

Transpower's experience with SVC Life Extensions

SC B4 PS3 Question 3.1 – FACTS and Power Electronics (PE)

*When an SVC needs refurbishment work, does your utility consider replacing it with a STATCOM?
Do the SVC's degraded operation modes impact this decision? What is the utility's experience in
specifying the IGBT valves' redundancy in STATCOM converters? Does the overvoltage inductive
cycle specified in your network for SVCs/Statcom's come from simulations or technical guidelines?*

Doug Ray on behalf of Geethma Dissanayake / Michael Dalzell
New Zealand



SC B4 PS3 Q3.1 – FACTS and Power Electronics (PE)

- Transpower New Zealand Ltd has taken the approach of life extension of both HVDC and power electronics equipment based on the condition of the assets, network requirements, and economic considerations such as the whole of life cost.
- We have committed to refurbishing multiple SVCs across the network as the majority of the primary plant is still in good condition while the control & protection system and some auxiliary plant such as the cooling systems are becoming unreliable or obsolete. The whole of life cost of this option is cheaper than upgrading to a modern STATCOM.
- Transpower New Zealand Ltd experience has been that Multi-level STATCOM power module failure rates are much higher than SVC thyristor failure rates. Replacement power modules are also much more costly to purchase than thyristors.
- Transpower New Zealand Ltd specifies availability requirements on our STATCOM specifications and the manufacturer will determine the level of IGBT valve redundancy accordingly.