TECHNICAL BULLETIN ON MILITEC-1® IN TWIN CUMMINS DIESELS

February 27, 1992

Background:

- This report comes from a power plant in Maryland. The twin diesel locomotive engines are used to drive a generator which supplies power to the traction motor of a locomotive. The locomotive transports coal cars from the main rail to the coal unloader.

Specifications:

- The 50-ton, 300 hp locomotive with twin Cummins diesel engines. The engines were put in service in 1960 and were last rebuilt in 1981. They each have a five gallon oil reservoir using a 15W 40 oil. They each use four 8-volt, 80-amp batteries for start-up.

Problem:

- When the engines are dry-started in very cold weather, or when they are restarted after having been running and are still hot, the four 8-volt batteries are inadequate. There is too much resistance in the engines when dry-starting on cold days due to the thickness of the oil. When restarting at times when the engine is still hot, the pistons have expanded and this also creates too much resistance. The solution had been to use a specially designed 32-volt, 80-amp charger to provide auxiliary power on top of the power supplied by the on-board batteries for restart or very cold weather start-up.

Application:

- One 16-ounce bottle of Militec-1 was emptied into each 5-gallon oil reservoir.

Results:

- The Militec-1 application was in late December and the engines have had two months with enough wintry days to judge the benefits of Militec-1 on the coldest of days. Since the time Militec-1 was applied, the auxiliary power source has not been needed as the engines start up without any sign of the resistance that was characteristic of these engines before Militec-1 was applied. The same result has been found when the engines are restarted while they are still hot. The fuel handling supervisor has reported that the engines now start up very easily with less resistance and charger assistance.

Aftermath:

- The fuel handling supervisor in the power plant's coal yard was sufficiently pleased with the results of Militec-1 in the Cummins engines that he has applied Militec-1 to the engines of a D9 (365 hp) and a D8L (335 hp) Caterpillar bulldozers. These are used for very heavy loads (about 70,000 to 80,000 lbs. per push).