

PROBLEMS IN HYDROGEN COOLED GENERATOR REVEALED BY HIGH PD ACTIVITY

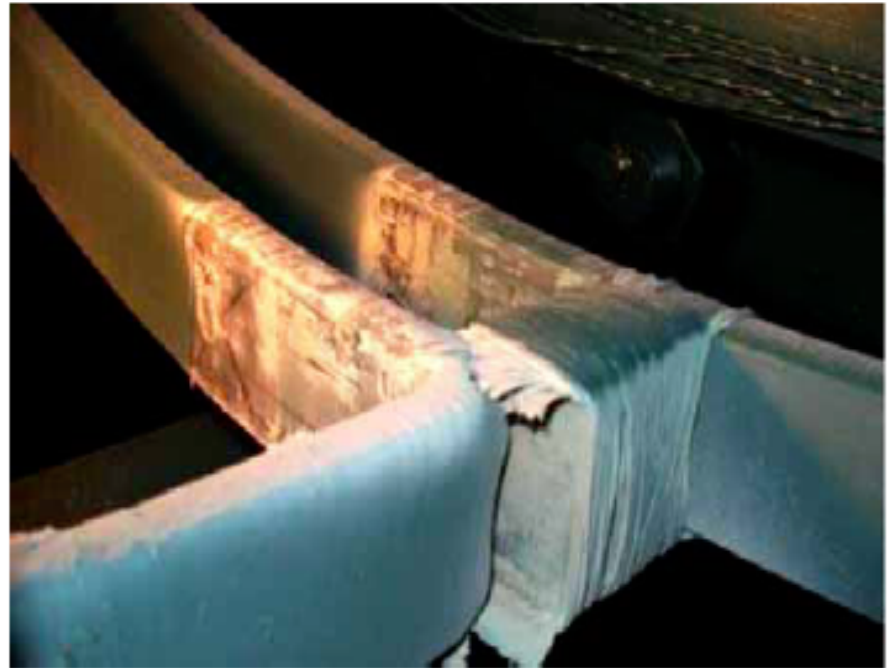


Figure 1. Support Block Ties Broken

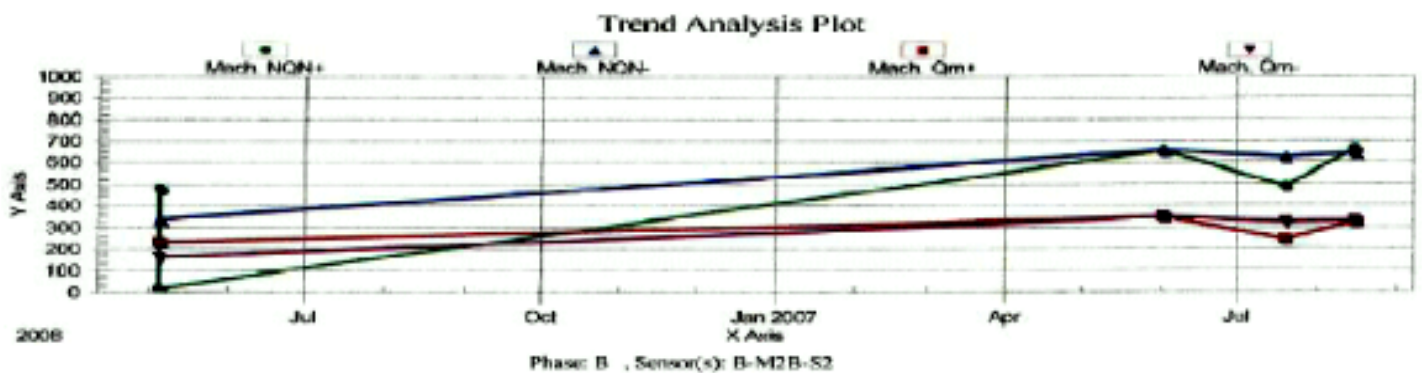


Figure 2. High PD Activity



Figure 3. Incorrectly Installed Wedges

Company: Midwest US Utility
Ratings: 173 MW, 18 kV, Hydrogen Cooled Turbine Generator, 3 years in operation

PD Sensors: Two Bus Couplers per phase

Details:

"...With the high H₂ pressure the levels (30-35 psig) were expected to be very low but instead were very high after only a year of operation. We initially expected to find problems with the couplers as we did not believe the results ... We were somewhat prepared to find stator looseness or contamination; however we were not prepared for the extent of the damage..."

Excerpt from report by the Lead Maintenance Engineer of the plant (October 2007). The alarm level from the Iris' 2005 Database Statistical Analysis is 224 mV for the 31-50 psi range.