

COLOMBO DECLARATION ON LIGHTNING PROTECTION AND SAFETY

We, the participants of the International Roundtable on Lightning Protection held from 22nd to 25th May 2007 at Colombo, Sri Lanka, jointly organized by the National Science & Technology Commission of Sri Lanka (NASTEC) and the Centre for Science and Technology of the Non-Aligned and Other Developing Countries (NAM S&T Centre),

Realizing the gravity of the hazards of lightning that lead to deaths, injuries and economic losses and the need for scientific and technological advancement, proper engineering and technical practices, dissemination of knowledge and public awareness with respect to lightning protection,

Recommend the following to be adopted by the authorities in all concerned countries and practiced with immediate effect.

Recommendations

A. Promotion of Safety Awareness among the Public

- Deaths and injuries due to lightning shall be minimized and public safety shall be improved by:
 - I. Organizing educational and awareness programs for different target groups by the government and non-government organizations.
 - II. Including basic concepts of lightning and lightning protection/safety in the school curriculum.
 - III. Publishing information on lightning, its hazards and precautions.
 - IV. Displaying proper lightning safety instructions at vulnerable locations such as playgrounds, beaches, etc.

B. Enhancing Technical Knowledge and Skills among Professionals dealing with Lightning Protection

- Theoretical, technical and practical knowledge as well as skills necessary for implementing lightning protection measures of professionals shall be improved by:
 - I. Organizing technical workshops, seminars, training programs.
 - II. Arranging national/international training events with the support of the government and non-governmental organizations.
 - III. Facilitating professionals to get access to the up-to-date scientific and technical information through electronic media and other means.

C. Protection of Buildings and Structures for the Safety of Occupants and Property

- Buildings shall be protected against lightning through:
 - I. Education and encouragement to the public by adopting scientifically validated lightning protection measures.
 - II. Development of national standards or adoption of international standards for lightning protection.
 - III. Constitution of an authorized body to make recommendations on protection systems and taking necessary steps for minimizing lightning damages.

D. Mitigation of Adverse Effects on Equipment and Systems

- Damage to electrical, electronic & communication equipment, computer networks and other related systems shall be minimized by:
 - I. Establishing awareness programs for administrative and technical personnel in all sectors of the economy about appropriate lightning surge protection solutions.
 - II. Sensitizing manufacturers, importers, designers and installers of protection systems on the need to use the most appropriate lightning surge protection equipment.
 - III. Developing country standards or adopting international standards for lightning surge protection solutions for different sectors (viz. power, communication, computer and data networks, PABX systems, electronic process control systems etc.).
 - IV. Monitoring and certifying the quality of protection devices manufactured in the country and/or imported, as well as certifying the installation of these devices by the authorized body.

E. Protection of Towers and Safety Concerns in Adjacent Areas

- Protection of tower related equipment and safety of the adjacent areas shall be ensured by:
 - I. Training the professionals to identify protective measures for towers and related equipment to ensure appropriate protection measures.
 - II. Investigating and taking safety measures for possible increase of lightning hazards in areas adjacent to the tall structures.

- III. Making it mandatory to have effective earthing systems for towers.
- IV. Making it mandatory for the tower owners to take appropriate measures to protect the adjacent areas.

F. Protection of Power Systems and Communication Networks

- Damage to power systems shall be minimized by:
 - I. Investigating the conditions of the existing lightning protection scheme in the power systems.
 - II. Including appropriate earthing practices and accepted standards in the curricula of engineering institutions.
 - III. Mandating engineers to maintain regular inspection records.
- Damage to communication networks shall be minimized by:
 - I. Ensuring compliance with ITU Standards.
 - II. Encouraging research in the quality of high frequency earthing systems and communication equipment protection technologies in order to make recommendations to the concerned institutions/service providers to rectify shortcomings.

G. Protection of High Risk Installations

- Damage to storage of hazardous materials such as inflammable chemicals, explosives, petroleum and ammunition dumps and other high risk installations shall be minimized by:
 - I. Organizing awareness programs about lightning threats to storage facilities and institutions that transport or use hazardous materials.
 - II. Making highest level of structural protection mandatory in such cases.
 - III. Inspecting the lightning protection systems in such cases on regular basis.
 - IV. Incorporating lightning protection of high-risk installations in national standards.

H. Development of National Standards on Lightning Protection and Safety

- Adherence to proper lightning safety and protection practices in the country shall be promoted by:

- I. Developing, improving and upgrading national standards/codes for lightning protection systems for buildings/equipment and their installations.
- II. Conducting awareness programs to popularize the standards/codes among the professionals and public.
- III. Making standards mandatory to concerned parties.

I. Testing and Research Facilities and Data Collection

- Services provided to manufacturers and importers of lightning protection equipment to test their products against national standards shall be enhanced by:
 - I. Establishing new laboratories and supporting research institutes to upgrade the existing ones.
 - II. Providing training in modern techniques and methodologies to test facility providers.
 - III. Providing required facilities to researchers on lightning and lightning protection to commence / continue research on lightning.
 - IV. Networking the country with a lightning detection system so as to enable lightning forecast and data collection.
 - V. Establishing research groups and institutions to develop databases on lightning accidents and other lightning related occurrences.

J. Local Manufacture of Protective Devices

- Local entrepreneurs, inventors and researchers shall be encouraged to produce lightning protection equipment and technologies suitable to local conditions and national standards through:
 - I. Financial grants, working facilities, market information, foreign training, etc.
 - II. Collaborative programs and forums for exchange of information and sharing their views and work experience.

K. Protection of National Heritage Sites

- Lightning damage free environment shall be ensured for national heritage sites by:
 - I. Investigating the present status of archeologically important sites.

II. Designing and implementing effective and durable protection systems.

III. Regular inspection of the protection systems.

WE FURTHER RECOMMEND the establishment of an International Institute for Lightning Protection and Safety in Sri Lanka / Islamic Republic of Pakistan to address various issues with respect to lightning safety and protection, especially to create awareness among the public about the lightning hazards and mitigation measures, and to promote collaboration between the lightning institutions in the world.

Signed this day, 24th of May 2007 at Colombo, Sri Lanka.