

A Big Post-Flashover Fire in Mini-Storages

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A number 4 alarm fire broke out recently in an old industrial building with mini-storage facilities [1]. Over 120 firefighters and 30 fire engines were deployed to fight against the blaze. The fire size was 2400 m² with more than 200 mini-storage cubicles. The big post-flashover fire lasted for over 100 hours before finally extinguished, much longer than 20 hours of the Garley Building fire in 1996 [2,3]. No occupants were trapped inside but two firefighters were killed while taking actions.

Many questions requiring research effort were raised about this big long fire by different parties:

- Fire load density over 1135 MJm⁻² [4] to have a long fire of duration 108 hours?
- Any dangerous goods (DG) stored and ignited to facilitate flame spread?
- Limited ventilation fires of different flame colour, or burning flammable liquids ?
- Air supply rates increased to burn more combustibles to give a big fire while operating [5-7] the positive pressure ventilation (PPV) to a 'ventilation-controlled' fire?
- High concentration of toxic gases, particularly carbon monoxide, emitted upon burning, due to inadequate air for burning and cooling by water?
- Inadequate number of water jets deployed in suppressing the fire with adequate amount of water?
- Protection of firemen by the current protective clothing [5-7] is adequate; only able to stand 1000°C for 8 s, but commented to be too hot in causing thermal stress [8] 5 years ago?
- Any explosions inside the cabin store? say due to liquefied petroleum gas (LPG), explosive clean refrigerant or other flammable liquid?
- Any damages to the structures as the fire lasted for 108 hours and the fire resistance period (FRP) is only 4 hours?

Systematic research has to be carried out for addressing the above queries scientifically with full-scale burning tests [9]. It is difficult to compile a report within a short time.

References

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