CHAPTER FIVE
CONCLUSION AND RECOMMENDATION

5.1 Conclusion

The need for commissioning tests of high voltage electrical equipment is obvious to new substations. Shipping and installation damage, field and factory wiring errors, manufacturing defects, and components not in accordance with specifications are some of the many problems that can be detected by appropriate testing. When these defects are found before start-up they can be corrected under warranty and without the safety hazards and possible equipment damages that can occur if discovered after startup or energizing. In addition, test results obtained during commissioning tests are invaluable as base reference data for the periodic testing that is an essential element of an effective maintenance program. The use of a comprehensive Commissioning tests is like an insurance policy. In this project Commissioning tests for high voltage equipment are found as follow.

For power transformer dielectric tests, transformer oil tests, impulse voltage test, transformer parameters calculations tests and special or type tests are presented. For circuit breakers insulation resistance, high voltage, timing and contact resistance are presented. For bus bars insulation resistance, contact resistance test and high voltage test are found. For earthing system Earth Resistance or Impedance Measurements, Earth Conductor Joint Resistance Measurements, Earth Connection Resistance Measurements and touch and step voltage measurements are presented.

For instrument transformers insulation resistance test, polarity test, burden test, magnetizing curve test and high voltage test are presented. For dc system capacity test, voltage level test, polarity test and insulation resistance test are presented.

For protective relays Primary injection and secondary injection test are found. For power cables Phase Sequence Test, Insulation Resistance Test, Very Low Frequency Test and Dc Sheath Test are presented.

5.2 Recommendation

1. Study the effect of altitude, humidity and temperature on commissioning test of high voltage equipment.

2- Study the effect of a comprehensive commissioning tests for high voltage equipment on the economical considerations.

References

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