Fire Safety Engineers (FSE) workshop

Date: 13 June 2025 (Friday)

Time: 10am to 12pm

Mode/Venue: Physical Workshop (HQ SCDF City Campus Classroom, level 3)

S/N	Agenda for discussion	Summary of discussion
01	Update on 1. PB Regulatory System (Update) • FSE Registration • Number of PB cases • Number of PB waiver issues 2. Admin Requirements (update)	**Presentation** See Annex A for the presentation slides. The workshop was attended in person by 43 participants. SCDF shared with the FSEs the number of registered FSEs and the number of performance-based (PB) submissions and fire engineering issues submitted. SCDF informed that there are 2 new fire safety engineers this year. SCDF reminded the FSEs of the following: Waiver description (i) The waiver description, including number of deviations listed in CORENET must align with the waiver submission; (ii) Each block should be reviewed individually with its own assessment; *Quality of FEDB/FSER/FEA* (iii) To review their report before submission (FEDB/FER/PB waiver) to ensure technical accuracy with no typographical error. A poor example from a PB waiver submission was discussed, where the table of deviation did not align with the descriptions within the report; (iv) Minimum details of fire scenarios as well as suggestions on additional information to be provided for clarity; (v) Details of fire scenarios shall be indicated clearly in the marked-up layout and section view, with the fire location aligned with the summary table of proposed fire scenarios; (vi) For natural ventilation scenarios, the location and dimension of the vent openings shall be indicated clearly in layout as well as section view;

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		(vii) To document the heat release rate (HRR) output for each fire scenario and to ensure all text is legible with good visual presentation within their mark-ups; and (viii) To notify the PB team via email (with SCDF reference number) after submitting their PB waiver, FEDB or FER through CORENET so that the PB team can monitor and review the fire engineering reports once transmitted. Any correspondences should also include all PB officers. Contact information for all PB officers was provided.
02	Fire Engineering Technical Requirements (update)	**Presentation** See Annex A for the presentation slides. *Emergency Illumination Lux Approach for Ductless Jet Fan System in Carpark* SCDF shared the acceptance criteria from the Fire Code Cl.7.4.4.g.(1)(b) for ductless jet fan carparks. In the event 'visibility ≥ 25 m' cannot be achieved for spaces beyond the maximum allowable smoke-logged area, FSEs can consider use of emergency illumination, subject to the following conditions: (1) The illumination shall have at least an average of 10.8 lux along the path of egress measured at floor level during hot smoke test; (2) Smoke temperature not more than 60ºC and visibility of at least 10 m at 1.7 m AFFL; and (3) At least 1 viable route for firefighters within the smoke-logged area, where smoke temperature not more than 250ºC and visibility of at least 5 m at 1.7 m AFFL. Illustrations demonstrating how this can be studied were also shared. SCDF explained that this approach is aligned with international references, namely the NFPA 101 Handbook. The designed lux levels shall be tabulated if this approach is taken and lux levels shall be measured on-site during the hot smoke test. Since the lux measured on-site will likely be lower than the designed lux levels due to hot smoke, it may be prudent to include a safety buffer for the designed lux level. FSE Victor Ho highlighted that it would not be practical to carry out smoke test and measure the lux level on every carpark floor. SCDF clarified that the FSE together with the RI and QP shall assess and determine the more onerous location(s) or floor(s) based on factors such as their design layout and fire load to

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		determine which floor(s) to carry out the smoke tests and measure the lux level and document their justifications. FSE, RI and QP shall be jointly responsible for the outcome of their assessment. *Multiple Air Compressors on Ledge* SCDF clarified that when FSEs include fire scenarios for air compressors on a ledge as part of their fire engineering assessment, they shall consider a multiple air compressor fire scenario. SCDF also clarified that single air compressor fire scenarios can only be accepted if FSEs provide justification that there is adequate AC separation to prevent fire spread between air compressors. The AC layout must be aligned with layout used in the assessment. *Car Soot Yield Value* SCDF reminded the FSEs that FSE may adopt a soot yield not lower than 0.1 g/g, unless he/she has justification to adopt other values. SCDF also explained that SCDF has received submissions for car fire scenarios with widely varying soot yield values. For vehicle fires, the soot yield for general car parks shall not be lower than 0.07 g/g, in view of SCDF's reference to overseas practice and available research. SCDF clarified that this is applicable for general car parks and for both EV and ICE vehicles. *Staircase Acceptance Criteria* SCDF also shared that for evaluation of tenability in the staircases by FSEs, the acceptance criteria shall be evaluated at a height of 2 m.
03	AOB	**Presentation** See Annex A for the presentation slides. SCDF conveyed that BSD Pte Ltd may be carrying out a Pyrosim and Pathfinder workshop and advised FSEs to look out for BSD's email if interested. FSEs who attended the workshop at HQ SCDF would be awarded 3 CPE hours.

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