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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?

A particular reality of power transformer fleet maintenance is that 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:

- **Engineering change management processes** should be in place (for the utility or end user) which formalizes which transformers are having design changes to them. 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** should be done. The remaining life of the transformer and the operational risks should be taken into account before executing projects that aim to upgrade its components.
- **Holistic component specification, procurement and spare keeping strategy** 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. This means that the specifications for these items need to be revised often and manufacturers consulted regarding the availability of components meeting such requirements. The advantage of customisation needs to be balanced against the costs and lead time increases that non-standard requirement attract.

For example, resin impregnated bushings are being retrofitted in place of OIP. Users and manufactures have collaborated to ensure dimensional compatibility and ease of installation. There are retrofits available for most existing "old" tap changers. Cost benefit analysis and life cycle management is key to making the case for such operations.

Additionally key practical aspects of component maintenance and replacement on a transformer are also:

- Is a full oil drain or partial drain sufficient? Sometimes oil drains can cause unforeseen problems in older transformers (impregnation issues, unit no longer suitable for a strong vacuum)
- Is the outage duration on the transformer tolerable for the specific network situation. Weigh up the estimated time to perform the component/accessory changes on site versus a full transformer swap (with a strategic spare for example).

Before during and after the works, electrical tests, visual inspections, a review of the maintenance history and oil sample analysis should be conducted. The cost of executing the project should be weighed up against the returns.