



**SPE ELECTRICAL**



## **CASE STUDY 10: LARK POWER SERVICES**

### **NEW 7.5MW STOR GENERATION: POWER SYSTEM STUDIES**

|                    |                     |
|--------------------|---------------------|
| <b>Client:</b>     | Lark Power Services |
| <b>Industry:</b>   | Generation          |
| <b>Plant Type:</b> | Diesel Generation   |
| <b>Project:</b>    | System Studies      |
| <b>Contract:</b>   | Lump Sum            |
| <b>Date:</b>       | 2017                |

**“SPE was appointed to undertake a range of power system studies to support construction of a new 7.5MW generating station.”**

SPE was contracted by Lark Power Services to undertake a wide range of power system studies for a new 7.5MW diesel generating plant in Derbyshire, for the new STOR / EFR response contracts.

SPE’s scope included a short circuit G74 study and protection coordination study using the ETAP software package. This required the creations of a detailed model of the whole power system, and a Time Current Curve plot generated for each of the main overcurrent and earth fault coordination scenarios.

SPE also carried out a detailed P28 transformer energisation study using the EMTP-ATP simulation package to determine the voltage disturbance caused by energising the transformers individually or as a group. This study also reviewed the long-term and short-term flicker created by the PV units on the network.

In addition, SPE also carried out 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 Earth Potential Rise (EPR) calculations and comprehensive touch and step voltage calculations for the site.