

We need an urgent national plan on electrical safety

More funding and coordinated action are needed

Sreekumar Nhalur, Prayas (Energy Group)

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There are reasons to be proud of the growth of the Indian power sector since independence. There has been significant growth in infrastructure, nearly all households have an electricity connection, amid promises of providing 24x7 electrical supply and achieving net zero emissions by 2070. While these are commendable, there are also many problems that the sector faces, electrical accidents being a tragic one.

Understanding the problems and failures is essential for growth and success. And it is unfortunate that the increasing rate of electrical accidents is a problem that has not received sufficient attention of those who plan, regulate and operate the electricity sector. National or State policies or programmes do not provide targets or specific resource allocation for safety. In some cases where resource is allocated, it is under-utilised or a small portion is spent on staff for safety kits or training.

Rising fatalities

As per the data from the National Crime Records Bureau, the number of fatalities and rate of deaths (per lakh population) due to electric shocks and fires has been steadily increasing over the years. From 2,957 deaths and 0.36 deaths per lakh population in 1990, it has increased to 15,258 deaths and 1.13 deaths per lakh population in 2020. Data from the Central Electricity Authority (CEA) conveys the same story in terms of increasing fatal accidents. It is worth mentioning that in many developed countries, the number of deaths has been reducing over the years and the deaths per lakh population is of the order of 0.03 or lower.

Accidents, as the saying goes, do not just happen, but are caused. From the analysis of available data, it appears that over 90% of the people who die due to electrical accidents are the general public. Hence, any attempt to reduce such accidents must include the safety of general public as a top priority.

Geographically, most of the electrical accidents appear to be taking place in rural areas, but considering the rapid urbanisation, poor urban localities also need attention. In electrical terms, most accidents occur in the distribution system and at non-industrial consumer locations. Most fatalities occur at distribution network (specifically 11 kV and Low-Tension systems) and Low-Tension consumer locations, and therefore need higher attention.

Electrocution due to accidental contact with live conductors is the immediate cause for accidents in a majority of cases. The reason could be snapping or sagging of conductors, or exposed switch boards at low heights. The second major reason is fire due to electrical faults, which accounts for around 12% of the accidents. Poor design, construction, inadequate maintenance, inadequate protection systems and lack of safety awareness are some of the root causes.

Safety checks and balance

There are safety regulations prepared by the CEA, which all electricity utilities are expected to follow. But there is no mechanism to ensure that utilities are following them. For example, distribution companies are expected to have safety officers and conduct periodic safety audits. These are not done because revenue collection and fault repairs are higher priorities for the companies. Electrical inspectors in States are expected to approve connections, provide licences to electricians and conduct enquiries on accidents. But they are heavily under-staffed. As for safety professionals, their focus is on industrial safety, and not on safety aspects of the rural public. Many well-meaning grass- root organisations focus on ensuring ex gratia for accident victims, not on accident prevention.

Electricity safety is a public interest challenge, which can be met only through coordinated action involving all stakeholders. The implementation of the current safety regulatory regime can be significantly tightened through better data collection, introducing safety aspects in national programmes, strengthening safety institutions, developing safety metric for distribution companies, involving public and professionals in safety initiatives and utilising technological innovations.

The need of the hour is a national programme to reduce electrical accidents in the distribution sector, with clear scope of work, sufficient resource allocation and robust monitoring and verification mechanism. States could identify districts which have reported high accidents in the past few years and chalk out a programme to reduce accidents. Only such measures can ensure that electricity supply is not only universal, affordable and good quality, but also safe.

Sreekumar Nhalur, Prayas (Energy Group), Pune

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