

# High Voltage (HV) systems engineering



It takes experience, deep knowledge and skill to manage HV systems safely and efficiently.

Working on high voltage systems is a specialist engineering task. Increasing skills shortages and ageing equipment is making it harder to manage them effectively. Good management of HV systems requires:

- Equipment that is correctly specified, installed and maintained
- Appropriate management systems
- Competent people and effective management of them

## What we offer

We have a deep understanding of operating needs, regulatory requirements, grid operator practices and the technology involved. We also have considerable experience in all aspects of HV electrical power systems management. These include:

- Initial specification
- Modifications and upgrades
- Ongoing maintenance and repair
- Ensuring long-term sustainability of systems
- Auditing and assessment of systems
- Management systems for HV systems
- Managing the interfaces for national grid operators
- Managing safe operations

Our engineers are experienced in both practical design and operations, and provide a range of services. We're also supported by ABB Power, an organisation which is a market leader in the provision of HV equipment and services. We cover systems up to 33kV and interfacing with 132kV.



Our services for new systems and modifications include:

- System front end engineering definition (FEED) studies which include cost estimations
- Full, detailed design and engineering of systems
- Short circuit and distribution load studies
- Design of HV / LV system protection schemes, including discrimination, co-ordination, trip curves and associated relay settings
- Project management, installation supervision and client engineer roles

Our services for existing systems include:

- Power and earthing system assessments covering safety, integrity, reliability, compliance, obsolescence and capacity issues
- Equipment life extension and migration assessments
- Technical consultancy for problem solving
- Training and competency development
- Developing systems for protection and functional testing of electrical equipment
- Development of permit to work and safety management procedures for electrical systems

### Benefits

- Complete safety
- Cost effective solution
- Production protected from equipment failure
- Upgraded equipment
- Long term sustainability

### Why ABB?

Our solutions are proven to deliver technical robustness, operational excellence and sustainable business improvement.

We are experienced, expert functional engineers who work as partners with our clients. This means that we transfer relevant skills to your workforce during the process, so you gain ongoing improvement.

- Pragmatic judgements and solution
- Vast operational experience
- We have extensive knowledge of all processes in high-voltage engineering and use the latest developments when appropriate
- We treat every situation as an individual case
- Our structured, methodical approach ensures best practice
- Numerous ABB staff have worked for many years in the industries we assist. Understanding a client's situation and requirements is an important part of our offer
- Proven track record