

**Title of the Project :**

**MONITORING AND CONTROL OF ATC LOSSES IN ELECTRIC DISTRIBUTION SYSTEMS**

**Project Approval Letter Reference:** UGC Ref. F. No. 38-247/2009 (SR),  
Dated 24<sup>th</sup> December 2009

**Name of the Principal Investigator:** Dr.N.Kamaraj, Professor & Head, Dept. of EEE

**Project Amount:** Rs. 8,76,200.00; **Period:** 2010-2012

**ABSTRACT**

Indian electricity network is the largest Network having longest circuit KM transmission lines in the world. The Problems of Indian power sectors are plant load factors, lack of optimization of generation, frequent load shedding, and burnouts, high losses (Technical & Commercial losses), poor quality of power supply, poor revenue collection efficiency. National goal is to provide reliable, affordable and quality power to all by 2020. This Project made an attempt to measure the ATC losses in a Distribution system and identified ways and means to Measure & Reduce and Monitor ATC losses. Software is being developed in MS EXCEL to calculate the ATC losses. If all the details of a feeder like, line length, Size of conductor, transformer ratings, Load current, Voltage level, capacitor location and rating, import and export power, revenue collected are given as inputs, the software will calculate ATC losses and prepare a graphical reports.

During this project it is found that in many places in the distribution side of the selected electrical feeders, the connections are weak in joints, defective capacitors, overloaded Distribution transformers, wrong connections in Energy meters and no procedure & practices to calculate ATC losses. After set righting all the identified issues, the measured ATC loss in the selected distribution system is well within the limit prescribed by the APDRP of GoI.

After making measurements, rectifying the defects and implementing the corrective measures the following conclusions are arrived:

- ATC losses (Before remedial measures) /month -11.02%
  - ATC losses (after remedial measure implemented) /month - 10.06%
  - Amount of Savings per month - Rs 48,348.06
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- Man Power trained :Project Fellow – 02
  - Equipment Purchased :Power Quality Analyzer, Power Manager, Energy Meter, Hand-held Power Meter.

- Ph.D. Awarded :Nil
- M.E. Thesis completed :01 (Ways and Means to Reduce ATC losses in a Radial Distribution Systems; 2012-13)
- Publication of Results :Published a paper in 4<sup>th</sup> National power Engineering Conference-NPEC 2013, organized by Thiagarajar College of Engineering, Madurai during 2-3, March 2013