

TSO approach to C&P system security and lifetime extension

B4 - DC systems and power electronics
Preferential Subject 1 Q1.5 How should the
existing HVDC installations manage the
security issues and updates? How can the
lifetime of control systems be extended?

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Q1.5 a) How should the existing HVDC installations manage the security issues and updates?

- Use **strict and systematic in-depth cyber security management** within the utility
 - **IT & OT** experts to build it up together
- **Restrict** (especially remote) **access** to the C&P equipment at site
- **Strict user management**, use of AD domain
- **Secure management of passwords**
 - No default passwords
 - Sufficient length and difficulty
 - Secure transition from vendor’s “factory” passwords to “customer” passwords
- Use of **secure communication** and **documentation** of sensitive parts of the installations
 - IP addresses, switch/router/firewall configurations, passwords, etc.
- Use of **SIEM** (Security Information and Event Management) tools (logging), where it is possible
- **Update** operating systems and software systematically and regularly, where it is possible

Q1.5 b) How can the lifetime of control systems be extended?

- Vendors to find safe & feasible ways to **replace** failing ageing components one-by-one (retrofit), even after they become obsolete
- Vendors to actively **inform** owners about component lifetime expectations and before they are reaching limited availability and obsolescence
- Owners to proactively purchase sufficient number of **spares**, before they become obsolete.
- Use of **latest platforms** for project implementations → to reach maximum lifetime until obsolescence
 - On the other hand, systems must be proven and comprehensively tested before use
- Going towards **virtualized** solutions
 - At least for part of the C&P systems, it can be done in steps separately for
 - Station control & monitoring layer
 - Control & protection main computer layer
 - Hardware independency

Thank you for your attention !