



Arc flash study

The challenge

Working with, on or in the vicinity of electrical installations entails hazards. These hazards depend on the nature of the work in and near the electrical engineering installations as well as on the technical condition or age of the installations.

To minimise or eliminate the hazards, design standards are applied to designing electrical engineering installations in the EU and the US, and personnel are trained on the basis of work regulations and work procedures.

Today's practice is that electrical engineering installations sometimes no longer meet the current design regulations and nothing comes more natural to people than forgetting procedures and rules. Both have the result that unintentionally unsafe situations can arise and accidents can occur.

One of the most frequently overlooked hazards, and yet the most serious hazard to which personnel can be exposed, is an arc flash as a result of a short circuit.

An arc flash consists of:

- A pressure wave
- A bang
- An intense (ultraviolet) flash
- Plasma
- Temperatures up to 1200 °C
- Toxic fumes
- Melted copper and insulation material (possibly oil).

The intensity of the arc flash depends on the available short-circuiting capacity in the network, the settings of the safety relays, the nature of the work and the type of distributor. Without personal protection equipment, an arc flash can result in severe injury and death.

Our solution

We can calculate the actual arc flash energy on site on the basis of the IEC 60909 (EU), IEEE 1584 (US) standards and NFPA 70E and can reduce this, if possible, by optimising relay settings.

We can subsequently provide electrical areas and panels with the correct safety labelling and determine the right PPE on the basis of IEC 61482, and with this, tailor the right work clothing to the relevant work.



Our specialist Electrical Power consultation group consists of electrical engineers, specialists, consultants and project managers with many years of experience in various areas. Together we are active in many different sectors of the industry; we work on electrical projects and provide our customers with high quality recommendations and operational support.

Our expertise follows the total supply chain of Electrical Power:

- Generation
- Transport
- Distribution.

We offer the following services in these fields:

- Basic and functional engineering
- Tenders
- Project management
- Operational support, error analysis
- Acceptance tests, commissioning support.

Based on our experience and knowledge in all Electrical Power fields, we can offer customers insights and services that can exceed their expectations.

The outcome

Using our knowledge and experience in Electrical Power, we can offer support for electrical systems in general and arc flash studies in particular, including:

- Modelling electrical systems
- Complex safety relay coordination studies
- Arc flash studies according to American and European standards
- Inventory and adaptations of relay settings in order to reduce arc flash energy
- Error analysis and emergency service
- Safety and compliance analysis
- Innovation
- On-site strategic visits and feasibility studies
- Cost estimates and due diligences
- Basic design of electrical systems and electrical system tenders
- Technical assistance during design and construction.

Further information

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