

Power Systems Analysis/Design from TNEI

TNEI has one of the largest and most experienced systems studies teams in the world, with more than 35 specialist power systems engineers.

What we offer

We provide power systems analysis consultancy services in the areas of:

- Transmission and distribution network analysis
- Wind farm design, assessment and connection
- Distributed generation and active networks (smart grids)
- Petrochemical industry
- Industrial systems
- Thermal and renewable generation plant modelling
- Power quality and harmonics
- Grid code compliance
- HVDC, SVC, STATCOMS, (FACTS)
- Complex failure investigations.



TNEI has been involved in the development of transmission master plans for future generation and demand scenarios on projects such as:

- Grid studies
- North-south interconnector feasibility
- The revision of GB SQSS for three UK transmission network owners
- The north-west grid reinforcement for the economically efficient connection of large scale wind generation.

For further information about our power systems analysis and design services, please get in touch with one of our experts.

Power Systems Analysis/Design Services

The combination of expert software IPSA and our skilled power system analysis teams allows us to provide clients with bespoke analysis solutions efficiently and on a commercial consultancy basis.

Power system studies

TNEI step beyond the normal confines due to our inherent understanding power system equipment and detailed knowledge of the implementation of analysis algorithms and power system applications.

Power system studies available:

- Load flow
- Short circuit
- Harmonic compliance
- Energisation studies
- Voltage and transient stability
- Dynamic performance
- Insulation co-ordination
- Earthing.

We have the capability to undertake grid code compliance studies for generating units which are connected to distribution and transmission networks including:

- Reactive capability studies
- Power quality P28 (flicker, transformer energisation and voltage step change) and harmonic studies
- Fault ride through studies
- Voltage control and reactive power stability studies
- Frequency response studies
- Load rejection studies.

Engineering design and protection

TNEI assist clients to deliver competitive engineering documentation and solutions. Engineering design services include:

- Single Line Diagrams
- Specification of electrical equipment
- Electrical protection design and co-ordination.

We provide high quality protection coordination and setting studies which calculate the required settings for site commissioning engineers for the following types of protective devices:

- Unrestricted overcurrent and earth fault (non-directional)
- Loss of mains
- Bus-zone
- Transformer Differential and Restricted Earth Fault
- Cable Differential
- Neutral Voltage Displacement
- Distance protection
- Negative phase sequence
- Directional overcurrent and earth fault protection.

We provide modelling solutions in PSS/E, Powerfactory, PSFLF, IPSA, PSCAD, ETAP and ATP.

For further information about our power systems analysis and design services, please get in touch with one of our experts.