RELIABILITY CENTERED ASSET MANAGEMENT (RCAM)

The missing link in improving electricity network efficiency

The electricity supply system at the distribution level in Pakistan is facing very tight operating conditions due to the significant load growth and lack of proper maintenance. Though several development programs for both power generation and electricity networks are scheduled and ongoing, a comprehensive asset management process for distribution network is missing.

Reliability Centered Asset Management (RCAM®) approach has been very successful in developed countries. Since it is a simple approach with substantial involvement of utility operators, it can be equally successful in Pakistan as well. The desired goal is to increase the electricity network's operational efficiency, while maintaining or improving the supply reliability performance.

The explicit goal of the RCAM® process is to provide detailed and quantitative information on both network economical and supply reliability performance, so that a long-term successful asset management strategy can be defined. In this respect, asset management strategies comprise the preventive maintenance strategies and preventive replacement strategies (i.e. definition of expected technical lifetime) for different component types in the system. Fig 1 gives a graphical overview of the basic correlations relevant for asset management in electrical networks.

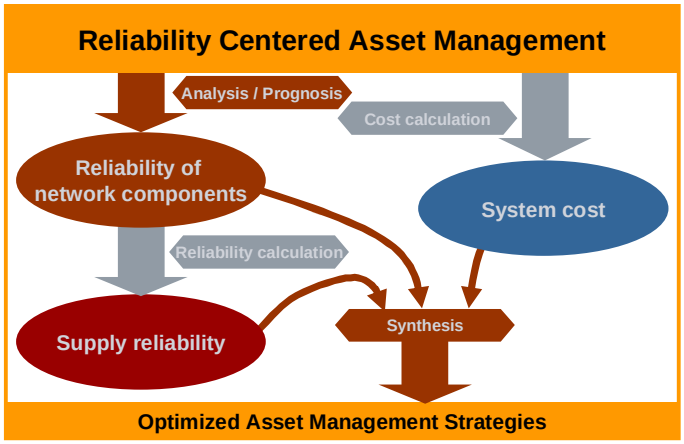

Figure 1: Basic correlations relevant for the RCAM process

While proper Asset Management strategies improve the technical efficiency of a network, administrative efficiency can be improved by reduction of non-technical losses (administrative losses or theft). In Pakistan, since the administrative losses constitute 2/3rd of total losses (in developed countries these losses are 1/3rd of total losses), Asset Management techniques can be applied to formulate strategies for improving administrative efficiency as well.

The availability of suitable input data in Pakistan is often a limiting and troublesome factor in the practical application of any asset management methods for reduction of both the above losses.

With the help of 4 case studies, this presentation will explain that sufficiently reliable input data can be easily obtained by simple means to apply RCAM technique and obtain desired results.