END-WINDING DISCHARGE

SIGNIFICANT REDUCTION IN PD LEVELS AFTER REPAIR

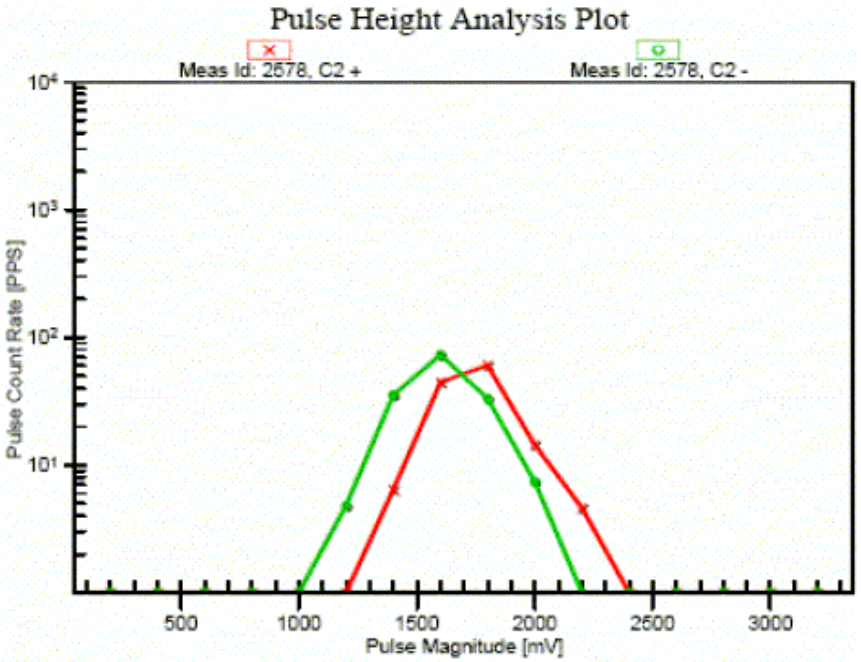

Figure 1. 2D PD Plot Showing Hump at High Magnitudes – Phase C

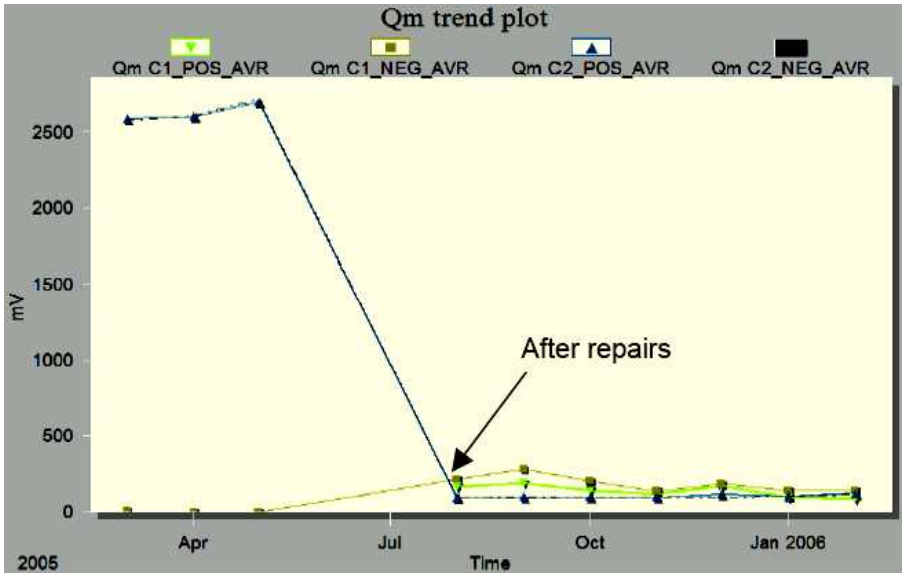

Figure 2. Trend of PD activity – Phase C

Company: BC Hydro
Ratings: 239 MVA, 13.8 kV, Air Cooled Hydro Generator
Manufacturer: Confidential
Related Info: 37 years old
PD Sensors: Six PDA Couplers per phase

Details:

"…This winding was subjected to PD activity in the end-turns of the winding… In the 2D PD plot, it can be seen that a large hump appeared at high magnitudes in both the positive and negative PD activities… The winding was repaired by cleaning the 10 bars closest to the PD couplers; these bars were coated with red glyptal epoxy. After the repair, trending of HydroTrac data showed a significant reduction in PD levels as shown in Figure…"

Excerpt from paper "Partial Discharge Measurements on Hydro Generator Stator Windings Case Studies", by S. Li and M. Chow" in IRMC June 2006