

## BACKGROUND TO BR EVALUATION OF POLYMERIC INSULATORS

Following previous (limited) investigations by BR Research in 1973 into material failures it was decided that a further materials evaluation should be carried out. Not by low-voltage screening tests such as IEC 112 (CTI) or IEC 587 (inclined plane), but by tests at full working voltage (25 kV) on full sized insulators (1m creepage), using at least 4 of each sample. Two tests would be employed, a salt fog chamber for rapid screening and an outdoor exposure site to include weathering effects. In addition the outdoor site would employ accelerated rainfall to reduce the testing time.

Although PTFE and Dow silicone elastomer had equal good performance after 5 yrs testing, after longer accelerated testing (not detailed in the report) the PTFE suffered erosion whilst the silicone elastomer was undamaged, and became the preferred material. The versatility of the silicone elastomer material and its good laboratory and service performance ensure that it will be used in a growing number of high voltage, outdoor insulator equipments.