Protection against lightning

Lightning is a known risk to personnel, equipment and structures and can cause injury and major damage. An updated BS EN 62305 now identifies and quantifies these risks. Do you comply?

The risk to personnel and structures from lightning has been known for a long time. The first guidance for protection against lightning, CP 326, was published by British Standards (BS) in 1965 as a code of practice.

This was replaced in 1985 by BS 6651 Protection of structures against lightning. Since that time increased understanding and information has been gathered and European Standard EN 62305 has been published. This was then incorporated into British Standard BS EN 62305:2006.

All buildings, equipment and structures can be damaged by lightning strikes (directly or indirectly). The BS identifies that electrical and electronic equipment can be effected by lightning induced voltages.

To assist in identifying these risks ABB can provide a service that identifies the risks and recommend further actions. In order to limit injury and damage it is necessary to carry out a risk assessment.

In order to comply with ATEX and the Dangerous Substance and Explosive Atmosphere Regulations (DSEAR), companies handling substances capable of creating explosive atmospheres are also required to carry out a formal risk assessment.

What we offer
ABB can help you complete appropriate risk assessment to identify the correct level of lightning protection required.

Service includes:
- A site survey to identify the site characteristics. These would include:
  - Layout
  - Size of buildings
  - Type of structures
  - Materials of construction
  - Cable layouts
  - Type and duty of cables
- Determining the scope of risk assessment i.e. control rooms, sub stations etc.
- Carrying out risk assessments based on BS 60305 Part 2 to quantify the risks
- Documenting any risks identified along with their severity
- Identifying potential solutions to the risks to enable the client to comply with industry standards
Benifits
- Quantification of risks associated with lightning protection
- Confirmation that existing plants have adequate lightning protection
- Identification of level of protection required
- Plant is reviewed against current legislation
- Evaluation of the cost effectiveness of protection against cost of total loss without protection

Why ABB?
We can provide a cost effective; technically robust service for all your ignition source reviews, hazardous area zoning, lightning protection and ATEX / DSEAR compliance related requirements.

ABB have the experience of carrying out the surveys and assessments using the guidance within BS 62305 and in the practical application of lightning protection to industrial applications.

Our specialist engineers have considerable multi-sector experience and knowledge that can be focused to provide technically robust solutions.

Sources of damage.

Procedure for deciding the need of protection.

- Identify the structure to be protected
- Identify the types of loss relevant to the structure or the service to be protected

For each type of loss:
- Identify the tolerable risk $R_T$
- Identify and calculate all relevant risk components $R_X$

Calculate $R = \sum R_X$

If $R > R_T$

- Structure or service protected for this type of loss
- Install adequate protection suitable to reduce $R$