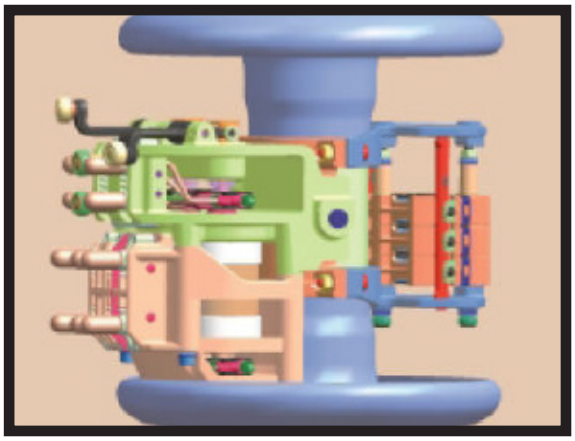
TNB RESEARCH

R&D Fund Project

Evaluation of VACUTAP On-Load Tap Changer for Distribution Power Transformer

VACUTAP OLTC



OLTC

Project Overview

Defect contacts, moisture and carbon particles in the insulating oils were identified as the main causes of OLTC failure in power transformer. Recent development of OLTC has utilized vacuum interrupter or contactors for tap switching. Hence there is no changing of contacts and no carbonization of the oil. The project aim is to evaluate the feasibility of using vacuum load tap changer in 33/11kV TNB Distribution power transformer. The technical performance of the vacuum load tap changer known as VACUTAP is compared to the conventional OILTAP load tap changer in-service. The study focused on load tap changer design VACUTAP VV III 400D and OILTAP V III 350D.

Deliverables

a) A report on the potential and suitability of VACUTAP OLTC to be used in TNBD transformer including the modification requirements to the current design of power transformers.
b) Life-cycle cost savings for the VACUTAP OLTC used in power transformer.

Benefits

a) The availability and reliability of transformer can be increased through the improvement in OLTC design. The arc voltage in vacuum is considerably lower than in oil, and thus reduced contact wear in OLTC and the energy consumption.
b) The life-cycle maintenance cost of OLTC can be reduced since the new VACUTAP OLTC
has a longer maintenance interval of up to 300,000 operations as compared to the conventional OLTC with operational life of 100,000 operations.