1. Objective

This Standards Alert is to clarify the requirements for AC supplies in substations where there is limited access to nearby local distribution network.

2. Introduction

Solar and Wind Farm DCTs projects typically consist of remote Switching Stations only, with no EQL owned Power Transformers, local supply transformers, or nearby local distribution network. To ensure EQL substations have a reliable source of LV AC supply for normal operation new standards are required.

Reliance on a customer sourced 400/230V AC supply will put the supply to the substation battery charger at risk, along with the DC Systems that supply protection, control, SCADA and communications.

To mitigate this risk against balancing cost competitive solutions for our Customers the following solution is recommended for switching stations with no local supply transformers:

- Main AC Supply – System Voltage (i.e. 132kV or 66kV) Power VT, single phase, supply from our substation (25kVA, 240V AC, approximately 100 A).
- Backup AC Supply - Customer 240V, single phase, AC supply from customer with Automatic Transfer Switch on the EQL owned AC Board to changeover between the two.
- EQL owned Main AC Board will have provision for a portable generator connection with a Manual Transfer Switch.
- Each EQL owned DC System will have a 10-hour standby capacity intended for emergency purposes only.

When establishing larger, multi bay switching stations that contain multiple bus sections and are radially supplied or connected to existing EQL owned network feeders:

- 2 Power Voltage Transformers (one on each bus section) will be used without a connection from the Customer’s AC supply.

Consideration of the following factors contribute to the above requirements:

- Type of network connection (ring/radial)
- Impact on the network connection (no. of at risk customers)
- Availability of a nearby local distribution network
- Proximity to nearest major depot
3. Update to Manuals

RED364 Substation Design Standard and STNW3023 will be combined and update in 2020.

4. Further Information

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