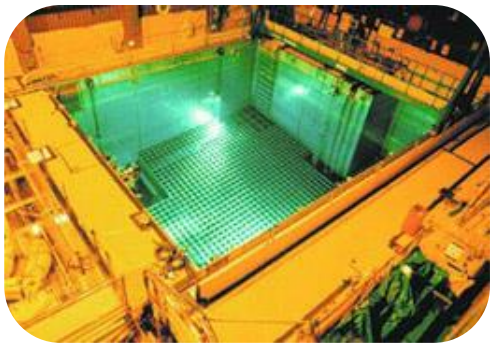
GRAPHALLOY® CASE HISTORY

DS2090-407

Spent Fuel Pool of Nuclear Reactor

CUSTOMER:

Nuclear Reactor Business



APPLICATION:

The water-pool option involves storing spent fuel assemblies under at least 20 feet of water, which provides adequate shielding from the radiation for anyone near the pool. The assemblies are moved into the water pools from the reactor along the bottom of water canals, so that the spent fuel is always shielded to protect workers.

About one-fourth to one-third of the total fuel load from the pools is spent and removed from the reactor every 12 to 18 months and replaced with fresh fuel.

To move the spent fuel rods, an X-Y Table is utilized. The X-Y table translates in either direction with linear bearings.

Operating conditions were radioactive ambient water, light loading (5 to 10 lbs), linear motion was 0.5 ft/sec. The table operates from 4-8 hours at a time but may stay under water for weeks at a time

PROBLEM:

The X-Y table linear bearings traditionally use bronze SAE 660 bushings but have been having premature wear and seizing issues. The SAE 660 bushings were corroding in the radioactive water. Contaminates from fuel rods will likely fall onto the XY table and shafts. Corrosion failure would occur when the table would be sitting idle.

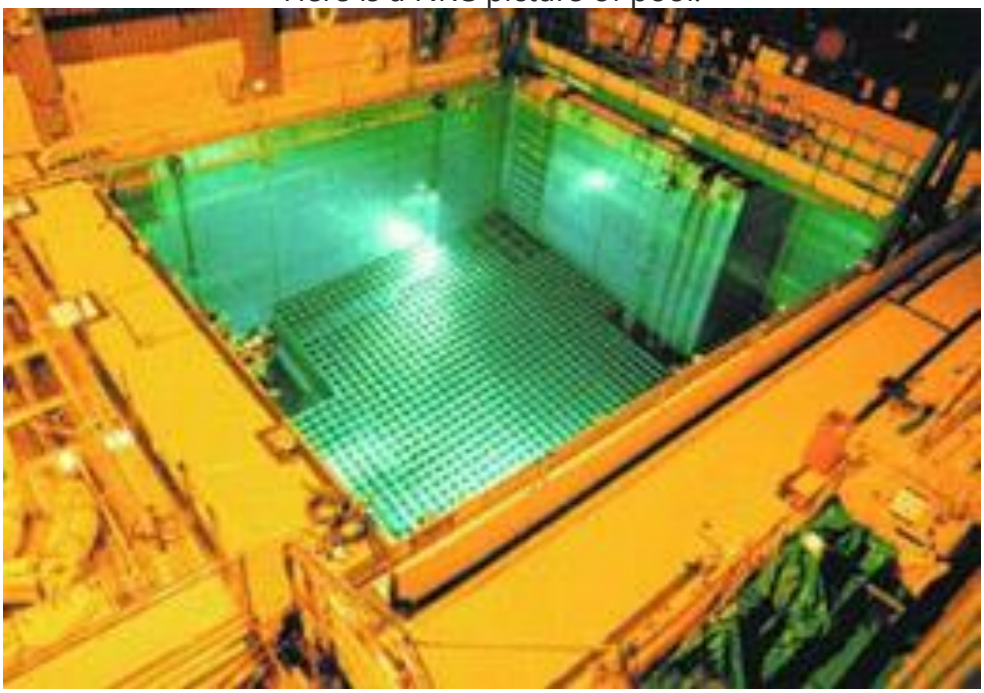
With the level of failures: public safety, employee safety, disposal of contaminated X-Y tables with bushings was of utmost concern.

GRAPHALLOY SOLUTION:

The Graphalloy bearings have been operating for more than 12 months without corroding or seizing. The problem was solved.

Spent Fuel Pool of Nuclear Reactor

Here is a NRC picture of pool:



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