

Background

Our client contracted Eden Transformer Oil to sample their liquid filled transformers and perform routine and dissolved gas analysis as part of their preventative maintenance program.

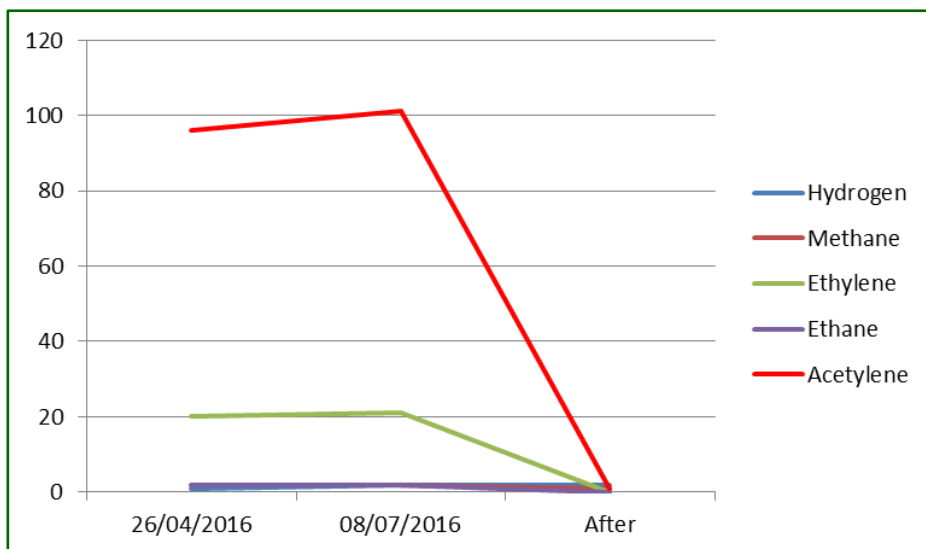
This particular transformer is a 2MVA with 1,500 litres of mineral based transformer oil manufactured in 1994.

The transformer was sampled according to BS EN 60475:2011 on 26th April 2016 and when analysed the dissolved gasses indicated serious levels of Acetylene and elevated Ethylene.

The interpretation was *"high energy discharge, arc with power follow through, increasing energy of deterioration"*.

The transformer was sampled again on the 8th July and the gasses had increased, indicating an on-going fault.

The site's chief electrical engineer decided to take the transformer out of service for one night to enable an internal inspection and if possible on-site repair.



Solution

The oil was removed to Intermediate Bulk Containers (IBCs) for temporary storage and the transformer lid removed to enable Eden's high voltage maintenance partners to carry out the internal inspection.

The root cause of the problem was the contact point of the selector ring of the tap changers, the spring pressure when pressed was significantly weaker on the old units due to age and the temperatures generated by the fault.

There also appeared to be little sign of usage, a problem common to offload changers that are not used after commissioning.

A replacement tap-changer was supplied and fitted.

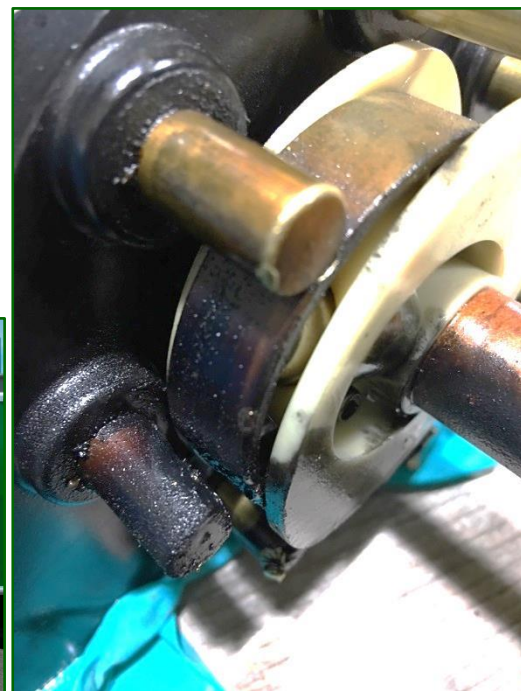
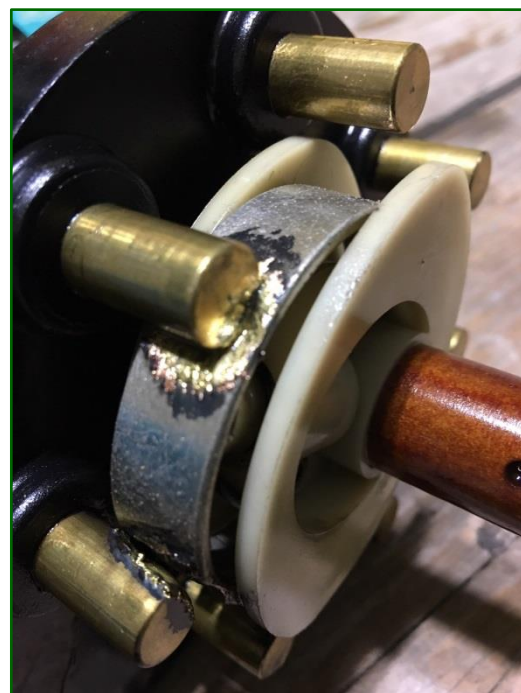
New gaskets were fabricated and installed as part of the repair.

A vacuum purification plant was used to recondition the insulating oil, this removed the dissolved gasses and a new datum sample was taken for future comparison.

The purification of the oil via the plant also saved on the cost of replacing the oil with new and the disposal costs of the waste oil.

Following the purification and de-gassing of the oil it far exceeded the requirements of BS EN 60422:2013.

The works were satisfactorily completed and the transformer tested and reenergised in one eight hour night time outage.



About Us

Eden was formed by Alan Denbow and Eddie Gregory in August 1985.

Former employees of Burmah Castrol, they realised that the vast majority of electrical engineers were simply replacing expensive transformer oil without fully appreciating the additional technical benefits of purification to the electrical equipment, and that Eden could achieve a more convenient solution at a significantly lower cost.

In more recent years the treatment of transformer oil is the first choice for a cost effective and efficient maintenance program: the increasing cost of new oil, the importance of productivity and equipment downtime, coupled with the environmental benefits of avoiding the transportation of hazardous waste and use of virgin products, are all part of the equation.

As well as providing on-site transformer oil treatment, if needed, Eden can supply and install new or reconditioned insulating liquid and provide all of the on and off-site sampling and analysis to ensure transformers are supervised and maintained according to British Standards (BS EN 60422:2013) and insurance underwriters requirements.

Our online store is ideal for customers requiring smaller quantities of insulating liquids, desiccant breathers, spill kits and other regularly used consumables. All of our products are sourced in the UK and used on site every day by Eden staff, so they are tried and tested in the field.



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Waste Carrier License: CBDU1214230 **Waste Storage Permit :** EPR/BB3506LF