



# Case Study

NYE LUBRICANTS SUCCESS STORIES

CONFIDENTIAL



**Industry:** Power & Utility

**Application:** Variable Speed AC Motor

**Component:** Bearing

**Time Period:** October 2014 - 2nd Quarter 2015

## BACKGROUND

A leading coal production company approached Nye about a motor at their truck load out that experienced bearing failures from fluting corrosion on the raceways. The application that the bearing failure occurred in was a variable speed motor used to drive a conveyor belt via speed reducers. The motor runs 20 to 40 hours per week at a speed of 1600 to 2200 rpms. The motor uses open, deep groove ball bearings. The company had twelve motors with the bearing failure problem, thus leading to costly down times.

**For more information, contact our technical expert.**

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Coal Mining Plant

## CHALLENGE

How can a grease get the induced voltage on the rotor shaft under 3 volts and stop the motor bearings from voltage-induced failure?

## SOLUTION

1. Nye recommended packing an electrically conductive grease into the bearing.
2. NyoGel® 758G was chosen because is not only electrically conductive, but it is also a good bearing grease formulated for demanding applications.
3. The Coal Company tested 758G and found that the grease was able to lower the voltage induced on the rotor shaft from 17 volts down to .8 volts.

Lubricant Properties	NyoGel® 758G	Test Method
Base Oil	Ester	
Thickener	Lithium Soap	
Temperature Range	-40 to 150°C	
Volume Resistivity (25°C)	623 ohm/cm	Nye CTM
Kinematic Viscosity (100°C)	6.6 cSt	ASTM D-445
NLGI Grade	3	ASTM D-217
ISO Viscosity Grade (40°C)	32	
Evaporation (24hrs, 100°C)	0.18%	ASTM D-972

## RESULTS

After running for two weeks, the voltage reading was reading .31 volts. The motors also did not experience bearing failures with 758G, like they did with the non-conductive grease used before. The hours until failure on the fan end bearing improved from the 400-450 range to over 1200 hours. The lubricant increased the life of the bearing by 300% and was able to help the motors achieve good mechanical performance.