HIGH PERFORMANCE ENHANCED LUBRICANT PRODUCTS THE CLEAR CHOICE FOR CEMENT PLANT OPEN GEARS

INTRODUCTION- Most Cement facilities require materials to be ground or pulverized for use in the manufacturing process. Much of this material is ground in Ball, Pebble, Rod or Breaker Mills. Many of these mills have large, open bull or ring gear and pinion gearsets as drive mechanisms. Lubrication of these large open gear systems presents a unique challenge due to the harsh environmental considerations in Cement plants as well as heavily loaded conditions.

HISTORY--Historically, open gear systems have used asphaltic compounds that provide a cushioning effect. In the past, most open gear compounds contained lead that provided protection for the gears. In recent years, many of the lead containing products have been removed from the market due to its being classified as a hazardous waste material. The resulting products without the lead have diminished performance characteristics and offered less protection for the gears. Users of the asphaltic based products are often constantly experiencing expensive problems & unscheduled downtime.

Housekeeping is a major consideration due to the large volume of product that must be used in an attempt to provide a continuous coating to the gears. In addition, where the asphaltic products have been used for many years, there is often a build up of hardened lubricant product in the roots of the gears. This presents multiple problems of cleaning and mechanical interference that can result in gear misalignment or stress on the pedestal mountings.

Many large open gear systems are lubricated using automatic spray systems. They function by providing the lubricants to the bull or ring gear teeth at set intervals in metered amounts. The solids in many of these asphaltic compounds have been found to cause abrasion or erosion of the closely machined parts in the metering blocks and have plugged the nozzles. This can result in uneven or inadequate lubrication of the gearset.

Until recently, many Cement Plants & companies had no choice but to use the asphaltic compounds. But the Cement industry now has an alternative: one manufacturer that provides an enhanced lubricant product line that addresses the demanding needs of open gear lubrication. The PYROSHIELD® product line from Lubrication Engineers Inc provides superior lubrication and resolves the many concerns that confront the cement industry operators of large open gear driven equipment.

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The benefits from using high performance "enhanced" Open Gear Lubricants are as follows:

IMPROVED CLEANLINESS-The housekeeping costs associated with the use of asphaltic based products are difficult to estimate. Operators have reported labor requirements in excess of four man-days to clean some units. Due to the volume of product used, build up around the shrouds and the local area can be sticky, messy and dangerously slippery. Normally, less volume of high performance PYROSHIELD products are required to provide far superior gear protection while maintaining the system cleanliness and ultimately, the housekeeping is improved.

ELIMINATION OF HAZARDOUS WASTE DISPOSAL COSTS—Today's enhanced lubricant products can be treated as ordinary used lubricants and can often be added to the fuel or coal burned in the normal operation of many plants. The asphaltic compounds can contain Polycyclic Aromatic Hydrocarbons (PAH) that require disposal as a hazardous waste. Costs for disposal of hazardous waste can be very expensive, not to mention the cost and bother of "cradle to grave" record keeping for these products. In these times of environmental protection, the choice of using a safe, non-hazardous enhanced lubricant like 9011 PYROSHIELD is surely the wise choice.

IMPROVED GEAR PROTECTION-- Asphaltic based compounds typically have Timken Load ratings of 20 to 25 lbs. and rely on excessive volume for adequate protection. The Timken ratings for enhanced lubricant products exceed 60 lbs. Some synthetics such as 9000, 9001 and 9011 PYROSHIELD Syn-Gear Lubricants and 5180 PYROSHIELD achieve results as high as 90 lbs. The FZG gear test is used to evaluate gear protection on actual gears. As recently as December 2006 an enhanced synthetic such as 9011 PYROSHIELD achieved a fourteenth stage pass in this critically important test. This added protection reduces gear wear and extends the life of the gear system. Extending the life of your gear train adds profit to the bottom line through improved reliability and availability of these large capital assets.

LOWER LUBRICATION COSTS--Although high performance enhanced lubricants may be priced higher per unit volume to purchase, reduced consumption and improved reliability of the gear train often results in an overall reduction in lubrication cost. For example, Halkis Cement (part of the Lafarge Group) in Greece experienced an 87% reduction in the amount of lubricant used when they converted their 6 ball mills to PYROSHIELD.

REDUCED ELECTRICAL CONSUMPTION--Because of the superior lubricating qualities of enhanced open gear lubricants, many operators have experienced up to a 2% to 5% reduction in electrical costs. Reduced friction resulting from superior lubrication can be reflected in reduced energy consumption. L.E. has documented substantial temperature drops, some exceeding 30^{o}F (18°C) during the conversion process and continuing during normal operation.

Like many Cement Plants worldwide already, consider the advantages of converting your Cement processing ball mills to high performance enhanced open gear lubricant products. They can provide improved reliability and equipment availability which greatly improves the bottom line profits and return on net assets (RONA). The choice should be clear.