both lubrication failure and contamination—protecting critical assets and improving overall reliability.