

EHV Cable Circuits in England & Wales

Steve Swingler



University of
Southampton



- National Grid
- 275 kV and 400 kV circuits
- Mainly self-contained oil-filled
- Installed since 1964

Long 275 kV cable systems

- 26 circuits > 5 km
- 11 circuits > 10 km
- Installed in major cities
- 1964-1967
- 2000 mm² Cu conductor
- Direct buried

Long 400 kV cable systems

- 12 circuits > 5 km
- 4 circuits at 10 – 12 km
- London or Environmental
- 1970-1983
- 2000/2500 mm² Cu conductor
- Direct buried – Unequal routes
- 20 km XLPE in London tunnel

London Tunnel



Nunthorpe – Newby 400 kV Cable



Technical Issues

- Cables over 40 years old
- More tunnels in London
- Water cooling
- Reactive compensation
- Reactors/SVC
- Reduced switching operations