Customer Testimonial

Duolec® PAG Gear Lubricant (9707)

Shree Khedut Sahakari Khand Udyog Mandli Ltd – Village Pandvai, India

Transmission Gearbox (Sugar Mill)

- **Reduced temperature of transmission gearbox bearing by 15 degrees Celcius, eliminating the need for cooling**
- **Reduced frequency of lubrication from daily to every 15 days**
- **Reduced waste gear oil in effluent treatment plant**
- **Saved 30,000 Rs on lubricant per month, in addition to labour and effluent treatment savings**

Customer Profile

Shree Khedut Sahakari Khand Udyog Mandli Ltd is a sugar plant with a capacity of 3,500 tonnes per day. The company received Best Innovative System Adoption and Maintenance Award by Deccan Sugar Association from Maharashtra and Gujarat states.

Application

The plant had been using IOCL Servo 320 (a mineral-based oil) plus grease for its transmission gearbox lubrication. The lubrication cycle was 15 liters per shift of 12 hours.

Challenge

During the summer, the temperature of the gearbox increased dramatically, which could lead to failure of the gearbox bearing. To avoid this, they used exhaust fan and water cooling 24 hours a day, seven days a week, to keep the gearbox cool. However, the water was eroding the concrete flooring and turbine foundation. Even a small gap in the foundation could cause alignment failure of the mill turbine.

In addition to these problems, farmers were complaining about pollution of nearby sugarcane fields, and the Gujarat State Pollution Control Office sent notices to the factory to reduce the gear oil effluent.

LE Solution

The LE distributor recommended Duolec® PAG Gear Lubricant (9707) (formerly called Synpag), which is a PAG gear oil that was specially formulated for corrosion resistance, wear protection and thermal stability. Polyalkylene glycol (PAG) lubricants are synthetic formulations known for their high viscosity index, extreme pressure (EP) properties, and ability to handle temperature extremes. In addition to the PAG base fluid, this formulation features Duolec®, LE's proprietary dual-acting additive that provides both wear-reducing and EP protection.

Results

Even with the water and fan cooling, the operating temperature was 60 degrees Celcius with the IOCL lubricant. After switching to Duolec 9707, the operating temperature dropped to 45 degrees without water and fan cooling.

Switching to Duolec 9707 allowed the factory to eliminate water and fan cooling, and to reduce the frequency of lubrication from daily to every 15 days. Effluent oil discharge was reduced, and the mill was able to keep working without any stoppage.

Before Switch to LE

- Daily lubricant expense: 150 Rs / liter X 30 liter (gearbox sump size) = 4,500 Rs
- Monthly expenses = 4,500 X 30 = 135,000 Rs

After Switch to LE

- Daily lubricant expense: 3,500 Rs / liter X 15 = 52,500 Rs
- Monthly expenses = 52,500 X 2 = 105,000 Rs

Total Savings per Month

- 30,000 Rs on lubricant + additional savings on labour cost + effluent treatment expenses

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