

## Project Title

High-voltage Glass Insulators  
Product Recall & Re-inspection, UK

**In 2004 a major manufacturer of glass insulators for use in the high voltage electricity supply and distribution sector became aware of a defective insulator amongst a batch supplied to the UK market. As a consequence and given the safety implications of such a defect our client instigated a nationwide product recall / re-inspection and replaced the very small number found to be defective.**



*High Voltage Electricity Transmission Pylon*

High voltage transmission lines operate under the most challenging conditions and require the highest degree of reliability to ensure an uninterrupted supply to consumers. Whilst representing only a few percent of the cost of overhead lines the insulators used to isolate the high voltage supplies play a crucial role in both the reliability of the line, the safety of people employed to maintain the distribution infrastructure, and the safety of the public. These insulators installed on overhead power lines are subjected to wide variations in temperature due to rapidly changing weather conditions and fluctuating electrical loads

Since the 1950's the selection of toughened glass insulators has been increasing on all high voltage overhead lines, for AC up to 800kV and for DC up

to 600kV. The reliability of high quality toughened glass insulators and the ease of maintenance have been key factors in its success.

Because it does not have a crystallographic structure, the intrinsic dielectric strength of glass is much higher than for any other material used for insulators. Toughened glass suspension insulators are commonly preferred to withstand the effects of time and the elements and also to endure mechanical and electrical overload conditions



*Multi-element insulator awaiting installation*

Modern manufacturers adopt customized process and control systems designed to produce high quality, pure glass, free from defects but with perfect toughening capability. Quality control problems can still arise and these can have serious financial implications where units have already been dispatched ready for installation and commissioning.

ICC were instructed to investigate the contractual and financial consequences of one such product recall programme involving an imported batch of suspect insulators distributed to power stations and transmission facilities throughout the UK