

BUREAU OF INDIAN STANDARDS

RECORD OF DISCUSSIONS

**Meeting of the Expert Group, CED 46:P2/WG 3 under
Panel for Fire and Life Safety, CED 46:P2 : Seventh Meeting
to Revise Part 4 'Fire and Life Safety' of NBC**

Monday, 25 November 2024 : 1500 h - 1700 h

In Online Mode from Manak Bhavan, Bureau of Indian Standards, 9 Bahadur Shah Zafar Marg, New Delhi 110 002

Convener: Shri M.V. Deshmukh **Member Secretary :** Shri Arun Kumar S

Members Present Virtually:

- 1) Shri Santosh S. Warick, Mumbai
- 2) Shri Srinivas Valluri, Hyderabad
- 3) Shri Shashikant Jadhav, Mumbai
- 4) Shri Sandeep Goel, New Delhi
- 5) Shri Abhay Purandare, Vorodara
- 6) Shri Vinod Kapse, Pune
- 7) Shri Kiran Hatyal, Mumbai

Regrets:

- 1) Shri Tarak Chakraborty, Kolkata

Item 0 OPENING REMARKS

The Convener Shri M.V. Deshmukh welcomed the members present to the meeting.

Item 1 TECHNICAL MATTERS

The Group while debating on the various clauses to be revised and the new ones to be included in Part 4, in line with the decisions made in the previous 6 meetings, decided the following:

A) Based on the suggestions from M/s Infosys

1) M/s Nohmi Bosai (Japan) had introduced one form of A.I. based detection of fire towards ensuring quenching the same using suitable automatic hydrants mounted at roof level inside the buildings. Not much development on A.I. w.r.t fire safety have been codified, and so, the proposer was requested to share his suggestions and thoughts for consideration in the standardization process.

2) In continuation to the earlier discussions regarding E.V. battery fire safety, the following were noted after further detailed deliberations:

- i) As on date water is the only medium to control, if not fully put out the fires in battery generated fires in EVs, as also noted in NFPA 855 and IFC 2021.
- ii) Increasing the density of sprinklers in the areas that are designated for EV parking and charging points up to 9-12 l/m² (as also available in the 2022 research document of NFPA).
- iii) Sprinklers to have a maximum coverage area of 9 m².
- iv) There are no proven chemicals that can be used to douse EV fires (although F 500 and AVD are being used by some).
- v) FDA 241, FDA 216, VESDA (Siemens), TAMER (Honeywell), NOVAC are all available but are best suited for enclosed spaces having lithium batteries and cannot be used in huge parking areas where EVs are parked and/or charged.
- vi) Separate the EV charging bays from the regular car parking to isolate the probable hazard (which is similar to smoking & non-smoking zones/rooms in various buildings).
- vii) Separate treatment/requirement to be provided for EVs located in open areas and in stilts (naturally ventilated); and EVs not to be permitted in any basement.
- viii) The sprinklers in the stilts should be of K-160 type to ensure good cooling/coverage in the event of a fire generated by EV.
- ix) SOPs for electrical overcharge to be introduced in the Code.
- x) NBC addresses the requirements typically for the new buildings; but specific suggestions need to be included for existing buildings as buildings owners tend to provide EV charging points in existing parking areas.

Convener summed up to address the aspects of segregation of EVs from other vehicles in parking areas, introduced requirements for residential and commercial occupancies, any specific requirement for hybrid vehicles may also be included.

3) The Code to continue its requirements/provisions without mentioning about how many simultaneous fires can be addressed; but IS 15105 and IS 13109 to address the number of fires, as done by OISD document(s).

4) Water-mist although permitted in Part 4 require a performance test to be carried out for each type of hazard as the fire density varies; also the properties vary from one

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manufacturer to another; even NFPA has not lay down specific requirements. With all these, water-mist cannot be and should not be taken as a substitute for sprinkler system/hydrant system.

B) Fire Curtains

- i) CED 22 and CED 36 of BIS have since identified ISO standards on fire curtain (physical barrier) for suitable adoption/adaption for use as Indian Standards, and also for smoke barriers.
- ii) The requirements of fire barriers and smoke barriers should be clearly spelt out avoid misuse and disuse.
- iii) Shri Vinod Kapse kindly agreed to share a comparison prepared by him based on the standards of BS, UL and EM regarding fire curtains.

C) Table 26 in NBC 2005 regarding typical values of fire load density cannot be brought back or revised without another set of research-based studies/data although IIT, Gandhinagar has in the recent past attempted to suggest such values.

D) As regards the comments of M/s ALP on the provisions of HVAC chapter regarding duct wrapping/insulation, etc using EPDM, Nitrile rubber, and the like, all the members were requested to kindly peruse the P-draft of chapter of HVAC to be issued shortly by BIS. In this context Shri Kapse kindly agreed to share his inputs.

E) The suggestions of Shri Abhay Purandare (received today) were discussed and he kindly agreed to suggest revisions to, and add new text for terms and definitions. His suggestion to reorder the clauses from 3 to 6 was noted and it was felt that the Code users have in the recent decade started understanding the chapterization, and so changes to the structuring may not be brought at this point.

F) To include the location of fire command center within Annex E, as the same is applicable for high rises and special buildings only.

G) To the suggestion to shift the requirements for fire tender access from Part 3 of NBC to Part 4, it was noted that the same relates to space planning/requirements for open spaces and thus is best to remain in Part 3 and simply cross referred in Part 4. However, this Panel to suggests further updates on the provisions in Part 3.

H) The Group noted that classification of building occupancies and permitting specific occupancies in one of the 3 fire zones is also a way to avoid spread of damage due to fire when various buildings occupancies are located next to each other.

Based on all the 7 minutes of this Expert Group, members were requested to send preferably the clauses or their pointers and suggestions for introducing the changes and new clauses in the preliminary draft of the revision of Part 4 which should be circulated before 30 November 2024 in line with the mandate provided to all

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the 22 Panels also by the Chairperson of the National Building Code Sectional Committee, CED 46.

Item 2 DATE & PLACE OF THE NEXT MEETING

The next meeting will be held on Thursday, 28 November 2024 from 1130 h to 1400h jointly with the Advisory Group members.

Item 3 ANY OTHER BUSINESS

There being no other item, the meeting ended with thanks to one and all.
