

Electrical safety is a legal obligation for work near or on an electrical power system. Electrical safety is also an intrinsic aspect of electrical design work: The design of an electrical system affects the safety of the personnel operating the system as well as the equipment itself.



Fig A: Person engulfed in an electrical arc flash during work with open switchgear doors

Unitech Power Systems provides services within electrical safety. Our clients benefit from our competence with regards to safe work procedures and safe electrical system design related to:

- Electrical protection
- Arc flash analysis
- Arc flash safety training, safety SLD, safety signs, switchboard markings
- Arc blast analysis
- Electrical shock (touch voltage calculation)
- Safety inspections
- Risk assessments of installations
- Risk assessments of work procedures according to FSE (Safety regulations related to the maintenance and operation of electrical installations)
- Risk reducing means
- Incident analysis

Arc flash analyses are increasingly being carried out to assess the risk levels in and around electrical equipment. Besides the legal obligation for risk management, arc flash analyses are necessary due to:

- Requirements to new electrical installations in accordance with IEC 61892
- Requirements imposed by standardization of electrical work safety practices for international companies

In Norway alone, there are 15-20 arc flash incidents resulting in injuries annually. The risk is especially high for industrial systems due to relatively high short circuit currents. Energy exposure depends mainly on the fault current level and duration, and not so much on the voltage level.

In order to identify the risks of an arc flash incident, the electrical arc flash energy must be known. Unitech Power Systems has considerable experience in the field of arc flash analysis (hazard level calculations according to IEEE 1584/NFPA 70E), training and switchboard markings of hazard levels for installations.

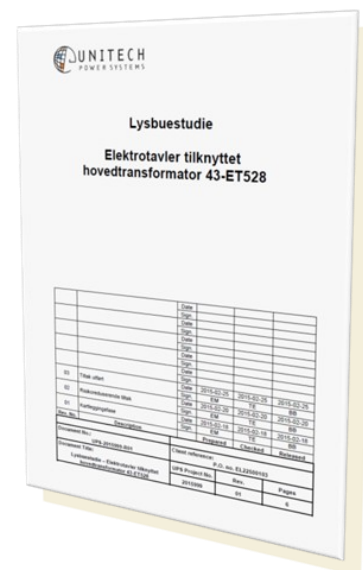


Fig B: Front page of arc flash analysis report.

Contact us for more information and to discuss how we can serve your needs.

Contact person:

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Focus areas

ARC FLASH	ARC BLAST	ELECTRICAL SHOCK	RISK ASSESSMENTS	INCIDENT ANALYSIS
<ul style="list-style-type: none"> • Analysis • Training • Safety products (SLD, labels) 	<ul style="list-style-type: none"> • Pressure build-up in rooms • Pressure build-up in enclosures 	<ul style="list-style-type: none"> • Touch voltage calculations • Step voltage calculations 	<ul style="list-style-type: none"> • Design • Arrangements • Work procedures 	<ul style="list-style-type: none"> • What-if analysis of near-misses • Root Cause Analyses

Selected, recent project references

Year: 2020
Client: Industrial business

Factory arc flash calculations

Using automated functionality with FEBDOK input, carried out arc flash calculations for 75 x 400 V and 230 V distributions in factory.

Year: 2021
Client: Energy company

Offshore battery banks DC arc flash calculations

Carried out arc flash calculations for 230 V and 48 V DC battery banks and UPS systems.

Year: 2019-2021
Client: Engineering contractor

Arc flash calculations

Updated arc flash calculations for an entire offshore, multi-platform installation to the latest standard IEEE 1584-2018.

Year: 2021
Client: Engineering contractor

Wind turbine arc flash assessment

Reviewed documentation, with respect to internal arc classification, of switchgear to be installed in wind turbine.

Year: 2021
Client: Utility

50 kV air insulated switchgear arc flash assessment

Carried out arc flash calculations and assessments for old type 50 kV air insulated switchgear installation.

Year: 2021
Client: Energy company

Arc flash calculations for onshore plant

Arc flash calculations for 22 kV, 690 V, and 400 V switchgear.