

PROBLEM STATEMENT:

The Challenge before us:

“Blinding ignorance does mislead us. O! Wretched mortals, open your eyes!”

Leonardo da Vinci

Energy crises have been a major issue of concern across the globe. A viable and immediate solution in this juncture is saving of energy as cited by the slogan “Energy saved is energy generated”. When power is generated, transmitted and distributed from one location to another, due to inherent characteristics of the system, certain losses would occur. These losses cannot be totally eliminated but it is possible to reduce these losses with considerable investments. At present the T&D losses in INDIA is about 22% as compared to 13% in CHINA, 9% in KOREA and 7% in U.S.A. The government of INDIA is insisting that the various power utilities in the country should take effective steps to bring down the T&D losses to the level of 12%. A reduction in T&D losses by 1% would lead to the savings of 4638.9 lakh units of energy every year. In addition to these T&D losses, the electrical system losses prevailing in INDIA are also much higher compared to International standards’.

Design an extensive solution to reduce the T&D losses and other related losses, considering the following aspects:

- Electrical losses in power generating, transmission and distributing equipments.
- Corona losses in EHV levels and above.
- Losses due to failure or mal-operation in acting of protective relaying systems and switchgear.
- VAr losses.
- Losses due to poor efficiency and overloading.

Other losses may also be considered.

“Genius is one percent inspiration and ninety-nine percent perspiration”.

Edison

JUDGING PARAMETERS:

- ✚ Innovation and feasibility of the solution.
- ✚ Implementation aspect and economical considerations undertaken.
- ✚ Understanding of the problem.

✚ Queries answered and points put forward in Open Discussion. Major weight age will be given to this point.