The influence of EP additives in light turbine oils used in High Speed High Power Turbogears

Some facts regarding the use of oils treated with EP additives:

- → There are light turbine oils on the market, ISO VG 32 and VG 46, which are capable of passing FZG load stage (LS) 6, failing LS 7 without enhancement by EP additives. This stage level was recommended to ISO WG 11 for ISO 13691 draft. However, the risk of another type of surface damage may occur.
- → Although micropitting phenomena are an insidious type of surface distress not clearly understood there is evidence among research lubrication engineers that suggest EP additives while suppressing scuffing actually encourage micropitting. This correlation is currently unproven; however, there is enough evidence to gain the attention of the Society of Tribologists and Lubrication Engineers (STLE) and the AGMA Tribology Subcommittee to work jointly on a two-year test program for the purpose of learning more about this behavior. Lubrizol, Exxon/Mobil Research and Shell/Texaco have taken the lead in this research.
- → Lube oils containing EP additives have limited life. Due to continual exposure to high operating temperatures over time requires such lube oils be changed periodically. This is a big expense for many of our customers, particularly those whose installations are in remote, ecologically sensitive areas such as Alaska. There are installations in Alaska that are operating with non EP lube oil which is 15 years old.
- → API requires 10 micron filtration. Many EP additives cannot pass 10 micron filtration.

In summary: we support the recommendation to apply lube oils which are additive free and naturally capable of passing FZG LS 6 for high pitch line velocity applications where the flash temperature calculation is at an upper limit.