

R& M OF SUBSTATION AND TRANSMISSION LINES

To cope up with growing demand for power, construction of new Transmission Lines and Sub-Stations is always a difficult proposition due to various factors like high initial investment, approvals, ROW and environmental concerns. R&M and upgradation of existing projects is one of the cost effective alternatives to increase the power transmission capabilities and reduce losses of a Transmission System. The transmission line and substation voltage upgrading offer considerable advantages. The conversion of transmission lines and substations to higher voltages has emerged as a viable alternative in meeting load growth or transmission requirements. This approach offers several advantages. In addition to the practical aspects such as use of available Right of Way (ROW) and substation site (i.e better utilisation of existing transmission system), the economic advantages may be of considerable interest, particularly if some of the original foundations, structure, or equipment can be used with minimal modifications. The economic advantage is also linked with reduction in losses. The ratio of specified substation insulation level to the rated voltage decreases substantially with increasing system voltage level. In other words, there are much higher margins with lower voltage substation than with substation of higher operating voltages. Further, with the availability of metal oxide surge arresters, there is considerable opportunity for substation voltage upgrading in the operating voltage range below 245 kV. To effectively implement various such schemes, CEA Engineers gained knowledge in the following areas during training/ familiarization on Technology Improvement Program in Power Systems at Chicago, USA:

- Residual Life Assessment of Sub-Station and Transmission Lines
- Upgradation of Sub-Station and Transmission Line