Electrostatic hazards

Reducing the risk of incidents caused by electrostatic charging.

Electrostatic charging can occur when solids or liquids move relative to the plant they are contained in or charged by induction. Electrostatic charging therefore occurs frequently in industrial process plant.

If charge is allowed to accumulate and discharge, an electrostatic hazard may arise. A static related incident can cause a serious fire or explosion. These incidents can cause significant loss of life and plant followed by legal action and associated bad publicity.

Any process plant that handles or processes flammable liquids, dusts, gases or vapours is at risk from electrostatic induced ignition.

What we offer
ABB Consulting engineers have extensive experience in the assessment and control of electrostatic hazards. ABB can undertake studies of a total plant or part of a plant to identify hazards, assess risk and develop practical and cost effective solutions. This can be carried out on new plant, existing plant or plant modifications.

The ABB approach for investigating whether an electrostatic ignition hazard might exist includes:

- Determination of flammable atmosphere potential
- Evaluation of electrostatic charge generation
- Determination of potential for charge accumulation and discharge
- Determination of all possible discharge scenarios and their igniting power
- Evaluation of ignition risk
- Implementation of a total solution

Within this framework ABB can offer expertise in:

- Measurement of minimum ignition energy of gases, vapours and dusts
- Fuel concentration and airflow measurement / modelling
- Evaluation of all discharge types and their igniting power
- Design and testing of electrostatic earthing and bonding systems to relevant standards such as BS5958
- Incident investigation where electrostatic ignition is suspected
- ATEX / DSEAR safety management compliance

Benefits

- Improved safety, health and environmental compliance
- Lower safety risks through improved control of a very common ignition source
- Compliance with ATEX/DSEAR risk assessment requirements

Why ABB?
ABB Consulting have a long track record of identifying and controlling electrostatic hazards in a wide range of industrial situations including:

- FIBC (Flexible Intermediate Bulk Containers) handling
- Mills and grinders
- Dust collectors
- Centrifuges
- Mixers
- Batch reactors
- Dryers
- Wide range of gas and vapour handling processes
Our team of experienced specialists with operational heritage will use their experience to offer pragmatic judgements and cost effective solutions to electrostatic hazard issues.

ABB can offer the full solution to ensure electrostatic hazards are managed; from assessment of the issues to the implementation of any identified improvements.

To complement the expertise of our consultants, ABB uses the latest software tools and techniques including:

- PHAST Professional for flammable atmosphere and consequence modelling
- Computational fluid dynamics for complex fuel concentration modelling
- ‘Dust expert’

For further information please contact:

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