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Gas Standards Office
Electrical and Mechanical Services Department
3 Kai Shing Street
Kowloon, Hong Kong

Dear Sir/Madam

Views from The Hong Kong Institution of Engineers on the Proposed Amendments to the Gas Safety Ordinance (Cap. 51)

On behalf of the Institution, I am pleased to present to you our views and suggestions as set out in the enclosure for your consideration on the captioned subject.

With our expertise and experience, the Institution welcomes the opportunity to work with the Government on the area of concern if and when it is needed.

Thank you.

Yours faithfully

Ir Peter SI
Director
(for President Ir Dr Barry LEE)

BL/AS/PS/SS

Enclosure

Views from The Hong Kong Institution of Engineers on the Proposed Amendments to the Gas Safety Ordinance (Cap. 51)

The Hong Kong Institution of Engineers (HKIE) is pleased to express its broad agreement with the legislative amendments proposed by the Electrical and Mechanical Services Department (EMSD) to the Gas Safety Ordinance (Cap. 51) as outlined in the Consultation Paper related thereto.

2. This agreement notwithstanding, the HKIE would like to present the following perspectives and suggestions, which aim to align the amended Ordinance more closely with the industry's present condition as experienced by professional engineers, for the EMSD's consideration.

Cap. 51 over the years

3. According to the proposed amendments, the legislative framework provided by Cap. 51H, if adopted, would largely follow the current arrangements governing Towngas, LPG, and natural gas. A historically informed review of the Cap. 51 framework, as it has been operating thus far, would therefore provide a background to our suggestions.

4. Cap. 51 was drafted in the late 1980s and reflects how the gas industry operated during this period. Back then, all the gas supply companies in the LPG sector, with the possible exception of HK Oil, possessed sufficient in-house expertise and resources to fulfill the envisaged role of Registered Gas Supply Companies (RGSC). In particular, they assumed undivided responsibility for the whole chain of operations, extending as far as the gas metres at customers' premises and including evaluations of which personnels are sufficiently competent to perform gas supply work.

5. A major shift took place in the late 1990s and 2000s within the LPG industry. Major gas companies began separating their LPG businesses from oil operations, their core business. The resulting reallocation of LPG affairs to the companies' marketing division led, on the one hand, to the absence of in-house LPG expertise and, on the other, to the outsourcing of such expertise to third party "competent persons (CPs)," often the same companies' former employees. In reaction, a CP list system for LPG was instituted by the Gas Authority (GA). This system, however, brought the negative effect of obscuring the demarcation of responsibilities regarding which party can decide who qualified as competent under RGSCs. GA decides for RGSCs; but Towngas, power companies, and oil companies that are RGSCs can decide for themselves without the legislative requirement of consulting GA.

Competent Persons (CPs)

6. The present CP system thus originated from the developments narrated above,

namely, the outsourcing of LPG expertise and the concomitant lack of in-house expertise. It was not a strategic move to meet new demands brought on by innovations within the industry. At its best, the system was only adequate for the industry back then, but not for what it has evolved into since then.

7. For example, a close examination of the current requirements for Competent Persons Class 1 (CP1) and Competent Persons Class 2 (CP2) reveals that these requirements were largely made-to-measure for LPG systems at housing estates. One implication is that these requirements are poorly suited to CPs for Auto LPG stations, although they too are officially employed. The requirements are even less suited to CPs for other gas systems, such as natural gas and biogas. The requirements for these latter CPs are often spelled out unofficially.

8. This awkward, entangled situation resulted from the growing complexity of the gas industry (even within LPG's realm) since the CP system's initial appearance. In other words, the CP system fails to cope with the industry's current reality, partly because it was originally introduced mostly in reaction to the major shift around the late 1990s but not for some other purposes, and partly because the system has become increasingly obsolete in the face of later developments in the industry. To untangle this situation, it is advisable to update the system comprehensively by establishing different classes of CPs for different aspects of gas.

9. For the same reason, different classes of CPs need to be established for different aspects of H2. For instance, CPs for H2 filling stations and CPs for H2 fuel cell power generation stations should be differentiated and have differing requirements because of the differing knowledge and expertise that are required of them. Future developments in the profession (e.g. the foreseen popularity of portable hydrogen fuel cells/generators) may further complicate matters. The amendments should have provisions that anticipate and address such complications. In the case of the cited example, for instance, the fuel cells/generators' safe use and their differences from existing gas appliances should be taken into consideration.

10. Therefore, caution and attention to nuance must be exercised in mapping the different categories of CPs for H2. In particular, the classic paradigm of CP1 (certification), CP2 (compliance), CP4 (installation) and so forth should not be rigidly adhered to. A comprehensive and actionable training programme for CPs for H2 should also be developed, and the programme should give due regard to hydrogen's transition from dangerous goods to a fuel source.

11. In consideration of the provisions for the registration of Hydrogen Vehicle Mechanics (HVM) in the proposed amendments, similar provisions should also be made for the registration of CP in the actual amendments.

12. More than three decades of experience (i.e. since Cap. 51 came into effect) have demonstrated that gas expertise exists to a greater degree in the gas industry than in the Gas Standards Office (GSO). The deciding factor is the stability of industry

practitioners in contrast to the unpredictable nature of GSO's staff change. In view of this, it stands to reason that engineering institutions / Engineers Registration Board should be allowed a greater involvement in the qualification exercise or process for CP. However, the simplistic pitfall of allowing RPE (Gas) to directly become CP should be avoided. The primary concern here is to develop a qualification regime specifically for CP (Gas).

13. Registered Structural Engineer's precedence furnishes one possible approach to developing such a regime. This involves forming a qualifying board with representatives from GA, engineering institutions, and Vocational Training Council (or other academic bodies). This diversity of industrial stakeholders serving on the board would ensure that the industry's most currents needs are incorporated in the vetting process. The HKIE, through the Professional Certification Committee established under it, has recently launched the certification for Engineering BIM Professional (Eng BIM Pro) and Engineering BIM Coordinator (Eng BIM Coord). The Committee is currently working on the certification for Environmental Impact Assessment (EIA) Professionals as well as Stage Engineers. More such certifications would be another approach worth considering.