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Transmission & Bearing Corp.

Technical Notes by Dr. Mel

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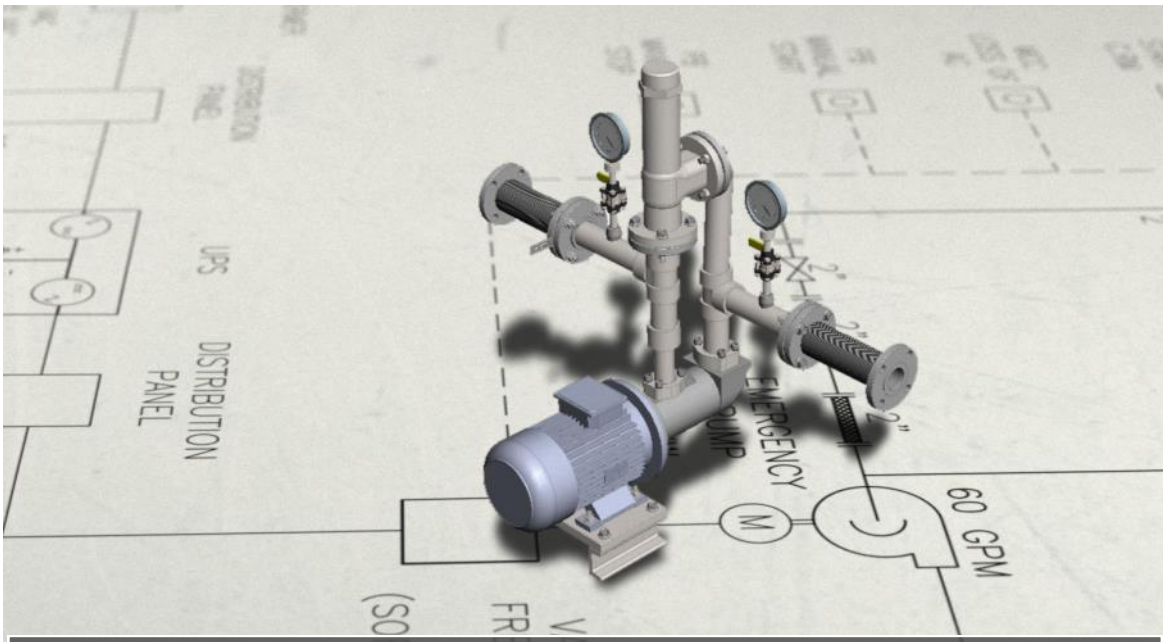
New Technology System: Emergency Lube Oil Pump Systems based on AC / UPS / VFD Technology and Other Commercially Available Components

Compact Emergency Lube Oil Systems

Historically, almost all emergency lube oil pumps for Steam Turbine-Generators, Compressors and Pumps, and other rotating machinery have been based on either DC battery power or on auxiliary steam power. These usually work, but do have drawbacks.

TRI Transmission & Bearing Corporation has a new generation emergency lube oil pumping system that addresses these drawbacks.



TRI designs ELO systems to meet your needs. TRI designs P& I D drawings, purchases all components including all piping, valves, filters, and instruments, and to assemble and perform full-flow and full-pressure tests.

Call TRI at (800) 363-8571 for more information about ELO Systems.

43rd Turbomachinery
30th Pump SYMPOSIA
GEORGE R. BROWN CONVENTION CENTER
HOUSTON, TX | SEPT. 22 - 25, 2014

TRI will be at Booth 1506 at the 2014 Turbomachinery Symposium in Houston, TX from September 23rd to the 25th.

DC EMERGENCY LUBE OIL SYSTEM DRAWBACKS

- Large banks of DC batteries have to be handled with a great deal of caution.
- DC motors must be specially designed for speed stabilization.
- DC motor starters with large resistors that step up the speed are a special order item.
- DC switchgear often is problematic.
- It is difficult today to find electrical suppliers who have any significant understanding of DC power systems. It is difficult to get DC components that you need, even when you have exact specifications for equipment that was commonly available a few years ago.
- Steam powered oil pumps require the inlet steam valve to be "on" in order for the oil pump to work when it is needed. Many steam control valves are old and likely have not been serviced because they are not understood, and often are closed to save steam. They are rarely removed, cleaned, and refurbished and therefore, steam powered oil pumps sometimes do not function properly when needed.

THE AC SOLUTION PROVIDED BY TRI

TRI has developed an Emergency Lube Oil System that is compact (small foot print) and is based on current AC technology that is commercially available. AC powered pumps start oil flowing immediately and reach full flow within 0.7 seconds, faster than many DC powered pumps.

The oil pump is positive displacement, C-face mounted to a motor, operating at high speed to reduce size and complexity, and is commercially available. A critically important point is that the cost is substantially lower than any DC based system.

The current AC technology includes an Uninterrupted Power Supply (UPS), switchgear, transformer and variable frequency drive (VFD), all commercially available, **though they must be sized and specified to work together.**

A key element is the VFD. The start-up acceleration rate is a "compromise" between being fast enough to meet the lube oil requirements of the plant's process equipment, and slow enough to limit the "in-rush" current to be well within the capability of the UPS.

Contact TRI with your requirements & TRI will design build, test and supply an ELO system for your application

This Technical Note was written by Dr. Melbourne F. Giberson, P.E., President of TRI Transmission & Bearing Corp., Turbo Research, Inc. The objectives of Technical Notes are to disseminate information and experience on understanding problems and how to solve them. We attempt to send this Technical Note only to those people for whom the information might be useful. Over the years, many people have asked to be added to the distribution list (see our website). Occasionally, a few individuals inform us that they do not wish to receive the information. Should you desire not to receive future Technical Notes, please advise TRI by info@turboresearch.com or click visit the removal page on the TRI web site MFG 09/2014