<u>INDIA</u>

Lightning, An Extreme Natural Event causing Loss of Life and Property

Ravindra Arora

Professor (Retd.), Department of Electrical Engineering, Indian Institute of Technology, Kanpur

E-mail: rarora@iitk.ac.in, ravindra.arora@gmail.com

Apart from being a captivating phenomenon in nature, the fury and the uncontrolled fierceness caused by lightning could be highly dangerous to life and property and other assets on this earth. As per estimation made by 'The Federal Centres for Disease Control and Prevention', nearly one hundred people are killed in United States by Lightning each year. Unfortunately, this figure is much higher in India. According to 'National Crime Record Burro of India', in the years 2013 and 2014, 2833 and 2582 people got killed respectively due to lightning in India. Asreported by 'Economic and Political Weekly' it is estimated that out of total number of deaths between 1967 and 2012 due to extreme natural events like; floods, landslides, earthquakes, heat and cold waves and lightning in India 39 % people died due to lightning alone, maximum number of victims of all natural calamities. Hence it can be concluded that the most severe impact of extreme natural calamity is caused by lightning in India killing maximum number of people.

Besides the loss of human life, the lightning also causes destruction of property due to blasts and fire. A very large number of unaccounted cattle, both pets and wild are also killed. Although not so frequent in India, lightning also causes fire in the jungles, which becomes uncontrollable at times. An effort to reduce the damage caused by lightning is therefore urgently required, especially to protect the life of the innocents.

It is interesting to learn that the nature of damage caused by lightning differs from country to country. In United States the damage is more to the property. According to 'National Fire Protection Association' (NFPA) the local U.S. fire departments responded to an average of 22,600 fires started by lightning every year from 2007 to 2011 causing an average of only nine civilian deaths and loss/damage of direct property worth \$ 451 million per year. Contrary to the estimation of on an average 100 people killed by lightning every year in

U.S., 1755 people are killed every year in India. One has to go into the depth of the problem why such a huge loss of life is caused in the third world countries, whereas more of property damage takes place in advance country like United States of America due to lightning?

The situation demands a detailed analysis of the problem in view of the local conditions, educational level and the mind-set of the people, awareness and the technological development to be able to suggest large scale disaster management programmes/policies for the third world countries. Most simple and affordable methods need to be adopted at large scale in our countries to mitigate and minimize the effects of the natural calamity caused by lightning. This paper makes a thorough analysis and suggests most simple and affordable methods to reach the masses within the existing infrastructure for the third world for mitigation.