

Electrical and control systems engineering

The Lloyd's Register Group provides a range of analytical engineering services tailored primarily to special needs of the oil and gas industry. These services support clients' needs from the design stage, through operation and on to decommissioning of assets and include design appraisal, integrity assessment and general engineering consultancy.

OIL AND GAS
SERVICES

Electrical

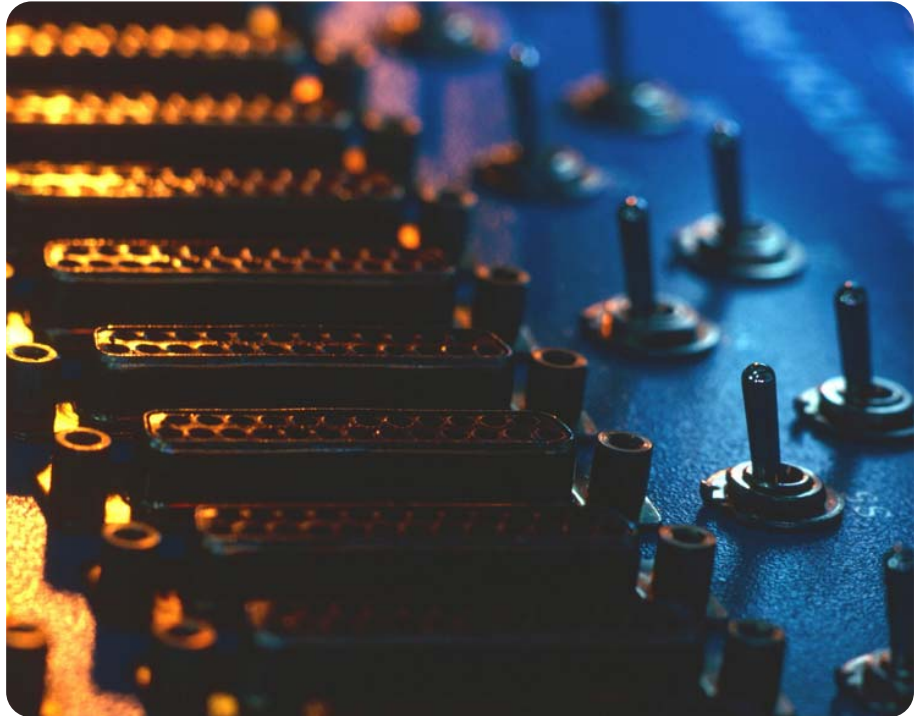
Our electrical engineering services include:

- power protection studies
- electric machines, generators and induction motors including computer modelling of these machines
- power electronics, control and drives
- electrical protection settings
- harmonic studies
- cable calculations and lighting calculations
- trace heating
- electrical equipment specification such as for transformer, LV switchboard and UPS systems
- UPS and battery calculations
- hazardous area classification and specifications for hazardous area equipment
- attendance at commissioning of the above to verify compliance with requirements.

Control

Our specialists address control, alarm and safety systems for:

- propulsion and positioning systems appraisal
- utilities and services appraisal
- process plant appraisal
- drilling equipment appraisal
- riser system appraisal
- ESD system evaluation
- fire and gas system evaluation
- appraisal philosophies for the F&G and ESD systems and evaluation of their cause and effect drawings
- evaluation of documentation demonstrating the integrity levels of hardware and software systems
- attendance at commissioning of the above to verify compliance with requirements.

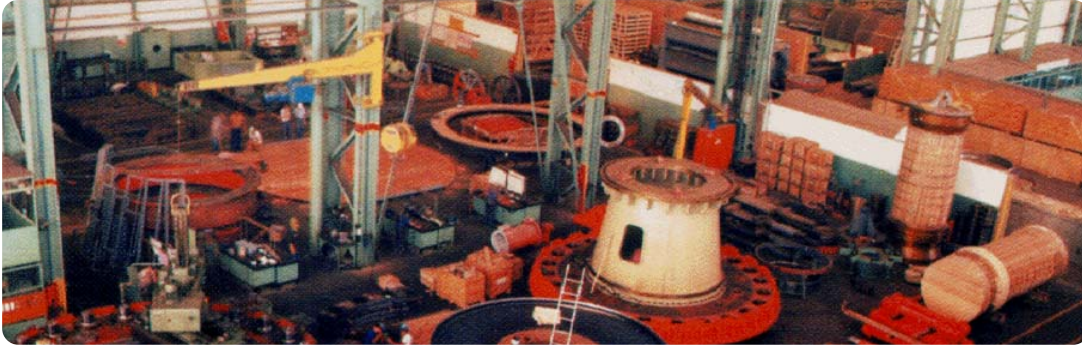


Scope of services

Services can be offered through a number of alternative routes. These include provision of services directly to the client, to the clients' engineering contractor, or internally to our verification and integrity services project teams.

Where required, there is a two-way exchange of skills with other specialist groups within the Lloyd's Register Group, such as corrosion engineering, structures and pipelines, and safety technology. This ensures we provide clients with a completely integrated approach, regardless of their initial point of contact.

Design appraisal services offer an independent assessment with particular attention on safety critical items in the context of regulatory and classification requirements.



Key services include

- design appraisal and certification of systems and plant
- advice on regulatory issues
- design analysis with formal reports
- liaison with regulatory bodies
- onshore and offshore inspections
- Independent Competent Person (ICP) services under the UK verification scheme
- other independent support services tailored to clients' requirements.

Software tools

The following software tools can be used by the department to analyse electrical systems:

- IPSA power system studies software
- DAPPER short circuit analysis program
- ISIM motor starting analysis program
- Saber Simulator, for modelling electrical power systems including generators, motors and drives



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**For further information
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LIFE MATTERS