Subject: Legal aspects of electrical safety

In urban India, electrical systems are becoming complex for factories, commercial buildings and high rise residential buildings. Electrical safety and fire hazard have become most important in these cases. We as electrical engineering professionals have to ensure this safety. Government of India has recently amended provisions related to electrical safety rules to affect decentralized execution.

- The prevailing act regarding practices in electrical engineering is “Electricity Act 2003”.
- As per section 73 of this act an independent government body named “Central Electricity Authority” – CEA makes regulations to convert this act into guidelines for practice.
- Following are two applicable notifications as regards electrical safety issued by CEA.
  a) CEA regulations “Measures relating to safety and electric supply” dated 20th Sept 2010
  b) CEA amendment regulations “Measures relating to safety and electric supply” dated 13th April 2015.

Following are major provisions made by CEA to decentralize inspection of electrical establishments. The focus here is on self certification and restricting visits of inspectors for initial commissioning and accident scrutiny only.

1) Electrical safety officer: As per clause 5 of these regulations,
   a) Every electricity generating, Transmitting and distributing company is expected to designate an “Electrical safety officer” at various levels in the organization. Qualifications of such an officer including the technical syllabus and training requirements are given in the notification. Such safety officers are expected to inspect their own setups once in a year and maintain record in specified form given in these regulations. This record along with appropriate actions taken against non compliance will be treated as Self declaration of electrical safety.
   b) Any establishment using electric power and having connected load more than 250KW is also required to designate an “Electrical safety officer” as mentioned above, who will do same duties.
   c) Routine visit of electrical inspector is now required once in five years or during new commissioning or during restart after shutdown of more than six months. Inspector is also required to visit for investigation of any accident.

2) Chartered electrical safety Engineer: As per clause 5A of these regulations. The notification allows all establishments to take help of Chartered electrical safety engineers to conduct periodic internal audits relating to electrical safety and act on the recommendations given by them post audit to ensure electrical safety. The safety officer is required to maintain record of such audits in prescribed format and actions taken on audit report.

Let us understand who is chartered engineer?
An electrical engineer who is member of Institution of Engineers (India) IEI – with exceptional experience gets a certificate of Chartered Engineer from IEI. IEI is an organization working since 1935 to promote engineering in all engineering disciplines. Before independence this was formed with a formal permission from the then British royal system of governance. IEI has it's branches or chapters in all major cities in India. Electrical engineering graduates with sufficient experience can apply to IEI for formal membership with documentary evidence of education and experience. The application requires recommendation from two local members of IEI. IEI offers membership after scrutiny at Kolkata.

We can compare IEI membership with registration of a qualified doctor with Indian medical council or working of chartered accountants in the field of income tax, sales tax etc. Government of Maharashtra is working on a notification taking these CEA regulations as guidelines, and may ask Electrical chartered engineers to get registered with them and then offer their services as Chartered electrical safety Engineer.

The self certification forms given in these notifications have touched every aspect of electrical safety and everybody should go through them seriously and follow the provisions of these notifications to minimize hazards from electricity.

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