Graphite Metallizing Corporation December 2010

GRAPHALLOY® Bushings Keep Geothermal Brine Pumps Pumping

GRAPHALLOY® bushings were made to conquer harsh environments. And what test could be tougher than a brine pump at a geothermal power plant?

Geothermal power is an important source of renewable energy because it is cost effective, reliable, sustainable and environmentally friendly. One U.S. power plant - a large commercial producer of geothermal energy - was experiencing major problems with its geothermal brine pumps. Geothermal brine is highly corrosive and was causing the 416SS Boron coated bearings to fail and, as a result, service life was severely reduced.

The pumps are Johnston Pump Model 24.5 x 8 x 10 Type JTCF (Discharge Head and nine stages of Type 12ES Bowls) with the following service conditions:

Flow: 1300 GPM

Total Developed Head: 485 feet

Temperature: 350° F - 400° F/180° C - 200° C

Specific Gravity: 0.89 SG

The maintenance staff at the plant tried several other bearing materials, including bronze and a type of PEEK plastic. Neither provided acceptable performance. In 2008, the staff converted one of the brine pumps to Nickel GRAPHALLOY because they knew of its resistance to corrosion and its non-galling properties.

Results have exceeded expectations. In fact, the Maintenance Staff recently converted two additional brine pumps to Nickel GRAPHALLOY.

GRAPHALLOY bearings have been improving the operation of pumps in difficult applications for almost a century. Graphite Metallizing, makers of GRAPHALLOY, has been supplying products to companies involved in the production of clean, renewable energy for many years. Because of the extreme nature of the environments required to generate geothermal power, the use of traditional bearings often proves difficult. Yet GRAPHALLOY is tough enough for these applications.

Is GRAPHALLOY a good fit for your pump application? Our engineers can walk you through the key advantages of these bearings and discuss the right GRAPHALLOY solution for you.