

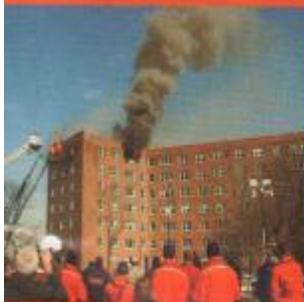
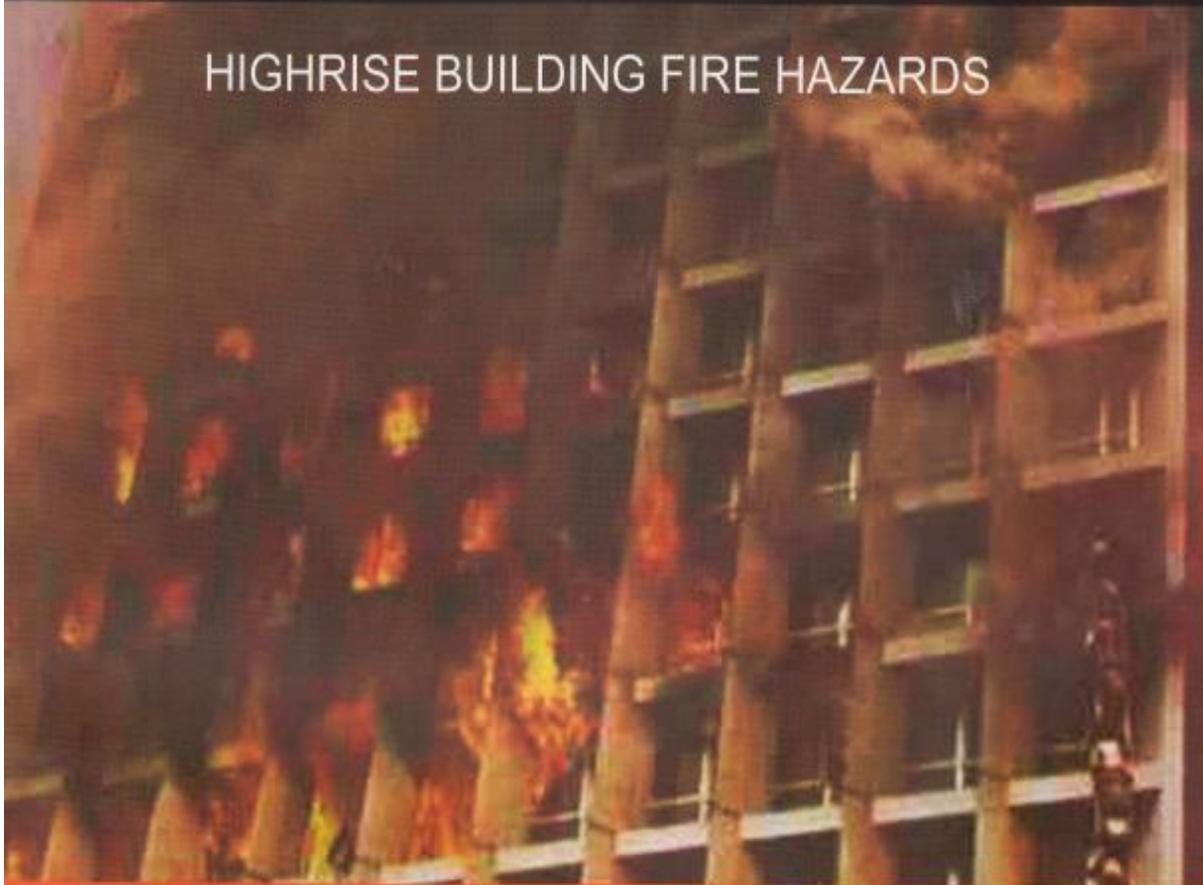
# NAFO News Letter

JANUARY - APRIL 2012

VOLUME - 4

ISSUE - 20

## HIGHRISE BUILDING FIRE HAZARDS



### NATIONAL ASSOCIATION OF FIRE OFFICERS

REGN No. 35438 OF 1999

NAFO Secretariat, C/o. Directorate of Maharashtra Fire & Emergency Services, State Fire Academy,  
Vidyanagari, Hans Burga Marg, Santa Cruz (E), Mumbai - 400096.

Tel: 022 - 26670438 / 439 E-mail: [nafoidia101@gmail.com](mailto:nafoidia101@gmail.com), [directormifs@live.com](mailto:directormifs@live.com)

Web: [www.maharashtrafireservices.org](http://www.maharashtrafireservices.org)

## MESSAGE FROM THE PRESIDENT, NAFO

Dear Friends,

First and foremost we owe you our apologies for the delay in circulation of this News Letter due to certain unforeseen and unavoidable circumstances. However, we assure you that in future this essential 'link' between the NAFO Secretariat and Members will be maintained with stringent regularity.

It gives me immense pleasure to share with you and express my views about the 'bright future of Indian Fire Services'.

The NAFO is emerging with its paradigm shift to establish the knowledge sharing platform, not only within the fraternity but far beyond. The widened horizons will definitely make us feel GREAT.

The next reunion of Indian Fire Officers is expected to meet in Mumbai, within the next few months.

We need to come together to deliberate various issues and prepare the various Perspective Plan of the new landscape of Indian Fire Services.

The Fire Advisory Cell in MHA, Govt. of India and State Fire Service Heads are striving to reshape and strengthen the Fire Services under their command and control. We need to share our success stories as well as failures too!

Our objective is to learn out of failures and cherish our accomplishments. NAFO would be the best platform for this, which everyone thinks it's their own, which is absolutely true.

Thanks for the trust and confidence reposed in me by you all while extending the responsibility of the Presidential function of NAFO to me.

We need to meet more frequently and strengthen our brotherhood for the professional development.

I take this opportunity to extend everyone of you the Season's Greetings.

Sd/-

M V Deshmukh  
President, NAFO

Email: [nafoindia101@gmail.com](mailto:nafoindia101@gmail.com) / [directormfs@live.com](mailto:directormfs@live.com)

## **GENERAL SECRETARY WRITES:**

Dear Members,

NAFO Secretariat deeply regrets the delay in bringing out the current issue of the NAFO NEWS LETTER. This inordinate delay was primarily due to two reasons – (i) due to the shifting of the NAFO Secretariat from Panaji, Goa, to Mumbai and (ii) since we were awaiting the completion of the construction of our Maharashtra Fire & Emergency Services independent high-rise building which is now housing the entire combined Complex of the Directorate offices as well as the State Fire Training Academy.

I am happy to inform the Members that the reconstituted Managing Committee has taken decision to initiate several schemes for revamping and rejuvenation of the NAFO activities for the coming years. Within a few months we will be holding a National / International Seminar on a Technical theme of topical interest to be announced shortly. Another step will be for introduction of Revised Rates of Membership Subscription as well as Advertisement Tariff with immediate effect. These Revised Rates are being published at the end of this Issue of News Letter.

We have launched a vigorous Membership drive and in this connection our appeal to our existing members is to try and enlist at least a few of their professional colleagues into the Association.

We also make an earnest request to our esteemed Organisational Members as well as professional experts to contribute technical articles to our News Letter.

Looking forward to your active co-operation, assistance and positive inputs for the further development and growth of our beloved Association.

(Sd/-)

(SANTHOSH WARICK)

GENERAL SECRETARY NAFO

## FROM THE FOUNDER PRESIDENT'S DESK

Dear Friends,

First things first. The NAFO Secretariat and our Editorial Committee express their sincere apologies for the inordinate delay in bringing out this issue of the NAFO News Letter. The reasons have been explained in the General Secretary's Message. We also assure you that due care will be taken to avoid such delays in future.

As for myself, although facing problems of advancing age (over 86 now), on request from the President NAFO and other senior professional friends, and on considerations of extending all possible assistance and support for our only National level Association at this very crucial period when the Association, as well as the Fire Service profession as a whole, is confronting several major challenges in the context of India's emergence as one of the front ranking nations in the World, I have decided to continue in the Editorial Board and contribute whatever I can for the fulfillment of the objectives of the Association.

Further, as indicated in my Message in the Jan-July 2012 issue of the News Letter, the methodologies for implementing the Action Plan for the NAFO Core Group Delegation to call on the Hon'ble MOS/ HM/ or PM himself for seeking redressal of several of our long pending professional problems, are being worked out.

### ILLUSTROUS "FATHER OF INDIAN FIRE SERVICES"-

A brief Write- up by me on late Mr.M.G.PRADHAN, who eminently deserves to be reckoned as the "FATHER OF INDIAN FIRE SERVICES" is published in this News Letter. His Birth Centenary will be on 23 Oct 2016. It is my sincere hope and appeal to the NAFO and the entire Fire Protection Community in India to celebrate the occasion in a befitting manner.

It is gathered from Media Reports that Mr. M. Shashidhar Reddy has taken over as Vice-Chairman, National Disaster Management Authority (NDMA) from Gen. Vij w.e.f. 14 April 2012. **It is heartening to note that the major thrust of the present allotment of funds as announced by Mr. Reddy will be for development of Fire and Rescue/ Emergency Services in the country.** I am appending below the relevant extracts from his Press statement:

- " Fire Services have a major role to play in Disaster Emergencies";
- "13<sup>th</sup> Finance Commission has allotted Rs. 23000 crores for developing DM infrastructure at State, District and Panchayat levels";
- **"Major thrust of the allotment of funds will be for development/revamping of the Fire Services, including improving outreach of Fire Services to rural areas, achieving Response time in urban areas to 3 to 4 minutes, and preparation of Fire Hazard Response Plans."**

With all Best Wishes and Prayers for further development and growth of the Fire Protection Services in our country and abroad.

Dated: 8<sup>th</sup> May 2012

Sd/-

(G.B.MENON)

Founder President, NAFO

**EXTRACTS FROM IS 12456: 2004**

(Courtesy: BUREAU OF INDIAN STANDARDS)

**FIRE PROTECTION OF ELECTRONIC DATA PROCESSING INSTALLATION- CODE OF PRACTICE**

(First Revision)

Note:

- i. **Only relevant clauses in IS: 12456- 2004 have been given in these Extracts for ensuring adequate Fire Safety requirements in EDP Installations/Areas.**
- ii. **For complete information of the contents of the IS, copies of the same are available for purchase from the HQrs or Regional Offices of the BIS.**

FOREWORD

Electronic data processing (EDP) equipment has become a vital tool in recent years and obviously warrants proper protection. As the equipment is used for processing large amount of statistical, problematical and experimental information, its malfunctioning can put the whole programming operation in jeopardy. This speaks for the importance of its safeguarding against any fire hazard **since a rise in temperature of the surroundings of the system exceeding 45<sup>0</sup> C will cause its malfunctioning and a sustained ambient temperature above 50<sup>0</sup>C may cause irreversible failures.**

The electronic data processing area should be deemed to include the following areas:

- a) **Central processing area** – Where the central processing unit and its associated equipment are installed.
- b) **Data handling area** – Where the data is processed through the computer media, for example, punched cards, punched paper tape, magnetic tape or disk, etc....
- c) **Media stores**- Ready use paper store and magnetic media library.
- d) **Output printing area**- Where the printing of output data is carried out.
- e) **Communication area** – Where the EDP telecommunication system is installed.

**The tackling of fire with speed and effectiveness assumes great importance.** The security staff and other staff should be trained in the use of fire fighting equipment.

The purpose of this standard is to set forth the minimum requirements for the protection of electronic computer/ data processing equipment and associated area from damage by not only fire but also its associated effects that is smoke, corrosion and water.

1 **SCOPE**

This standard lays down the minimum requirements for the protection of electronic computer/data processing equipment from damage by fire covering the structural environment and its protection.

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Software installations situated in electronic and industrial parks may also use this standard as a guide for protection of their equipment.

2. **REFERENCES**

The standards given in Annex A

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3. **GENERAL**

3.1 The application of this standard shall be based on the.....

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3.2 Following factors:

- a) Fire threat of the installation to occupants or exposed property particularly for the telecommunication installations,
- b) Economic loss from loss of function or loss of records, and
- c) Economic loss from value of equipment.

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4. **TERMINOLOGY**

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4.1 **Central Processing Area**- The room or enclosure in which the central processing unit and its associated equipment are installed.

4.2 **Data Handling Area** – The room or enclosure in which data is received and transferred to computer input media such as magnetic tape or disc, including direct heading equipment.

4.3 **Electronic Data Processing Area (EDP Area)**- The EDP area may comprise the central processing area, data handling area, media stores, output area, communications area and other areas served by the same air conditioning system. Other areas such as clean rooms and industrial processing may be determined to constitute part of the EDP area.

4.4 **Media Stores**- The ready – use paper store and magnetic media library.

4.5 **Protected Enclosure**- An enclosed volume protected by a fire detection and/or extinguishing system in which the EDP installation and other related equipment is installed.

4.6 **Separate Fire Division** – A portion of a building cut off from all other portions of the building by firewalls, fire doors, and other approved means adequate to prevent any fire that may occur in one fire division from extending to another fire division.

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5. **LOCATION AND CONSTRUCTION**

5.1 **LOCATION**

a) EDP areas should preferably be housed in a separate building.

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5.2 **Where the EDP area forms a part of larger premises, that is, it is in communication with the adjoining occupancies in the same building, it should be separated from those occupancies by noncombustible walls/floors having a minimum period of fire resistance as given in Table 1.**

Table 1 Fire Resistance for Walls and Floors

(Clause 5.2)

Sl No.	Fire Separation minutes		Nature of Adjoining Occupancies
	Walls	Floors	
(1)	(2)	(3)	(4)
i)	120	120	Houses, office premises, banks and the like
ii)	120	120	Shops, canteens, risk having low fire Hazard [see National Building Code (PartIV)] and the like.
iii)	240	240	Moderate and high hazard risks [see National building Code (Part IV)], Storage warehouses and the like

- 5.6 Walls (both external and internal), wall linings, or ceiling materials/ lining and any suspended ceiling should be built from non- combustible materials.
- 5.7 Where raised (platform) floors are built above existing main floors, they should be of adequate strength, non-combustible and should not incorporate materials having a melting point lower than 600<sup>0</sup>C.
- 5.12 EDP areas should not be located in basements. Where this is absolutely impracticable; precautions should be taken to prevent flooding and there should be adequate access for fire fighting personnel.
- 5.13 Where large discharges or deposit of water may occur (for example from the operation of sprinklers or leakage of water services), adequate facilities should be available to enable removal of the water.

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**6. UTILITIES AND SERVICES**

6.1 As far as possible dedicated air conditioning plant should be considered for the EDP area and the plant room should be separated from the EDP area by walls having fire resistance of at least one hour. The access to the plant room should be from outside and not through the EDP area.

6.2 All air ducts should include automatic dampers having a rating of at least one hour

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6.4 **Manual controls for disconnecting the electrical power supplies to the EDP installation (but not to essential services such as emergency lighting) should be located near the main exit door and operator’s consoles.**

6.7 Special arrangements should be made to prevent the accumulation of heat and smoke in the EDP area by the use of extract systems.

6.8 To ensure control of fire spread and tightness of space in the event of extinguishant discharge, **the air conditioning system (including dampers) should be interfaced with the fire protection system.**

6.10 Lighting system should be provided in compliance with various requirements of the National Electrical Code. **The illumination level shall not be less than 500 lux.**

6.12

- a) **Cables should be installed in conduit** or trunking, or clipped to the slab or perimeter or on a tray. Loose bundles of cables are not acceptable.
- b) **Power, lighting and communication cables should be segregated.**

c) In ceiling and floor voids used as air handling plenums, PVC data cables clipped to a tray are acceptable only if they are separated from power cables and smoke detection is provided. Mineral insulated cable may be installed unenclosed.

**It is recommended that flame retardant, non-corrosive and low smoke producing cables, as specified in IS 1554 (part 1), be used where appropriate.**

**6.13 All services, cables ducts, etc, should be fire stopped to ensure the required integrity of the construction.**

6.15 Cable openings or other penetrations through fire- rated walls and/or floors or other fire rated partitions/assemblies within the EDP area and also between the EDP area and the adjoining occupancies **shall be fire stopped** with a properly installed listed fire stopping material (passive equipment) that has a fire resistance rating of at least equivalent to the fire resistance rating of the penetrated building components as stated above.

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**7. MATERIALS AND EQUIPMENT WITHIN EDP AREA**

**7.1 Office furniture in the EDP area shall be of metal construction.**

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**Notes:**

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- 1 Metal frame chairs with integral upholstery shall be permitted
- 2 Insulated or controlled conductive coverings shall be permitted on surfaces of chairs, tables, desks etc.....

**7.1.6 LIQUIDS**

If the design of the unit is such that oil or equivalent liquid is required for lubrication, cooling or hydraulic purposes, it shall have a closed-cup flash point of 150°C or higher, and the container shall be of a sealed construction, incorporating automatic pressure relief devices.

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**7.2 GENERAL STORAGE**

7.2.1 Paper stock, inks, unused recording media, and other combustibles within the EDP area shall be restricted to the absolute minimum necessary for efficient operation. Any such materials in the EDP area shall be kept in totally enclosed metal file cases or cabinets.

7.2.2 Reserve stocks of paper, inks, unused recording media and other combustibles shall be stored in one or more rooms outside of the EDP area.

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## 8. FIRE PROTECTION, DETECTION AND EXTINGUISHMENT EQUIPMENT

### 8.1 AUTOMATIC FIRE DETECTION SYSTEM

- a) The EDP and all associated areas (including floor and ceiling voids) which contain components critical to their functioning should be protected by an approved automatic fire alarm system installed in accordance with this Standard as well as IS 2189. Where requirements of both the Standards differ, this Standard shall take precedence. Adjoining areas communicating with EDP area should also be protected by an approved automatic fire alarm system as stated above unless separated as stated in 5.2
- c) Where problems exist that may prevent the rapid detection of a fire (such as fast air currents caused by air conditioning) the additional or alternative measures should be taken as given in Table 2. This table is mainly concerned with conventional point detection but specialized detection operating on other principles, such as aspirating system may also be appropriate.
- d) The operation of the fire alarm system covering the protected space should **automatically initiate emergency shutdown procedures for all electrical power supplies in the EDP area and shut down any air conditioning system serving the protected space**. The only, exception to the above is where an automatic shutdown of equipment controlled from a continuously manned EDP area would result in extensive business interruption. Installation should be capable of being shutdown manually in a predetermined manner on the indication of the operation of the fire alarm system.

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- 1) All smoke detectors used should conform to IS 11360.
- 2) Operation of the first detector should result in an indication of fire at the fire alarm control and indicating equipment.
- 3) If the control and indicating equipment can uniquely identify the status of each detector on a circuit (that is **addressable system**), then the detector and confirmation detector(s) may be connected on the same detection circuit. For non-addressable systems, coincidence detectors need to be installed on separate detection circuits.

- 4) It is recommended that the density of detectors is increased to 15 m<sup>2</sup> per detector for all protected spaces, or greater as given in Table 2.
- g) An indicator panel associated with the automatic fire alarm system should be installed in a readily visible position adjacent to the EDP area. Panels used for the indication of the status of the extinguishing system should be located outside the EDP area at all entrances. All manual controls for the extinguishing system should be readily accessible.
- j) Where interlock and shutdown devices are provided, the electrical power thereto shall be supervised by the fire alarm panel(s).

**Table 2 Siting of Detectors**

[Clause 8.1(c) and (e)]

<b><u>Sl No.</u></b>	<b><u>Description of Risk</u></b>	<b><u>Spacing/Siting of Detectors</u></b>
(1)	(2)	(3)
i)	General EDP area	25 m <sup>2</sup> per detector
ii)	Paper storage (Bulk and Roll)	100 m <sup>2</sup> per detector
iii)	Ceiling and flood voids	15 m <sup>2</sup> per detector for velocities up to 4 m/s 10 m <sup>2</sup> per detector for velocities beyond 4 m/s
iv)	Equipment cabinets in EDP area	To be sited in agreement between the manufacturer and the user
v)	Air conditioning installation and ventilation ducts and plenums	Sited at all inlets and outlets where the dilution factor is low and within ducts, where practical. Specialized duct mounting detectors should be sited in agreement between manufacturer and user.

## 8.2 FIXED AUTOMATIC EXTINGUISHING SYSTEMS

- a) EDP and adjacent areas (including associated floor and ceiling voids) should be protected by one of the following fixed automatic extinguishing systems:
- 1) A sprinkler installation in accordance with IS 15105 for automatic sprinkler installations.  
Note--- Sprinkler systems is unsuitable for floor void protection(see Table 3)
  - 2) Clean agent total flooding system in accordance with IS 15493.

Note-There are restrictions on the use of Halons as identified by the Country Strategy prepared by the Halon Alternative Options Committee in consultation with Ozone-cell.

- 3) A carbon dioxide total flooding system in accordance with IS 15528.
  - 4) A High expansion foam system (Recommended for use in floor voids only).
  - 5) System selection depends largely on the specific hazards presented by the risk to be protected. In general, however, the applications recommended in Table 3 should be used.
- b) Procedures for ventilating the protected enclosure after discharge of the extinguishing agent should be established.
- c) Persons must not be present in the protected space during the discharge of:
- 1) Any carbon dioxide total flooding systems.
  - 2) Clean agent total flooding systems where the designed concentration exceeds the limits by volume at the maximum anticipated temperature set in the respective Indian Standards.

**Table 3 Selection of Extinguishing Method**

**[Clause 8.2(a)]**

Sl No.	Risk Type	Extinguishing System				Sprinkler	High Expansion Foam
		Clean Agent		CO <sub>2</sub>			
(1)	(2)	Total flood (3)	Local (4)	Total flood (5)	Local (6)	(7)	(8)
i)	Computer rooms, EDP installations and associated electronic equipment	✓		✓ <sup>1)</sup>		✓	
ii)	Equipment, cabinets in above areas which do not have clean agent total flooding system		✓		✓		
iii)	Bulk paper storage and/or handling areas or other risks presenting deep-seated carbonaceous fire hazards			✓		✓	
iv)	Plant areas housing equipment such as generators, air handling units, etc...	✓		✓		✓	
v)	Floor voids where separate flooding is required	✓		✓			✓

- vi) Ceiling voids ✓ ✓ ✓
- vii) Godown and Warehouse ✓ ✓

<sup>1)</sup> Manually operated systems only.

**8.3 PORTABLE FIRE EXTINGUISHING APPLIANCES**

- a) Fire extinguishers of Carbon dioxide type in accordance with IS 2878 shall be available near EDP and similar equipment. Staff should be trained to ensure that ready and safe injection of extinguishant into the CPU and associated equipment is achieved.
- b) In addition to the portable fire fighting appliances referred to in 8.3 (a), suitable portable gas pressure type water fire extinguishers should be provided in accordance with IS 940 in the EDP area and near any equipment handling large quantities of paper. There should be adequate access to hose reels at any part of the EDP area.

**9. COMMISSIONING OF FIRE PROTECTION SYSTEMS**

9.1 In order to confirm that fire protection systems are fully functioning and adequate for their purpose, commissioning tests should always be undertaken as part of the standard acceptance procedures.

9.2 All fire detection systems should be checked for correct operation, such as simulating a fire condition as described in 9.3. All functions and indicators should be checked including the operation of coincidence connection of smoke detectors (where included). Where detection systems are used to initiate extinguishant discharge, the systems should be checked for operation from detector through to all actuating mechanisms. Simulators may be used where one-shot devices are incorporated as actuators.

9.3 Due to the prevailing air movement conditions that may exist in the protected area, placing a smoke source close to a detector is not considered to be a realistic simulation of a fire condition. It is therefore recommended that a series of fire/smoke tests are carried out within the protected area as stated in items (a),(b)and(c). The appropriate series depends on the sensitivity required of the fire detection system and the materials existing in the protested area. **The detection system should respond within 2 min from the start of each test**, with the air conditioning system both on and off.

- a) Series 1 – **High sensitivity** (for example, for monitoring cable and electronic components in equipment for overheating).
- b) Series 2 – **Standard sensitivity** (for example to provide room space protection).
- c) Series 3 **Special risks**.

9.4 Details of commissioning/acceptance testing of specific extinguishing systems are contained in the respective clean agent standard.

9.6 A full site clean agent discharge test should not be carried out unless it can be shown that no other commissioning method can be used. If a discharge test is to be used then it should be undertaken in accordance with the respective Indian Standard for each clean agent.

## **10. MAINTENANCE OF FIRE PROTECTION SYSTEMS**

10.1 In order for the reliable and continued operation of the fire protection systems, a maintenance plan should be drawn up which should include details of routine tests.

10.2 The fire detection system should be maintained in accordance with IS 2189 and any additional maintenance required peculiar to the equipment as defined by the manufacturer.

10.3 Carbon dioxide and clean agent total flooding fire extinguishing systems should be maintained in accordance with the requirements stipulated in the respective Indian Standards for these agents.

10.4 Automatic sprinkler installations should be maintained in accordance with the requirements specified in IS 15105.

10.5 Portable fire extinguishers should be maintained in accordance with IS 2190.

## **11. PROTECTION OF RECORDS**

11.1 The amount of record media (paper, magnetic tapes, memory drums, etc) within the computer area should be kept to a minimum.

11.2 All record media on which data is recorded and which are essential to the completion of an operation should, while not in use, be stored outside the computer area in a fire resisting storage cabinet. Such rooms or storage cabinets should be specifically designed (according to the record media to be stored) to give protection against the effects of heat and moisture in the event of fire. Records of primary importance should be designed as vital records and may require additional protection measures, such as sub-division and storage in a number of smaller, protected, fire resisting cabinets; located separately.

11.3 Rooms used for the storage of records should be equipped with suitable fire protection system(s) and portable extinguishers.

## **12. HOUSEKEEPING PROCEDURES AND GENERAL CONSIDERATIONS**

12.1 Any flammable materials (for example flammable cleaning fluids) used for computer maintenance, should be stored outside the EDP area.

12.2 Smoking, eating and drinking should be prohibited within the EDP Area.

12.3 Waste paper should not be allowed to accumulate in the computer area. Metal bins with self-closing lids should be provided and emptied as necessary.

12.4 Voids should be maintained clean and free from litter, by adopting a regular cleaning policy.

12.5 When the computer is in use, it should be manned by personnel trained in the operation of the fire protection equipment at all times. Cleaners or other personnel having access to the EDP areas should be supervised.

**12.6 The electrical wiring and equipment, associated with the computer should be regularly inspected, tested and maintained as required by the IEE wiring regulations and manufacturer's instructions.**

12.7 Consideration should be given to the selection of furniture with minimum content of combustible materials.

12.8 Floor tile removers should be readily available and located with the portable fire extinguishing appliances.

**12.9 Action to be taken in the event of and following a fire, or the operation of an automatic extinguishing system, should be promptly displayed. Measures or means should be available to ascertain when an area is safe to enter following a discharge. All personnel, including visiting workers, should be familiarized with the procedures.**

### 13. CONTINGENCY MEASURES

13.1 A list of contingency measures and plans of action should be drawn up to cater for the following:

- a) Loss of equipment or records due to fire or other hazard,
- b) Loss of equipment or records due to faults or major failures, and
- c) Re-siting or alteration of equipment or records.

The plan should include detailed procedures that would enable full recovery from back-up tapes/media. The plan procedures together with the back-ups should be controlled and guarded as vital records. **No plan is effective unless it is tested.** There are three levels of testing to check procedures, vital records and vital business processes:

- a) Paper exercise,
- b) Recovery exercise, and
- c) Recovery and production run and service restoration from recorded system.

The frequency of testing should depend on the criticality of the risk.

13.2 The measures should ensure that where losses occur, experts in the salvage and reclamation of data processing equipments are available as soon as possible.

13.3 In order to minimize interruption of computer time, consideration should be given to obtaining under contract either an immediate computer back-up service operation by a specialist computer company or delivery of portable computer recovery centres to the site. The disaster plan should describe the procedure to obtain a cold restart in the shortest possible time.

In some cases, duplicate (back-to-back) computer systems may be justified to minimize disruption still further. Alternatively, companies operating in proximity to one another having the same computer facilities or divisions of the same company, may adopt a mutual aid arrangement.

**ANNEX A**  
**(Clause 2)**

**LIST OF REFERRED INDIAN STANDARDS**

<i>IS No</i>	<i>Title</i>
2175 : 1988	Specification for heat sensitive fire detectors for use in automatic fire alarm system
940 : 2003	Specification for portable fire extinguisher, water type (gas cartridge) ( <i>first revision</i> )
1554 (Part 1) : 1988	PVC insulated (heavy duty) electric cables : Part 1 For working voltage up to and including 1 100 V
1646 : 1997	Code of practice for fire safety of buildings (general) — Electrical installations
2189 : 1999	Code of practice for selection, installation and maintenance of portable first-aid fire extinguishers
2190 : 1992	Code of practice for selection, installation and maintenance of portable first-aid fire extinguishers ( <i>third revision</i> )
2878 : 1986	Specification for fire extinguisher, carbon dioxide type (portable and trolley mounted)
3614 (Part 1) : 1966	Specification for fire check doors: Part 1 Plate metal covered and rolling type
3808 : 1979	Method of test for non-combustibility of building materials
3809 : 1979	Fire resistance test for structures
11360 : 1985	Specification for smoke detectors for use in automatic electrical fire alarm system
15105 : 2002	Design and installation of fixed automatic sprinkler fire extinguishing system
SP 30 : 1985	National Electrical Code
IS 15493 : 2004	Gaseous fire extinguishing systems — General requirements
IS 15528 : 2004	Gaseous fire extinguishing systems — Carbon dioxide, total flooding and local application including incabinet subfloors systems

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# **MEANS OF EGRESS (Extracts)**

**By James K. Lathrop, FSFPE and Clay Aler, P.E**

**(Courtesy: Society of Fire Protection Engineering Journal)**

Means of Egress — “A continuous and unobstructed way of travel from any point in a building or structure to a public way consisting of three separate and distinct parts: (1) the exit access, (2) the exit and (3) the exit discharge,”<sup>1</sup> or more simply put, the path from a location in the building to the street. This is the definition of “means of egress” in the NFPA Life Safety Code<sup>®</sup> (LSC) and in the NFPA Fire Code. The definitions in the International Building Code (IBC) and International Fire Code (IFC) are very similar. The “continuous and unobstructed” portion of the definition is important for obvious reasons and is addressed in requirements within the codes. The IBC does have one significant difference in that it includes “... travel from any occupied portion of a building or...”, which implies that unoccupied areas do not have means of egress. This article addresses some of the more interesting or controversial means of egress issues in the LSC over the last decade (as well as in the IBC and IFC), and this subject of egress from areas that are normally unoccupied is the subject of several proposals<sup>2</sup> for the next edition of the Code. The committee reports that the proposed revisions for the 2012 edition of the LSC will be considered by the NFPA membership at the NFPA Conference and Expo in June, 2011, in Boston. The 2012 editions of the IBC and IFC have already been finalized.

Although it appears that the IBC and IFC handle this subject with the definition, one quickly discovers that the problem is similar in all four codes in the fact that defining “occupied,” “unoccupied” or “normally unoccupied” is much harder than it sounds. The IBC and IFC do not define unoccupied or occupied, but they do define “occupiable space.” That is defined as “a room or enclosed space designed for human occupancy in which individuals congregate for amusement, educational or similar purposes, or in which occupants are engaged at labor, and which is equipped with means of egress and light and ventilation facilities meeting the requirements of this code.” This implies that if one doesn’t provide the means of egress, the space is not an “occupiable space” and, therefore, is not occupied and, therefore, does not need means of egress. It also implies that if one is engaged in labor, it is in an occupiable space which is, therefore, occupied and requires means of egress, even if that labor is only 10 minutes per year. Also, nothing is mentioned of sleeping or residential types of activities, which would be hard pressed to be considered similar to amusement or educational purposes. It is not the intent to be critical of the definition, only to show that “occupied” is not easy to define. The Life Safety Code defines “occupiable area” as “an area of a facility occupied by people on a regular basis.” The obvious problem here is what is “regular basis”? The Codes also defines “occupied building”<sup>3</sup> but that definition is restricted to section 7.2 Means of Egress Components, and is primarily designed to allow doors to be locked under certain conditions when the building is not considered occupied.

# **ILLUSTRIOUS “FATHER OF INDIAN FIRE SERVICES”**

## **LATE MR.M.G.PRADHAN-BRIEF PROFILE**

Date of birth	23.10.1916
Qualifications	B.Sc., M.I.Fire E (Lon).
Previous Address	‘IVANHOE’, 139 Foreshore Road, Bombay-1

### **Technical training courses etc. attended abroad:**

- Attended Course of Company Officers and Seminar of Senior Officers at Fire Service Colls, Brighton. U.K.;
- Was attached to Fire Service College, Fire Research Station etc. in U.K.;
- After U.K. training, went to Canada and USA where he was attached to the Fire Departments at Hallifax, Montreal, Toronto, Boston, New York, Baltimore, Philadelphia, Washington, Detroit etc. in various responsible posts.

### **Professional Assignments in India:**

#### **a) Bombay Fire Brigade**

- Station Officer : 2.6.1941 to 7.4.1943
- Dy. Chief Officer : 8.7.1943 to April 1948
- Chief Officer : April 1948 to 19 May 1955  
(1<sup>st</sup> Indian Chief)

#### **b) National Fire Service College (NFSC):**

- (First) Director NFSC : 20 May 1955 to 27 October 1966. He requested for upgradation of the scale of pay of Director's post. This was not agreed to by the Govt., and so he put in for premature retirement.

#### **c) Ministry of Home Affairs Govt. of India:**

- Appointed to the post of Fire Adviser in the MHA vide Appointment Order No: 6/12/68-ER dt. 2<sup>nd</sup> July 1968 (First Fire Adviser);
- Took over charge with effect from 5.8.1968 AN
- Was Chairman, Standing Fire Advisory Committee (SFAC) for 3 years (First Professional Fire Service Officer to be Chairman)
- **Met with a jeep accident while on official tour to Bhutan and died on 28<sup>th</sup> May 1969, near Thimphu in Bhutan, at the age of 52 years.** Mr. Pradhan was sent to Bhutan at the specific request of that Government. While proceeding in a jeep from Thimphu to Paro on 28 May 1969 for inspection of major buildings and other fire risk areas, he met with an accident and was washed away in the river Paro. His body had remained untraced, was reported as dead, and a Press Note was issued by Govt. of India on 7 June 1969 regretting the demise of Mr. Pradhan. He left behind his wife and two daughters.

**Professional Attainments : Many-**

- He was the country's First in many high- ranking posts he held: (i) First Indian Chief Officer of Bombay Fire Brigade (ii) First Commandant/ Director of the National Fire Service College (iii) First Fire Adviser in the Min. of Home Affairs, Govt. of India.
- He was the First Chairman, Standing Fire Advisory Committee (now Council) for 3 years, in the beginning.
- His contributions included Fire Brigade Manual for Bombay Fire Brigade, Rules and Regulations for Storing and Handling of Flammable and Combustible Materials, with Fire Safety Measures, for licensing by Govt. and Municipalities, Standard Manual for All India use, Finalised draft specifications for about 50 items of fire – fighting equipment in collaboration with Indian Standards Institution, now Bureau of Indian Standards, wrote several technical articles.

**Judging by all standards, he is reckoned as the “FATHER OF INDIAN FIRE SERVICES.”**

**Sd/-**

**(G.B.MENON)**

Fire Adviser, Govt. of India (Retd) &  
Founder President, National Association  
of Fire Officers (NAFO)

## **FIRE SERVICE DAY/WEEK**

One of the important tasks handled by the SFAC from the past was to make the public more fire conscious through countrywide propaganda and publicity. Observances of a Fire Prevention Week throughout the country was realised as one of the means to achieve this object, and from 1956 onwards the observance of a Fire Prevention Week was initiated by the Min. of Home Affairs all over India in the week covering the Deepavali in November each year.

In the late sixties it was decided by the Government that **instead of Fire prevention week there should be observance of only one day as Fire Service Day, and the day selected for this was 14<sup>th</sup> April so as to commemorate the memory of the brave Firemen who lost their lives in the great Bombay Dock Explosion on 14<sup>th</sup> April 1944.**

**On 14<sup>th</sup> April 1944, during the II<sup>nd</sup> World War, a ship, "S.S. Fort Stikine" loaded with arms and ammunition which was moved in the Victoria Docks exploded followed by fire. In this devastating fire and explosion, property worth over Rs.100 crores was destroyed. Nearly 500 men, including 66 gallant officers and men of the Bombay Fire Brigade, and the Supdt. and 11 men of the Bombay Salvage corps also lost their lives.**

Ever since the Sixties, 14<sup>th</sup> April every year is being observed as the Fire Service Day throughout the country. It is also observed as Martyrs' Day in Fire Service in memory of those who die in harness during fire fighting operations.

The MHA selects a particular theme every year for the Fire Service Day/ Week, which is highlighted in all the publicity material like posters and pamphlets issued through the Directorate of Advertising and Visual publicity, supplemented by the efforts from the State Govts. and other organisations. On this day and the week covering it, various publicity and fire prevention propaganda programmes including demonstrations etc. are organised by the Fire Services.

Also, on this day Fire Service flags are sold to the public for collecting funds for the welfare of the deceased and serving members of the Fire Service and their families.

P.S. The theme circulated by MHA for public awareness campaigns and mass propaganda programmes for this year's Fire Service Day/ Fire Prevention Week is -----  
**"SMOKE MANAGEMENT SAVES LIVES"**

Sd/-

(G.B.MENON)

Fire Adviser, Govt. of India (Retd)

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# **INFORMATION TIT-BITS**

## **RAJIV GANDHI NATIONAL QUALITY AWARD**

**Rajiv Gandhi National Quality Award had been instituted by the Bureau of India Standards, with the approval of Government of India in 1991** with a view to encourage Indian Industry including those in the service sector to strive for excellence and giving special recognition to those who are considered to be the leaders of quality movement in India. The award is intended to generate interest and involvement of Indian industry in quality programmes, drive our products and services to higher levels of quality and equip better to meet the challenge of domestic and international markets. **This award is an annual feature.**

There are five awards consisting of one for large scale manufacturing organisations, one for small scale manufacturing organisations, one for large scale service sector organisation, one for small scale service sector organisations, and one for BEST OF ALL. In addition, there are twenty eight commendation certificates including eight commendation certificates each for large scale and small scale manufacturing organisations and six commendation certificates each for large scale and small scale service organisation.

The assessment criteria for these awards are based on TQM and are at par with the criteria for other similar overseas awards.

## **❖ UNDER-CONSTRUCTION BUILDING SEALED IN CHENNAI**

**In a crackdown against unauthorized buildings, Chennai Corp. sealed nearly seven buildings in the commercial districts of Mannady and Sowcarpet on September 7.** According to officials, the under-construction buildings violated development regulations of the 1971 Town and Country Planning Act. Most of the builders in violation received plan permits last year and **continued to construct more floors than sanctioned.** Norms such as front setback and side setback were not followed, while parking areas were not seen as a necessity. Notices were sent to the builders in August, and **the drive to seal the buildings came after adequate time was given for the builders to correct the violations.** Chennai Corp. was to continue the operation on September 8 and is planning a similar campaign in the neighboring pulianthope zone.

(Courtesy: Elevator World India)

## ❖ KONE MANUFACTURING PLANT NEAR CHENNAI

**KONE India plans to invest in a second manufacturing facility near Chennai.** According to KONE India Managing Director Neeraj Sharma, as of October, the company had acquired land for the project in an industrial estate about 35 km from the Bangalore highway. **With India's annual demand of 35,000-40,000 elevators,** KONE India's 8.5- acre facility at Ayanambakkam has reached its manufacturing capacity. The details of the expansion are expected to be finalized by 2014.

## MITSUBISHI TO EQUIP SHANGHAI TOWER

**Mitsubishi Electric Corp. has received an order from Shanghai Tower Construction & Development Co., Ltd. for the installation of 106 elevators in Shanghai Tower, currently under construction. The elevators would be among the world's fastest, with some capable of speeds up to 59 fps. Three sets of elevators will travel between the second basement level and the 119<sup>th</sup> –floor observation deck, while four double-deck elevators traveling at a world-record 33 fps between the ground floor and hotel lobby on the 101<sup>st</sup> floor will also be installed. The building's emergency elevator is expected to become the world's longest – travelling elevator by operating between the third basement level and 121<sup>st</sup> floor, a distance of 578.5m.**

**Mitsubishi was to begin supplying the units in autumn. Shanghai Tower is expected to become China's tallest building when completed in 2014.**

## ❖ WORLD'S TALLEST BUILDING COMING UP IN JEDDAH Saudi Arabia (KINGDOM TOWER ANNOUNCED)

Saudi Arabia's Prince Alwaleed bin Talal announced plans to build the world's tallest building in Jeddah. **Known as Kingdom Tower, the 1,000-m-tall building would surpass the height of the Burj Khalifa, currently the world's tallest building.** Designed by Chicago- based Adrian Smith+ Gordon Gill Architecture, Kingdom Tower will be equipped with 59 elevators (five of which will be double deck units), as well as 12 escalators. High-speed elevators will travel to the observation deck at speeds of up to 10mps. The skyscraper will house a Four Seasons hotel and serviced apartments, class-A office space, luxury condominiums, the world's highest observatory and a 30-ft. diameter outdoor balcony at level 157.

Kingdom Tower will be the centerpiece and first phase of a new **US\$20-billion development known as Kingdom City located north of Jeddah, overlooking the Red Sea.**

- ❖ The International Elevator and Escalator (IEE) Expo 2012 will be held February 16-18 at the Bombay Exhibition Center in Mumbai. With its three previous events, IEE Expo has been instrumental in uniting OEMs, component and accessory manufactures dealers, service providers and consultants etc. allowing them to directly interact with the user community comprising builders, developers, architects, airport and metro rail authorities, city development authorities, public works departments etc. with participation from varied organizations across the globe, the expo is one of the most sought after in the worldwide vertical transportation industry.
- ❖ The Bureau of Indian Standards (BIS) and the Maharashtra Public Works Department will be actively involved in this year's event and copies of Indian Codes and Standards will be made available at their booth. IEE Expo 2012 is expected to be a major event for the vertical-transportation industry.

For more information, visit Website: [www.ieexpo.com](http://www.ieexpo.com).

## **DLF FIRE STATION IN CHENNAI**

(Courtesy: New Indian Express Cochin dt 25/4/2012)

**India's largest Real Estate Company DLF has become the first private developer in the country to have its own Fire Station in an IT SEZ in Chennai.** DLF is setting up its own Fire Station with Bronto Skylift Hydraulic Platform rescue vehicles with reach of 60 meters, imported from Finland. The Chennai Special Economic Zone was DLF's first foray in South India to unveil its vision of world class pan India development.

***Editorial:*** This was also announced, in a recently held National Workshop on "New Trends in Fire and Life Safety" in Cochin, by Mr.S.K.Dheri, M.D, DLF Services Ltd., Ex-CFO Delhi Fire Service, one of the foremost Fire Experts in our country. His Email: [dheri-satish@dlf.in](mailto:dheri-satish@dlf.in) / [skdheri@hotmail.com](mailto:skdheri@hotmail.com)

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2. Covering letter along with the Cheque / D.Draft should be sent to Mr. Santhosh Warick, General Secretary C/O Directorate of , Maharashtra Fire & Emergency Services , State Fire Academy, Vidyanagari, Hans Burga Marg, SANTA CRUZ (EAST), MUMBAI-400 098 INDIA, Tel. No :022-26670438/39, E-mail-nafoindia101@gmail.com

# NATIONAL ASSOCIATION OF FIRE OFFICERS

**(Registration No: S. 35438 of 1999)**

c/o State Fire Academy, VIDYANAGARI, HANS BURGA MARG,  
SANTA CRUZ (EAST), MUMBAI – 400 098

FAX No: 022-26660287 / E-mail: [nafoindia101@gmail.com](mailto:nafoindia101@gmail.com)

<b>MEMBERSHIP FORM</b>
------------------------

<b>NAME:</b>				
<b>RANK:</b>				
<b>ORGANISATION:</b>				
<b>ADDRESS FOR CORRESPONDENCE:</b>				
..... City ..... (PO) .. ..... Dist. .... State ..... PIN ..... Tel.No. .... ..... Mobile ..... E-mail .....				
<b>AGE:</b>		<b>Date of Birth:</b>		<b>Blood Group:</b>
<b>QUALIFICATION (S):</b> (Attach Xerox copies of Certificates of highest Professional/ Fire Service Qualification)		<b>Educational (Highest):</b>		
		<b>Prof./Tech.(Highest)</b>		
<b>FIRE SERVICE EMPLOYMENT PORFILE</b>		<b>Name of Organisation:</b>		
		<b>Length of Total Service:</b>		
		<b>Present Position:</b> (If retired say so)		
		<b>Tel:</b>	<b>Fax:</b>	<b>E-mail:</b>
<b>AWARDS/HONOURS RECEIVED (If any) <u>OR</u> OTHER NOTABLE PROFESSIONAL ACHIEVMENTS</b>				
1)				
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I hereby certify that the information given above is correct and also that I will abide by the Memorandum, Rules and Regulations of the Association.

Station:

Date:

Signature of the Applicant

**FOR OFFICE USE**

The above application has been considered/ not considered by the Sub- Committee on..... and the enrolment No. is .....

Date

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2. Address for Correspondence:  
**General Secretary, NAFO , c/o Directorate of Maharashtra Fire Services,  
State Fire Academy, VIDYANAGARI, HANS BURGA MARG,  
SANTA CRUZ (EAST), MUMBAI – 400 098, Tel No: 022- 26670438,  
FAX No: 022- 26660287, Mobile: 9821107590  
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