CONFIDENTIAL
AND
COMMERCIALLY
SENSITIVE

Transmission Investment

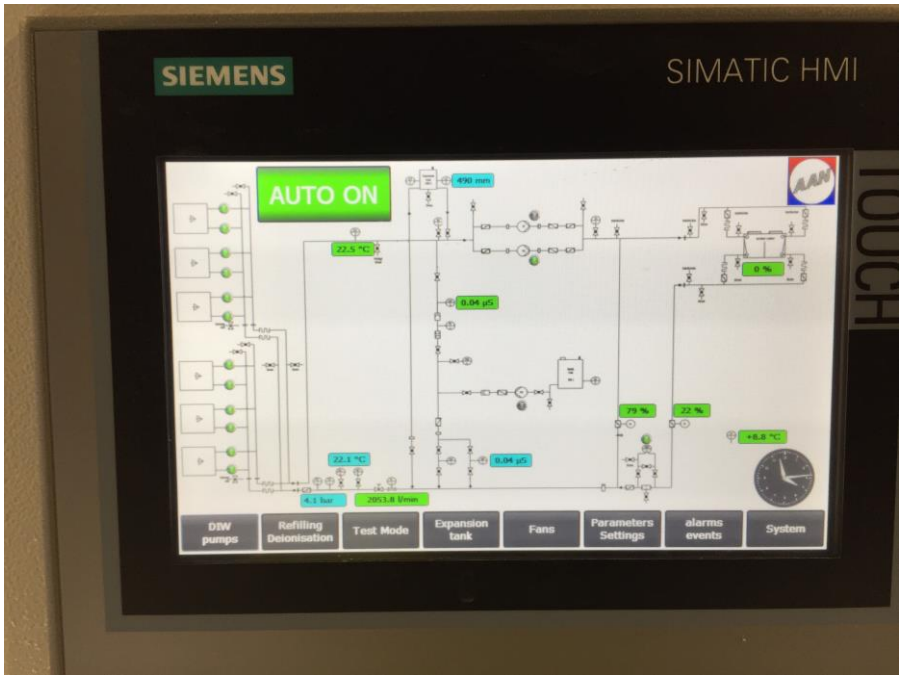
CM085 - NOVEMBER 2023

STATCOMS / SVCs – OWNERS VIEW

- **These are very complicated and expensive pieces of equipment.**
- **High maintenance costs.**
- **They are not an electronic shunt reactor – designed to provide dynamic reactive capability.**
- **High electrical losses**

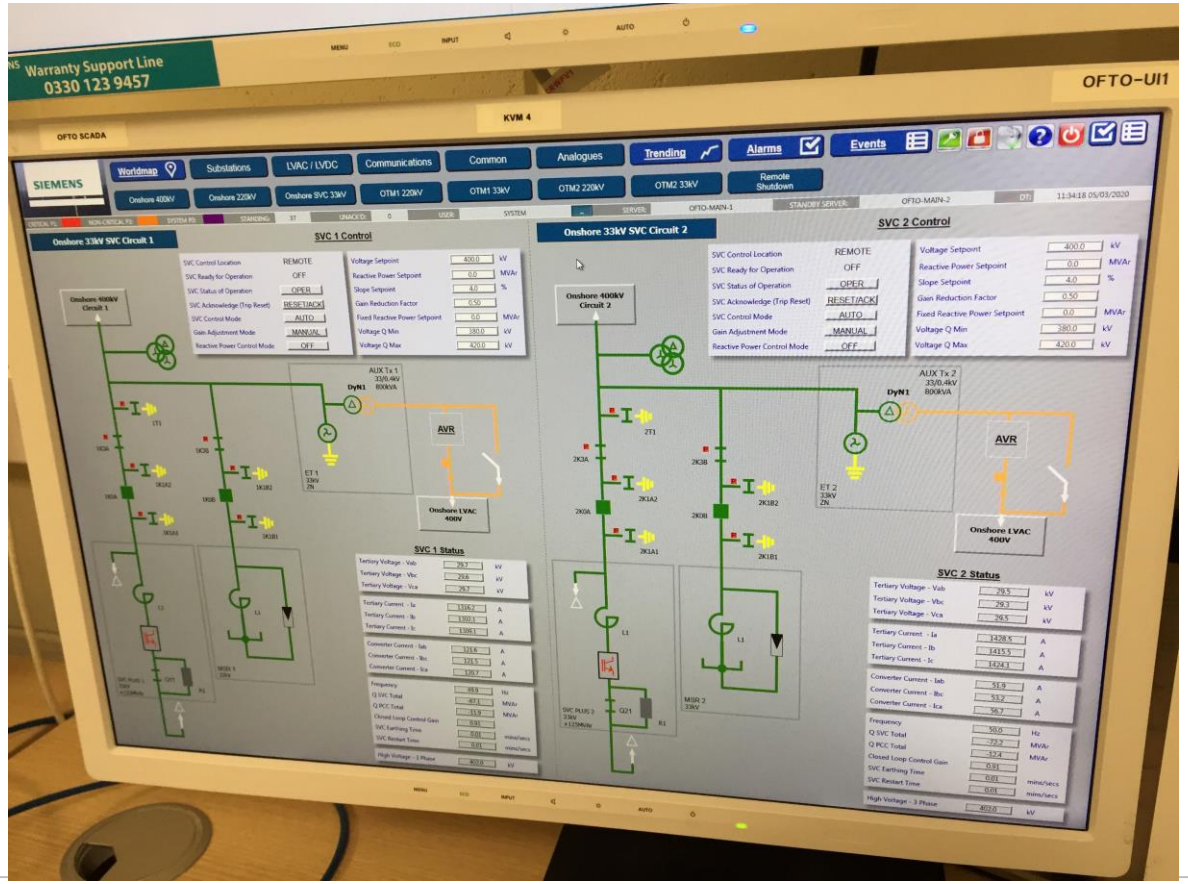
STATCOMS / SVCs – OWNERS VIEW

- **Operation at extremes of capability stresses components:**
  - IGBT Valves & Valve cooling systems
  - Converter room HVAC
  - MSRs
  - Transformer tertiary windings & tap changers



STATCOMS / SVCs – OWNERS VIEW

- **For the suggested 8 x 200MVAr Shunt reactor replacement @ 33% utilisation annual electrical losses for the SVC solution is ~£2.5m pa compared with £0.5m pa from a shunt reactor solution. Capital cost of an SVC is 4-5 times that of a shunt reactor.**



STATCOMS / SVCs – OWNERS VIEW

- **Additional maintenance costs will vary from SVC to SVC as they vary significantly in configuration and complexity.**
- **As a first stab rule of thumb the additional costs per SVC from operation at high loads is £75k per SVC per year on average.**
- **Comprising:**
  - IGBT failures
  - Cooling system
  - HVAC
  - MSR maintenance / replacement
  - Tap changer maintenance
- **Some designs are more reliable designs than others.**

STATCOMS / SVCs – OWNERS VIEW

- **Most OFTO systems can operate without the SVC and routinely do during maintenance.**
- **BUT – still a view within ESO that such operation is not compliant with Sec K.**
- **If the SVC is broken and the main system cannot operate then the losses for a 10 day outage is £1.5m!**
- **Why should the OFTO take this additional risk?**