

**6802 MULTILEC® INDUSTRIAL OIL  
MAJOR COAL FIRED POWER PLANT, MONTANA**

**Atlas Copco Rotary Screw 200 hp Compressor • SIC 4911 Electric Service**

**SAVINGS OF \$284.10 IN ANNUAL  
ELECTRICAL ENERGY COSTS FOR ONE UNIT**

**CUSTOMER PROFILE**

A Major Coal Fired Power Plant located in Montana provides electrical energy for several counties in and around Yellowstone County, which encompasses Billings, Montana. This station is a supplement to the larger plants in Eastern Montana. They have been an LE customer since 1989.

**APPLICATION**

Two Atlas Copco rotary screw 200 hp water-cooled compressors provide the plant air. Unit A and Unit B run side by side, dividing time to provide all plant air. Each unit runs approximately 4000 hours per year.

**AREA OF INTEREST**

The power plant wanted to see if LE's ZAP Energy Saving Program could produce a reduction in amperage and electrical energy costs.

**LE SOLUTION**

LE's ZAP Energy Saving Program has been proven successful in all types of applications, including air compressors. In conjunction with LE's ZAP Program, LE's 6802 ISO 46 MULTILEC Industrial Oil was recommended to reduce amperage in the air compressors and prolong their effective operation life. MULTILEC is blended with LE's proprietary additive, MONOLEC®. Based on anticipated savings, the power plant personnel agreed to a conversion on one of the units.

**CUSTOMER COST SAVINGS**

Prior to the conversion to LE's 6802 MULTILEC Industrial Oil, amperage readings were taken on the unit. The three-leg average showed an amperage reading of 208. After the conversion to LE's 6802, the average amperage on the three legs was reduced to 204.6; a reduction of 3.4 amps.

The following formula is used to estimate the cost of a unit's electrical consumption.

$$\begin{aligned} & .\text{Volts} \times \text{Amps Saved} \times 1.73^* = \text{kW} \\ & \text{kW} \times \text{Hours of Operation Per Year} = \text{kWh} \\ & \text{kWh} \times \text{Electrical Energy Cost} = \text{Annual Savings} \\ & * \text{Conversion factor for a 3-Phase power source.} \end{aligned}$$

$$\begin{aligned} & .483 \times 3.4 \times 1.73 = 2.841 \\ & 2.841 \times 4,000 = 11,364 \\ & 11,364 \times \$0.025 = \$284.10 \end{aligned}$$

***LE's 6802 MULTILEC® Industrial Oil saves 11,364 kWh/year or \$284.10 in annual electrical energy costs for one unit.***

The Power Company assigned a value/cost of 2.5¢ per kWh as a point of reference to reflect potential electrical savings. However, they were just as interested in the kilowatt hours saved annually.

LE's 6802 has maintained 16,000 hour drain intervals over the last eight years. Oil analysis is done yearly to ensure the oil is acceptable for continued use.

### ***OTHER PRODUCTS USED***

This plant has two sister coal fired plants using LE's 1250 and 1251 ALMASOL® High Temperature Lubricant on their soot blower bearings, 6451 MONOLEC® Turbine Oil as their steam turbine oil, 4622 MONOLEC® Multiplex Lubricant as a general plant lubricant, and 608 ALMASOL® Vari-Purpose Gear Lubricant for the journal bearings on C.E. Raymond Bowl Mills.

We wish to thank the personnel at the power plant and LE Representative Jim Pezoldt for the information provided to prepare this report.



**Jim Pezoldt**