

TCO CASE STUDY

PETROCHEMICAL

Powerseal Premium Rewind Improves Motor Reliability

THE CHALLENGE

A Midwest coal-fired power plant motor experienced a winding failure caused by high thermal stress from a bearing failure. To prevent future winding failures, the stator was rewound with IPS's PowerSeal premium electrical insulation system. After three years, the motor experienced damage to both bearings. IPS performed a root cause failure analysis and determined clogged air filters were preventing proper airflow into the motor, creating a vacuum pressure and sucking oil out of both bearing housings into the stator. Every time more oil was added to either bearing, it would get sucked out and deposited onto the windings resulting in both sleeve bearings overheating from lack of lubrication.

THE SOLUTION

IPS performed electrical testing on the PowerSeal stator windings that were covered in oil and dirt; and achieved initial readings exceeding industry established standards, indicating that the winding insulation was not damaged. IPS repaired both sleeve bearings and machined four new oil rings and labyrinth seals in-house. We also worked with customer engineers to adjust pressure in the bearing housing to prevent oil from being sucked out of the bearing housings by connecting an air hose to the baffle.



Before: PowerSeal windings received covered in oil & dirt



After: PowerSeal windings after cleaning are like new

RESULTS

By utilizing our patented PowerSeal insulation system, we saved the customer more than \$20,000 over a three-year period. The PowerSeal winding was not damaged; therefore, it did not require any additional rewinds; this also saved the customer three days of unplanned downtime since we only needed to repair the bearing.

A Savings of More Than
\$20,000
Over A Three-Year Period!