



Talk on Overview of Changes/Updates to Regulatory Requirements and Rules on Electrical Installations of Buildings

by Dr Siow Chun Lim

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On 3rd March, the IEM Electrical Engineering Technical Division (EETD) has successfully organised the first back-to-back Saturday talk of the year 2018. The second talk was on “Overview of Changes/Updates to Regulatory Requirements and Rules on Electrical Installations of Buildings” at Wisma IEM. The speaker was Ir. Lim Kim Ten and the talk was attended by more than 30 participants.

When it comes to rules and regulations pertaining to electrical installations, one should be in total compliance with Electricity Acts, Ordinances, Regulations and Rules depending on whether you are in Sarawak or other parts of Malaysia. The Electricity Supply Act 1990 is the culmination of Electricity Act 1949 and Electrical Inspectorate Act 1983. However, engineers were reminded of the recent amendment to the said Act in 2015, henceforth known as Electricity Supply (Amendment) Act 2015 (Act A1501) or ESA 2015. Ir. KT Lim highlighted several major amendments throughout his presentation. One of it is the redefinition of 66kV and above as MV level. Another point stressed is the inclusion of power quality in the ESA 2015. The ESA 2015 has also replaced the Arbitration Act 1952. Ir. KT Lim further emphasised the increase in fine for conviction on offence committed to the act as well as increase in imprisonment period.

Next, the speaker touched on guideline for water heater installation. As per Regulation 36, provision of residual current device with rating of not more than 10mA is required for protection against earth leakage current for installation in a place of public entertainment and place where the floor is likely to be wet. The participants were also informed of the major change in Regulation 37 with regards to dimensioning to facilitate ample space for safe operation or maintenance in switchboard. For non-domestic electrical installation, there is already a minimum safety and working clearance distance recommended by Suruhanjaya Tenaga. Regulation 67 on the other hand, specifies the number of visits for inspection purpose by competent person according to voltage level of installation. Any non-domestic installation needs to be checked and tested by a competent person at least once every five years. Ir. KT Lim then presented on the Safety Management Plan and Programme which is encapsulated in ST’s Guideline on Electrical Safety Management Plan and Programme.

Provision of TN-S system for earthing of load above 1MVA shall be provided as well. Similarly, TT earthing system is recommended for load below 1MVA. The lightning earthing system shall be separated and bonded to the installation earthing system and shall not exceed 10Ω. Supplementary equipotential bonding conductor shall be used to connect all metallic frames of electrical equipment and non-electrical equipment in a room containing a bath or shower to the supplementary equipotential bonding terminal.

As aforementioned, installation shall also have provisions for protection against voltage disturbance, electromagnetic disturbance and supply disturbance in addition to electric shock, thermal effects and overcurrent and earth fault currents. Mitigations recommended includes standby power supplies, uninterruptible power supplies, surge suppressors, power conditioners, voltage regulators and isolation transformers. Ir. KT Lim then touched on the sizing of neutral conductor to compensate for the harmonic effect. He concluded his talk by urging the participants to always hold the electricity act and regulation as the supreme law in their daily professional practices.

Figures below depict the participation rate as well as the presentation of a token of appreciation to the speaker.



The participants



Ir. Lim Kim Ten delivering his talk



EETD Committee presenting a token of appreciation to the speaker