INTISARI

Transformator ialah alat yang dapat digunakan untuk memindahkan daya dari belitan satu ke belitan lainnya disertai perubahan arus dan tegangan bedasarkan induksi elektromagnetik. Suatu trafo yang digunakan terus menerus akan mengalami penurunan performa bahkan rusak, perbaikan trafo harus dilakukan berdasarkan standar supaya semua spesifikasi yang ada dapat terpenuhi dan perbaikan layak untuk diterima.

Pada pengerjaan proyek akhir ini, penulis mengambil studi kasus berupa perbaikan pada tansformator basah *(oil filled transformer)* 3 fasa 6300 V/400 V dengan kapasitas 3000 KVA yang mengalami kerusakan berupa daya tembus isolasi pada sisi kumparan tegangan tinggi yang rendah dan pemasangan koneksi yang kurang tepat sehingga timbul *flashover* (percikan bunga api) saat dioperasikan.

Langkah perbaikan yang dilakukan ialah *rewinding*, namun hanya pada sisi tegangan tinggi. Prosesnya meliputi *re*-isolasi pada semua kawat tembaga lama yang isolasinya rusak dan penggantian minyak trafo yang baru. Setelah proses perbaikan, dilakukan uji kelayakan melalui sejumlah pengujian elektrik yang meliputi pengujian hambatan DC, rasio tegangan, hambatan isolasi, indeks polaritas, pengujian hubung singkat, vektor grup, dan *energize* berdasarkan standar *Electrical Apparatus Service Assocation (EASA).*

Kata kunci : Transformator, *Rewinding*, Pengujian Elektrik, EASA.

ABSTRACT

The transformer is a tool that can be used to transfer power from one winding to another winding accompanied by changes in the current and voltage based on electromagnetic induction. A performance of transformer that used continuously will be decreased even damaged, repairing process of the transformer must be based on a standard to complete all of specifications are available and the result of repairing can be received properly.

At this final project report, the case that the author analyse is repairing of wet transformer (oil filled transformers) 3-phase 6300 V / 400 V with a capacity of 3000 KVA that suffered damage on the permeable insulation on the side of the high voltage coil is low and installation of connections are less precise, so flashover (sparks) is occurs when it was operated.

The solution that will be performed for this repairing process is rewinding, but it is only on the high voltage side. The process involves re-insulation on all of old wire that the insulation is damaged and replacement of new transformer oil. After the repair process, quality accurance will be performed through a number of electrical tests included DC resistance test, transformer turn ratio test, insulation resistance test, polarity index, short-circuit test, vector group test and energize based on electrical Electrical Apparatus Service Assocation (EASA) standard.

Keywords: Transformers, Rewinding, Electrical Test, EASA.