TECHNICAL BULLETIN ON MILITEC-1 DELAYING BEARING FAILURE

July 27, 1993

BACKGROUND:

The bearing in question operates in a 200 hp Zurn induced draft fan with a 5-inch shaft and 6-foot diameter rotor, operating in a large food processing plant in Mississippi. The normal life of the bearing is 2 to 3 years and it was nearing its end. To monitor its condition, a vibration analyzer is used that can sense the vibration emanating from the bearing. By measuring the amplitude and frequency of the vibration, the condition of the bearing can be determined. The temperature of the bearing is also measured. When the bearing was tested (May, 1992), the results showed a very serious outer race defect. The data indicated that the bearing would only survive another couple of weeks at best and could even break down within an hour.

ACTION:

Rather than remove the bearing at the time the bearing's weak condition became known, a decision was made to test Militec-1 to see if there would be any benefit through improved lubrication.

RESULTS:

Upon application of Militec-1, the vibration and temperature characteristics that had indicated an outer race defect showed a dramatic change. While Militec-1 cannot repair a torn-up bearing, it was able to reduce the symptoms of the defect to a non-threatening level. This benefit lasted about 4 1/2 months, after which the earlier vibration and temperature characteristics returned. Again, instead of removing the bearing, Militec-1 was added; incurring the same positive response. Five months later (February, 1993), this was again repeated. It was in July, 1993, that the bearing was finally removed; not because of a failure but because the plant was shut down for its summer break and there was curiosity as to the condition of the bearing. The bearing had a severe outer race defect as first detected 14 months earlier. At the time of shutdown, the bearing was still running low vibration and low temperature, yet the defect was severe enough to show that the bearing should not have survived.