



Rail Industry Engineering Capabilities

GSE Systems, Inc. provides performance improvement solutions to a wide range of industries worldwide from offices in the UK, US, Sweden, China and India, by combining expertise in engineering, operations, visualization, training and simulation.

The Engineering division of GSE, based in the UK, supports clients in high hazard, high reliability environments within markets such as power generation and distribution, oil and gas, petrochemical, transport, pharmaceutical, metals and manufacturing. We offer engineering expertise in the areas of electrical, instrumentation, control and automation from full turn-key projects including design, procurement, installation and commissioning to specialist consultancy services such as power distribution system modelling and analysis, safety systems, asset integrity, sustainability and energy efficiency.

Services

- Traction Distribution design including 3 phase AC, Single Phase AC and DC systems.
- Non-Traction Distribution design including AC/DC, High and Low Voltage.
- Specialist consultancy including power system modelling, fault level analysis, protection co-ordination studies, arc flash analysis, load analysis, sustainability and energy efficiency.
- Plant design including LV distribution, points heating, pump control, external lighting, building services, signalling power.
- Project Management, Engineering Management, CRE and CEM responsibility.

Accreditation

In 2013, GSE Systems Ltd successfully achieved Approved Supplier Status for one of the UK's most recognised procurement and supply chain management services for the rail industry, Achilles Link-Up. GSE has approved supplier status on Achilles Utilities Vendor Database (UVDB) and ISO:9001 accreditation.

This accreditation acknowledges our commitment to exceptionally high standards in our engineering operations and will enable GSE Systems Ltd to extend the specialist engineering services we offer within numerous markets to clients throughout the rail sector.

GSE has successfully demonstrated alignment with the requirements for the Achilles Link-Up core audit, as well as fulfilling the requirements of specific product codes including Electrical Engineering Design and Consultancy (up to 11kV and 20kV to 99kV), Substation and Distribution Design, Control and Instrumentation Consultancy and Services and associated Project Management Services. The core audit measures our standards and procedures against best practice in a number of key areas including Quality, Health and Safety, Environmental, Professional, Insurance, Financial and Legal.



Case Study - Fault Level and Arc Flash Analysis

Pilot study on behalf of Network Rail for arc flash analysis of three typical scenarios within their power distribution infrastructure:

- 25kV Single Phase AC Traction distribution within Lineside Feeder Station connected to National Grid 275kV
- 33kV Three Phase AC Traction distribution within Lineside Substation from 132kV DNO supply for DC traction supplies
- 750V DC traction distribution within Lineside Substation connected via transformer rectifier arrangement to above

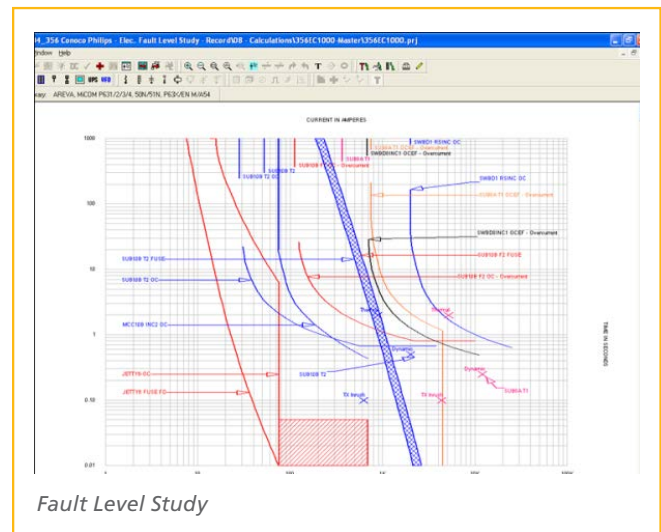
Service included modelling the distribution system for each scenario with power analysis software and delivery of specialist consultancy reports including arc incident energy levels, shock hazard boundaries, PPE and labelling requirements with associated recommendations.



Case Study - Derby Etches Park HV Renewals

Detailed design for new HV supply from an existing substation arrangement to a new modular substation including 11kV ring main unit and 11000/400V Transformer and associated cabling.

Work scope included Form EB and Construction design comprising electrical site layouts, substation general arrangement, HV/LV protection calculations, single line diagrams and equipment specification including transformer, switchgear and protection.



Fault Level Study



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