KEYNOTE SPEECH
BY DATUK IR AHMAD FAUZI HASAN, CEO OF ENERGY COMMISSION
AT THE IEM SYMPOSIUM ON PROTECTION AGAINST LIGHTNING
AT
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Dato Ir. Lim Chow Hock, President of IEM,

Ir. Lam Sing Yew, Chairman of Electrical Engineering Technical Committee,

Committee Members of IEM,

Speakers, Participants, Ladies and Gentlemen,

Assalammualaikum and good morning to all.

- First of all please allow me to thank IEM for inviting me to deliver this opening address at this **IEM SYMPOSIUM ON PROTECTION AGAINST LIGHTNING.**Thissymposium is indeed apt and timely towards ensuring safety against lightning hazards in our country, as Malaysia records one of the highest lightning ground flash densities in the world. In this lightning-prone environment of ours, lightning protection shouldtherefore beone of our priorities in carrying out our daily economic activities.

- I hope that through this symposium, professionals who provide services as consultants, contractors, developers, competent engineers and supervisors, as well as building owners,willbe able to share, update and enhance knowledge in safe and good practices for the installation and maintenance of lightning protectionsystemsin our buildings.

- This is especially pertinent because in the past there have been many incidents whereby lightning protection systems were in place on buildings, yet lightning strikes have managed to damage the building structures. These occurred at premises such as the Putrajaya Hospital, as well several schools and commercial buildings, which have caused anxiety among the public on the effectiveness of such lightning protection systems.

- In fact, the issue of lightning protection system went to as high as our Cabinet, and in 2010 the Ministry of Science Technology and Innovation (MOSTI) met with relevant agencies, including the Energy Commission, to look into waysto resolve thisissue.

- It has been the normal practice in our country that the installation of lightning protection systems on buildings are mainly based on the expertise of M&E consultants with respect to their design and installation requirements if there are no specifications prescribed by the implementing agencies. In fact, until recently, there has been no specific directive issued by relevant authorities on lightning protection system design or installation in this country.

- In this regard, the Energy Commission as a regulatory body of the energy industry, recently initiated measures to address this issue in line with Section 47 of Electricity Supply Act 1990, which states, “Any department of the Federal Government or any State Government or any other consumer taking or using electricity from any installation shall, if the Commission so requires, provide such means for obviating any risk of damage to such installation by atmospheric electricity as may be directed by the Commission or as may be prescribed by regulations under this Act”.

- With this provision in the Act, the Energy Commission has been entrusted with looking into means of reducing the risks associated with the lightning phenomenon. One of the regulatory means towards this objective is by developing the necessary technical standards on lightning protection. Let me now very briefly elaborate on the development of standards with respect to protection against lightning in this country.

- The first Malaysian lightning protection standard, the MS 939, which was based on the British Standard, BS 6651, was developed in 1984. This standard was used for quite some time, until the year 2001, when the Ministry of Science, Technology and Innovation (MOSTI) endorsed the IEC 61024 lightning protection standard as the new Malaysian Standard, MS IEC 61024.

- In the meantime, the use of some means of ionisation to induce the formation of streamers to intercept lightning strikes, namely the Early Streamer Emission or ESE lightning protection system, became popular around the world and also in our country. However, in the year 2005, the International Conference on Lightning Protection (ICLP), a scientific body that specialises in lightning and lightning protection, issued a global warning about the dangers of using the ESE system and other non-conventional lightning protection technologies.

- In the same year, The Association of Consulting Engineers Malaysia (ACEM) issued an advisory to all its members to avoid using the ESE and other non-conventional lightning rods in the interest of public safety.

- Subsequently, in the year 2006, the International Electrotechnical Commission (IEC) published the new lightning protection standard, IEC 62305, and instructed all members to revoke any lightning protection standards that did not comply with the new standard within three years (i.e. 2009). In 2007, MOSTI endorsed the IEC 62305 as the new Malaysian Standard, MS IEC 62305.

- On 2 August 2011, the Energy Commission issued a circular determining the method of having lightning protection system in buildings. This circular, which came into effect on 1 September 2011, essentially states that the lightning protection systems in buildings should meet the requirements of the MS IEC 62305.

- In order to ensure that the standards are suitable to be implemented in our country, before issuing the circular, the Energy Commission has consulted relevant agencies and institutions such as JKR, KPKT, SIRIM, UPM's Centre of Excellent on Lightning Protection (CELP) and MOSTI to get feedback on the suitability of and need for mandating the standards.

- I have been made to understand that the four parts of MS IEC 62305, provide comprehensive guidance on designing and installing lightning protection systems in many types of structures, from simple domestic installations to large building complexes. The standards cover the aspects of protecting the buildings and equipment from lightning hazards due to both direct and indirect strikes.

- I was also made to understand that in the MS IEC 62305, the need and the type of protection against lightning is based on comprehensive risk management calculations based on four types of risks. This approach should be welcomed, as the effort put in into having the necessary lightning protection system will then commensurate with the risks and possible damages involved.

- However, the comprehensiveness of MS IEC 62305 provisions make the document not so easily grasped by engineers who are not specialised in the subject. As we have seen in many countries including Malaysia, difficulty in interpreting the standards may prevent engineers from satisfactorily complying with the standards resulting in them opting for non-standardised systems offered by vendors. This practice will undoubtedly expose the public to a higher risk of lightning strikes in our buildings.

- To help overcome this difficulty in interpreting the standards, the Energy Commission has taken the initiative to develop a guidebook titled the “Guide on Lightning Protection System for Buildings” which has been developed to bridge the knowledge gap among general electrical engineers on MS IEC 62305. This guide book is not a replacement of the existing standards but is a supplement which explains the different features of lightning protection systems and provides readers with clear and concise explanations on the requirements of MS IEC 62305. In fact, one of the main objectives of publishing this guidebook is also to equip the general public with a basic understanding of the appropriate standards for the lightning protection system on their buildings.

- It is our hope that the relevant government agencies, consultants, contractors, engineers as well as building owners in this country could comply with the requirements of the MS IEC 62305 – Standards on *Lightning Protection System,* which has been made mandatory since 1 September 2011. We are optimistic that the standards as well as the guidebook could help reduce significantly the number of lightning strike incidents involving buildings in our country.

- With that, once again, I would like to thank the organisers for giving the Energy Commission the opportunity to disseminate latest developments and share our expectations on this important aspect of protection against lightning. I wish you all a fruitful and meaningful discussion in today's symposium.

  Thank you and wassalam.