

Industry: Plastic Fibers Manufacturing Plant Machine Type: Extruders, Gearboxes and Hydraulics

History

The plant had a regular vibration program using SKF monitors and software. A majority of equipment were extruders, gearboxes and hydraulics. The plant wanted to reduce repair and maintenance costs and efforts, standardize their lube purchasing and usage and reduce their oil consumption and disposal costs. The plant was interested in a laboratory oil analysis program, but not sure if it would add significantly to their Predictive Maintenance program goals. An SKF representative met with plant maintenance to review current programs and practices and to assess needs. Several oil samples were collected for baseline analyses. The plant experienced high repair costs, downtime, lube purchase and waste oil disposal costs.

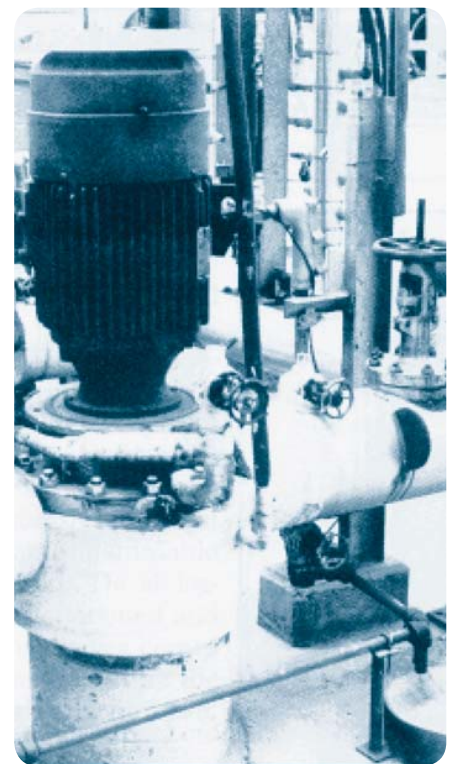
Lubricant laboratory analysis

Hydraulic and gear oils showed high levels of water and particulate contamination from improper storage and filling practices. Particulates are a primary source of gear, hydraulic and bearing wear. Water contamination causes rust and corrosion of equipment components, accelerates oxidation and sludging of oil, and can attack the oil additives, causing the oil to lose its protective properties.

Water and particulate contamination, as well as improper lubricant mixing, contributed high equipment wear and failures and required frequent lubricant change outs.

Evaluation

The plant was mixing several different kinds of lubricants in equipment reservoirs during "topping off". Mixed lubricants were often of different manufacturers, types and grades. Laboratory analysis confirmed that the resulting mixtures in the equipment sumps often did not contain the proper additives to effectively protect the equipment. Improper mixtures were contributing to increased wear and failures. SKF laboratory analysis confirmed that the oil analysis program could detect equipment wear problems and identify cause of the problems before equipment was damaged badly enough to show up as abnormal vibration readings.



Solution

The SKF laboratory suggested a plant evaluation to select proper lubricant for each type of equipment, to help set up a systematic lubricant purchasing and storage program, and to establish a regular lubricant based oil analysis program. The SKF laboratory also recommended combining vibration and lubricant analysis data in PRISM for Windows software to provide and integrate a condition monitoring database. The facility has initiated the revised lubricant monitoring program in conjunction with their vibration monitoring operation.

Impact

Although the program is newly initiated, less day-to-day downtime has been noticed, and the process of documenting decreased plant downtime has commenced.

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