

Paris Session 2022



Transformer accessory & component replacement

A2 PS3 3.3

Technology evolves and some older designs may become obsolete (subcomponents, auxiliary equipment, OLTC, cooling system, etc.), but still installed by users due to other constraints (history, local standards, maintenance practices, operation, compatibility) How to manage the end-of-life of these assets and organize a smooth overlap between two vastly different generations?

Carl Wolmarans & Adesh Singh – South Africa



Transformer Accessory and Component Replacement

- The core asset (power transformer active part) can outlive its accessories and components.
- Three main aspects should be the focus when considering component changes and overall transformer refurbishment:
 - 1. Engineering change management**
 - 2. Asset condition and cost-benefit analysis**
 - 3. Specification, procurement and spare keeping strategy**

Engineering Changes and Cost-Benefit Analysis

- **Engineering change management processes**
 - Formalization which transformers have had design changes to
 - For example, if an OLTC is retrofitted from oil-type to vacuum-type it is essential this is properly controlled and documented.
 - The component/accessory manufacturer should be consulted regarding warranty conditions.
- **Asset condition and cost-benefit analysis**
 - The remaining life of the transformer and the operational risks should be taken into account before executing projects that aim to upgrade its components.

Component/Accessory Specifications

- For components such as OLTC (including parts), bushings, valves, it is common practice to procure these items for a wide range of transformers. In these cases, backwards and forwards compatibility aspects are key.
- Specifications for these items need to be revised often and
- Manufacturers should be often consulted regarding the availability of components meeting historic standards/specifications.
- The advantage of customisation needs to be balanced against the costs and lead time increases that non-standard requirements attract.