SPE ELECTRICAL

CASE STUDY 5: HUNTEC TECHNOLOGY

POLLINGTON SOLAR FARM: POWER SYSTEM STUDIES

Client:	**Huntec Technology**
Industry:	**Renewables**
Plant Type:	**Solar Farm**
Project:	**System Studies**
Contract:	**Lump Sum**
Date:	**2016**

"SPE carried out a P28 Transformer Energisation Study, G5/4 Stage 2 Harmonics Study and an Earthing Study."

SPE was appointed by Huntec Technology to undertake a series of power system studies for a new 4MW solar PV array installed at Pollington, UK.

SPE carried out a P28 Transformer Energisation study to identify any limitations on switching the system transformers using the PSCAD simulation package. After identifying the transient voltage dip exceeded normal P28 allowances, SPE liaised with the end client to discuss potential solutions to the system such as PIR's, pre-magnetisation and energisation from the LV side.

SPE created a model of the main power system and part of the DNO network in ETAP, before carrying out a Stage 2 G5/4 harmonics study to assess the impact of the PV array on the DNO network. This included representing the background harmonic levels and output of the converters, against a variety of fault levels to ensure compliance with the DNOs available harmonic limits.

SPE also undertook a detailed analysis of the HV and LV earthing system using the CDEGS design package. After subcontracting a soil resistivity study to a local company, SPE developed a detailed model of the soil layers, fault current return paths and the earth grid, before carrying out detailed Earth Potential Rise (EPR) calculations and detailed touch and step voltage calculations for the site.

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