

## PowerPatch<sup>®</sup> Repair of City Power Cydna Substation 22kV 40 MVA Transformer

**Problem:** City Power in Johannesburg South Africa had a badly leaking 40 MVA substation transformer that was leaking oil from the lids and doors. The transformer was installed in 1932 and was leaking between 700 and 800 litres of oil a week.

**Solution:** After doing a patch at the Orlando Substation in Soweto in the beginning of March 2009 with excellent results, City Power afforded us the opportunity to attempt to fix this problematic transformer. With City Power crew assisting us the transformer was prepared for repairs. The transformer was washed down with a safety solvent to remove most of the oil. The paint and grime was then removed with electrical grinders and brushes and the surface cleaned with Type TR<sup>™</sup> cleaner. At the seams the gasket was cut away and the area cleaned. We cleaned around the insulators as well. Because of the magnitude of the sealing it was decided to use the slow cure PowerPatch<sup>™</sup>. The application went well and we could cover about 60 linear cm per tub. We used 48 tubs of the slow cure PowerPatch<sup>™</sup> covering about 29 linear meters of seams. In addition we also used 2 single kits of PowerPatch<sup>™</sup> to patch holes where the oil was dripping out.

**Results:** After more than 1 week running at full power there has been no necessity to top up the oil. This already means a saving of 800liters of oil.



View of transformer



Magnitude of the oil leak



Cleaned seam



Applying slow cure PowerPatch<sup>™</sup>



Smoothing out the PowerPatch<sup>™</sup>



Completed job.