

**Minutes of the 47th Meeting of
the Electrical Safety Advisory Committee (ESAC)**

Date : 25 September 2023
Time : 2:30 p.m.
Venue : Rooms A & B, Interactive Learning Centre, 4/F, EMSD Headquarters, 3 Kai Shing Street, Kowloon, Hong Kong

Present

Ir Professor CHAN Kwok-cheung, Thomas (Chairman)
Mr PANG Yiu-hung
Miss LEUNG Wai-chun, Karmen
Ir AU Tat-kay, Walter
Ir CHAN Chi-ming, Antonio
Miss CHEUNG Hai-man, Flora
Mr CHEUNG Wing-ho
Mr CHOI Kan-man
Dr LAM King-hang
Ms LEE Wing-han, Susanna
Mr LING Ming-lun
Mr NG Lui-kai, Brian
Professor PUN Kong-pang
Mr TSE Chun-man
Ir YAN Ka-wing
Ms YIP Kam-yee, Candy
Ms YU Hoi-kuen
Ms YEE Sau-wah (Secretary)

In attendance

Mr POON Kwok-ying, Raymond Deputy Director / Regulatory Services, EMSD
Mr CHU Kei-ming, Barry Assistant Director / Electricity and Energy Efficiency, EMSD
Ms CHENG Pui-man Chief Electrical and Mechanical Engineer / Electricity Legislation, EMSD
Mr CHAN Chi-kin Senior Electrical and Mechanical Engineer / Consumer Installations 1, EMSD
Mr CHING Kwong-fai Senior Electrical and Mechanical Engineer / Consumer Installations 2, EMSD
Mr SZE Chung-tak Acting Senior Electrical and Mechanical Engineer / Electrical Products, EMSD
Mr WONG Tsz-chung Senior Electrical and Mechanical Engineer / Nuclear and Utility Safety, EMSD
Mr NG Chi-shing, Senna Senior Engineer / Energy Efficiency A9, EMSD

Mr IP Kam-wing, Joeman Senior Engineer / Gas Standards B4, EMSD
Mr IP Sung-tai General Manager (Transmission and Distribution), The
Hongkong Electric Company, Limited
(In attendance for Agenda Item 5)

Absent with Apologies

Ms LAU Wing-yan, Rikki
Professor OR Siu-wing

Action

Agenda Item 1: Opening Remarks

1. The Chairman welcomed members to the 47th meeting of the Electrical Safety Advisory Committee (ESAC) and introduced the officers of the Electrical and Mechanical Services Department (EMSD) in attendance at the meeting.
2. The Chairman briefed members on the meeting arrangement and specially reminded them to observe the guidelines on the one-tier reporting system related to the declaration of interests by members of advisory boards and committees. Under the system, if a member became aware that a conflict of interests might arise from his/her participation in the discussion of an agenda item, he/she should disclose full details of the interests involved accordingly. The interests declared would be recorded in the minutes of the meeting.

Agenda Item 2: Minutes of the 46th Meeting Held on 24 March 2023

3. The Secretariat had sent by email the minutes of the 46th meeting to members for perusal before this meeting. Members did not raise any amendment to the minutes of the 46th meeting or matters for follow-up. The Chairman declared the minutes of the 46th meeting confirmed. The Secretariat would arrange to upload the minutes of the meeting to the EMSD website for public reference.

Agenda Item 3: Overview of Electrical Safety for the First 6 Months of 2023 (ESAC Paper 03/2023)

4. The EMSD briefed members on the above paper, which presented an overview of the enforcement and promotional work of the EMSD on electrical safety for the first 6 months of 2023 and the way forward for the second half of 2023.
5. A member wished to know the conviction rate of prosecution cases instigated by the EMSD.

6. The EMSD responded that the conviction rate of past prosecution cases was very high, and would provide the relevant figures after the meeting.
[Post-meeting note: The conviction rate of prosecution cases for the past three years (i.e. from 26 September 2020 to 25 September 2023) was 99.66%.]
7. A member recommended that apart from publicising and promoting its work on Facebook, Instagram and YouTube, the EMSD could also consider disseminating electrical safety messages on WeChat, so that its publicity information could reach a wider public.
8. The EMSD thanked the member for the recommendation. The EMSD had been conducting publicity and promotional work through online platforms such as Facebook and Instagram, and was constantly exploring more platforms for promoting electrical safety messages.
9. A member noted that the EMSD had strengthened co-operation with the General Administration of Customs of the People's Republic of China (GACC), requiring online shopping platforms in the Mainland to intercept electrical products that were suspected to be non-compliant with the statutory requirements in Hong Kong. The member considered it an excellent measure that would benefit the trade and the public, and in this regard, the member would like to know more about the relevant arrangements.
10. The EMSD thanked the member for the view and enquiry. The EMSD had been liaising closely with the GACC through the Cooperation Arrangement on Electrical and Mechanical Products Safety and Energy Efficiency, and inspecting physical stores and online platforms at regular intervals. When electrical products not compliant with the statutory requirements in Hong Kong were found supplying to Hong Kong on online platforms in the Mainland, the EMSD would notify the GACC of the case through the existing notification mechanism. The GACC would then investigate into the case and take follow-up actions based on the case details, including requiring the e-commerce platforms concerned to take proactive measures such as intercepting orders and blocking product pages, with a view to achieving interception at source. The EMSD would continue to exchange views with the GACC on the notification mechanism mentioned above and explore the possibility of further cooperation.

Agenda Item 4: Extension of Coverage of the Mandatory Energy Efficiency Labelling Scheme to Include LED Lamps, Gas Cookers and Gas Instantaneous Water Heaters (ESAC Paper 04/2023)

11. The EMSD briefed members on the above paper, which provided background information and summarised the development history and implementation of the Mandatory Energy Efficiency Labelling Scheme (MEELS), as well as the process and considerations for implementing the fourth phase of the MEELS.
12. A member enquired about the coverage of LED lamps in the fourth phase of the MEELS, citing whether LED light bulbs, LED lamps powered or not powered by transformers, other decorative lamps for household use, LED light strips with drivers, etc. were included.
13. The EMSD responded that the coverage of LED lamps in the fourth phase of the MEELS mainly involved light bulbs, and depended on whether the lamp caps of the products were included in the relevant testing standards of the International Electrotechnical Commission (IEC). As for other LED lighting products mentioned, the IEC had not formulated the relevant energy efficiency testing standards for the time being. The EMSD would pay close attention to the development of the relevant testing standards. The EMSD supplemented that LED lamps with a rated voltage of 220 volts were regulated by the Electrical Products (Safety) Regulation.

The EMSD added that LED lamps were more energy-saving and durable than compact fluorescent lamps (CFLs), and the prices had also dropped considerably. It was indeed a smart choice for the public to purchase LED lamps. By implementing the MEELS, the EMSD aimed to inform the public of the energy efficiency performance of the products concerned, so that they could make wise purchasing decisions. The MEELS also helped conserve energy and reduce greenhouse gas emissions. Meanwhile, the EMSD hoped that members of the trade, including those engaged in home renovation, would recommend the use of LED lamps to their customers to speed up the progress of energy conservation and carbon reduction together.

The EMSD remarked that the effectiveness of the MEELS was internationally recognised. At the time of meeting, more than 40 economies had implemented similar schemes. The EMSD had been reviewing the MEELS on a regular basis since its implementation, and had continued to expand its coverage and upgrade the grading standards to ensure that the MEELS could keep abreast of the latest technological development. The EMSD was making continuous efforts to achieve the carbon neutrality target with a view to completing the relevant work as soon as possible. In addition, the implementation of the MEELS was supported by the public, the trade and the Legislative Council, for which the EMSD was grateful.

14. A member commended that the MEELS was a successful policy and pointed out that as mentioned in the paper, the total energy consumption covered by the MEELS had increased to about 80%. The member asked whether it included the energy consumption in the transportation sector. In addition, as both liquefied petroleum gas (LPG) and town gas were fuel gases, the member asked why different energy labels were required for the relevant appliances.
15. The EMSD thanked the member for the recognition of the MEELS and responded that the total energy consumption mentioned in the paper referred to the total energy consumption in the residential sector and did not include the energy consumption in the transportation sector. In addition, LPG and town gas were two different types of gaseous fuels and the relevant appliances were different. Therefore, gas type was currently specified in the energy label of gas appliances to facilitate public identification and avoid confusion.
16. As regards the testing of LED lamps, a member asked whether the EMSD would conduct life tests for LED lamps as it did for CFLs; if so, whether the testing standards would be the same.
17. The EMSD responded that the testing of LED lamps would be conducted in accordance with the IEC 62612:2013 test standard, which required initial tests and 6 000 hours of testing for at least 20 samples meeting the standard as well as the requirements stipulated in the Code of Practice on Energy Labeling of Products.
18. A member commended the work and efforts of the EMSD in promoting energy efficiency.

Agenda Item 5: Briefing on the Incident of a 275kV Fault in HEC's Power System

19. A power supply interruption incident occurred in some areas on Hong Kong Island on 19 April 2023. Representative of The Hongkong Electric Company, Limited (HEC) briefed members on the investigation and follow-up work on the incident.
20. A member enquired whether the spare cable concerned was equipped with an electrical protection system and whether the cable cap-end was earthed that resulted in the occurrence of an earth fault after inadvertent energisation.
21. The HEC representative responded that the spare cable concerned was connected to a switchgear which had become spare after a network change in 2009. Therefore, the cable was not equipped with an electrical protection device. In the incident, the electrical protection system at the supply end was activated to isolate the fault.

Generally speaking, oil-filled cables had an aluminum armour or lead sheath, and the cable cap-end was sealed with a metallic gland, which was connected to the cable by tinning. In other words, the use of a metallic gland at the cable cap-end was tantamount to remote earthing of cable, thus an earth fault would occur after inadvertent energisation.

22. A member enquired whether there were tests to help prevent the occurrence of the problem in the work procedures for high voltage electrical installations. It was understood that on the day of the incident, customers tried to call the customer service department of the HEC but failed to get through. The member suggested the HEC consider providing clearer information to affected customers through simple recorded messages in future, so as to enhance the quality of customer service.
23. The HEC representative responded that commissioning was normally required after alteration of high voltage electrical installations. However, as the refurbishment works did not involve replacement of parts and components, only busbar insulation tests were conducted. In the incident, as the engineer in charge considered that the switchgear concerned was not connected to any cable, he did not conduct a cable test in this regard. To prevent similar incidents, the HEC advised all engineers in charge to familiarise themselves with the work procedures and to introduce counter-check requirements for the commissioning work. In respect of customer service, a telephone recording system had been set up on the day of the incident. Nevertheless, the system was unable to cope with the sudden surge in the number of incoming calls. In this regard, the company was conducting a comprehensive review to explore the possibility of connecting calls to more telephone exchange systems during emergencies, deploying more manpower to cope with unforeseeable circumstances and enhancing the content of information published on the internet, so that customers could be clearly informed of the latest situation.
24. A member said that theoretically a spare cable would be earthed if a metallic gland was used at the cable cap-end, and asked whether it was the usual practice.
25. The HEC representative responded that the use of metallic gland at cable cap-end depended on the intended use of the cable. As the spare cable concerned was an oil-filled cable, it was expected to be laid underground for a considerable period of time. Ordinary plastic sealing might not be able to prevent leakage of insulation oil from the cable. Furthermore, metallic glands were generally required given the inherent oil pressure in cables. In addition, an earthed circuit was necessary to facilitate future detection and identification of the cable concerned, so that when a signal was injected

into a section of the cable, the signal could be received at another section of the cable, thus facilitating the identification of cables at site.

26. A member enquired about the current number of similar spare cables installed by the HEC and whether the HEC would explore improvement measures in the future, such as considering the installation of electrical protection devices to enable immediate disconnection of power supply to the faulty cables in case of similar faults in the future, or switching to methods other than tinning to prevent the occurrence of earth faults.
27. The HEC representative responded that there were four similar sets of spare cables in the 132kV and 275kV transmission systems of the company. For these spare cables, the company had put forward a relatively long-term and sound solution, which was to segregate all spare cables from their switches completely, so that the spare cables were unable to be energised. Regarding metallic glands, the main consideration for the time being was oil pressure. In particular, plastic glands might not be able to prevent the leakage of insulation oil from oil-filled cables that were laid on sloped roads in the long run. In this regard, the company would explore different solutions and conduct feasibility studies.

Agenda Item 6: Any Other Business

Voluntary Registration Scheme for Technicians Handling Mildly Flammable Refrigerant of Household Air-conditioners

28. In view of the continuous increase in the number of household air-conditioners using mildly flammable refrigerant, the Government considered it necessary to raise the safety awareness of technicians on the handling of mildly flammable refrigerant of household air-conditioners, and therefore launched the Voluntary Registration Scheme for Technicians Handling Mildly Flammable Refrigerant of Household Air-conditioners (the scheme). At this meeting, the EMSD briefed members on the details of the scheme.
29. A member remarked that over the past three years or so, the trade had been working closely with the EMSD in promoting the scheme. The member opined that not only was the scheme welcomed and supported by the trade, it also played a positive role in promoting environmental protection, energy saving and emission reduction, making it an extremely good measure.
30. A member enquired how the scheme would dovetail with the introduction of refrigerants other than R32 refrigerant to the market as technology advanced. The EMSD responded that at the moment, the only alternative to R410A refrigerant in the

Hong Kong market was R32 refrigerant. The EMSD was also aware that some manufacturers were actively developing new types of refrigerant, and such refrigerants were often mildly flammable. The EMSD had taken into account market development before introducing the scheme and the naming of the scheme reflected the current situation. As technology continued to advance, the EMSD would keep monitoring the development of new types of refrigerant and would update and enhance the scheme in a timely manner.

31. A member remarked that the existing scheme required technicians to possess certain years of experience but did not have a requirement on their craftsmanship level. The EMSD responded that the introduction of the scheme was to encourage qualified technicians to register. The EMSD was aware that most of the technicians in the market had actually handled more than a hundred air-conditioners within the specified years of service, indicating that they had sufficient experience. Apart from the registration requirement on the years of working experience, the technicians were also required to complete recognised training courses and obtain relevant certificates. During the registration period, they were still required to engage in the relevant work and complete the continuing professional development requirements.
32. No other business was raised by members.
33. The Chairman thanked members for their attendance and adjourned the meeting. Members would be informed of the date, time and venue of the next meeting in due course.