Japan -the Philippines International Forum
on Fire and Disaster Management

FDMA
Fire and Disaster Management Agency

Fire Prevention Measures in Japan

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Fire Service Act 消防法

Act No.186,1948 昭和23年法律第186号

CHAPTER 1 GENERAL PROVISIONS

(Purpose)

Article 1 The purpose of this Act is to maintain peace and order and promote public welfare by preventing, guarding against and controlling fire, protecting people's lives, persons and property from fire and minimizing the damage caused by fire, earthquakes or other disasters.

第1章 総則

(目的)

第一条 この法律は、火災を予防し、警戒し及び鎮圧し、国民の生命、身体及び財産を火災から保護するとともに、火災又は地震等の災害による被害を軽減するほか、災害等による傷病者の搬送を適切に行い、もつて安寧秩序を保持し、社会公共の福祉の増進に資することを目的とする。

CHAPTER 2 PREVENTION OF FIRE 第2章 火災の予防

The Fire Service Act contains various provisions concerning fire prevention. It grants fire chiefs, fire station chiefs, and other firefighters the right to give orders if they judge that playing with fire or an outdoor bonfire is dangerous from the viewpoint of fire prevention. It grants fire defense personnel the right to enter any place, the right to order the submission of documents, and the right to collect reports. It also contains provisions concerning the following: the right to order the suspension of use of property under fire prevention measures regarded as dangerous from the viewpoint of fire prevention; fire chiefs' or fire station chiefs' consent to building permission; the system for management of fire prevention; inspection and report of property under fire prevention measures; fire defense organizations; and equipment that uses fire.

CHAPTER 3 HAZARDOUS MATERIALS 第3章 危険物

With regard to hazardous materials, the Fire Service Act prohibits the manufacture, storage, or handling of them at places other than designated facilities for manufacture, storage, or handling and specifies the following: procedures for applying for the construction of a manufacturing, storage, or handling facility; procedures for permission, inspection, maintenance, and revocation of permission; and methods for holding examinations for qualified inspectors to be stationed at facilities for hazardous materials.

CHAPTER 3-2 HAZARDOUS MATERIALS SAFETY TECNIQUES ASSOCIATION 第3章の2 危険物保安技術協会

CHAPTER 4 FIRE DEFENSE EQUIPMENT , ETC. 第4章 消防の設備等

With regard to fire defense equipment, the Fire Service Act specifies standards for fire defense equipment that must be installed according to the purpose, size, structure, and capacity of property under fire prevention measures; and methods for holding examinations for fire defense equipment officers, who are qualified to inspect, install, and maintain fire defense equipment.

CHAPTER 4-2 INSPECTION, ETC. OF A MACHINE, APPLIANCE, ETC. USED FOR FIRE DEFENSE

第4章の2 消防の用に供する機械器具等の検定等

CHAPTER 4-3 JAPAN FIRE EQUIPMENT INSPECTION INSTITUTE, ETC.

第4章の3 日本消防検定協会

CHAPTER 5 GUARDING AGAINST FIRE 第5章 火災の警戒

CHAPTER 6 FIRE EXTINGUISHING ACTIVITIES 第6章 消火の活動

CHAPTER 7 INVESTIGATION OF FIRE 第7章 火災の調査

CHAPTER 7-2 AMBULANCE SERVICE 第7章の2 救急業務

CHAPTER 8 MISCELLANEOUS PROVISIONS 第8章 雑則

CHAPTER 9 PENAL PROVISIONS 第9章 罰則

The penal provisions specify penalties for violation of the provisions of the Fire Service Act and clarify smooth promotion of the purpose of the Act and strict attitude toward violators.

APPENDED TABLE 1 別表第1

APPENDED TABLE 2 別表第2

APPENDED TABLE 3 別表第3

http://www.kaigai-shobo.jp/pdf/Fire_Service_Act_eng.pdf

Overall Picture of Major Systems concerning Fire Prevention Administration

Example: Building and structures

Houses

Single houses

Apartment houses

Where many people enter and or live.

Fire services authority
- On-site inspection and order of action (e.g, prohibition of use etc.)
- Effective security by penal provisions

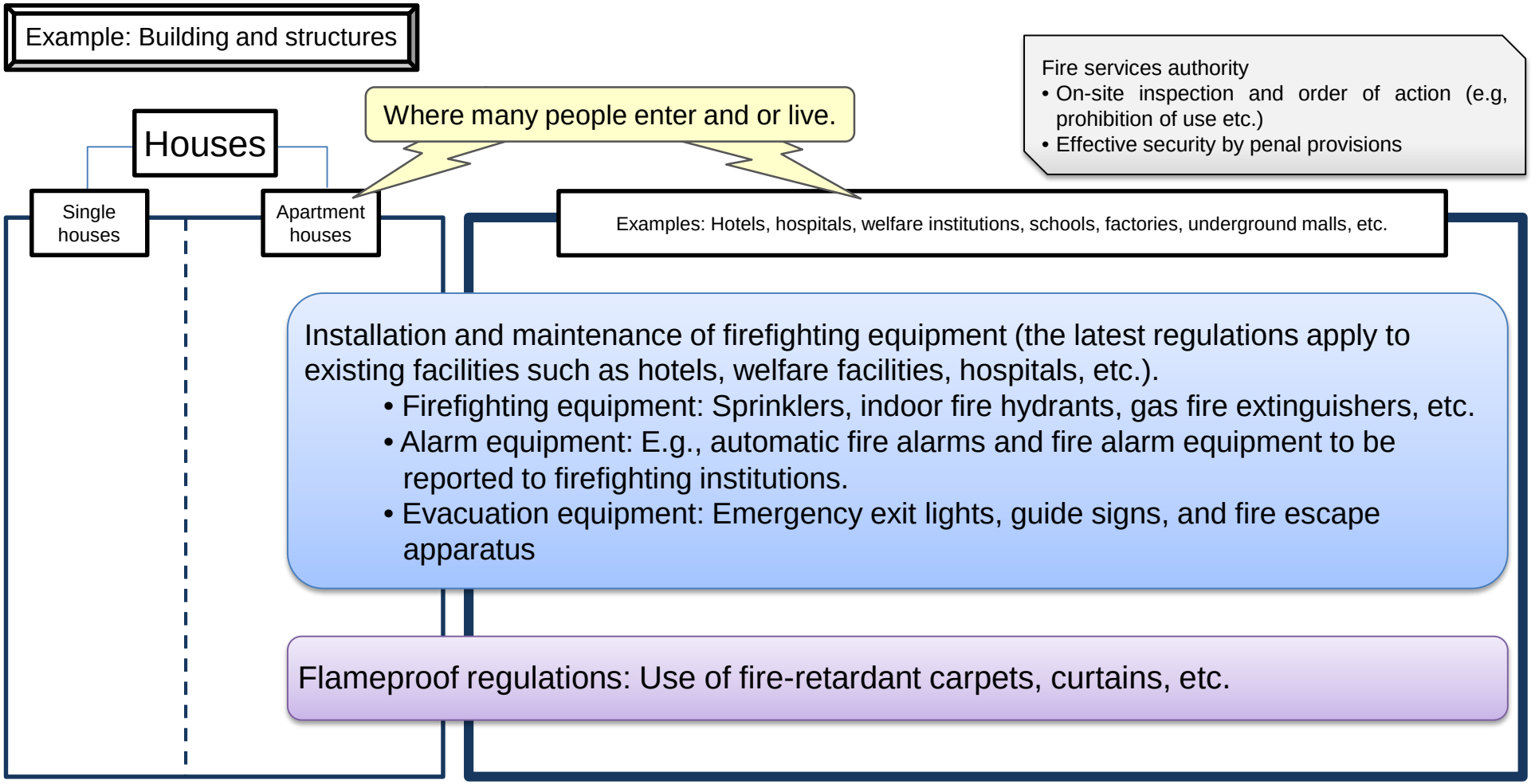
Examples: Hotels, hospitals, welfare institutions, schools, factories, underground malls, etc.

Installation and maintenance of residential fire alarms

[Regulations by laws + ordinances]

Fire protection management/General fire protection management.
- Election of fire prevention managers, creation and notification of firefighting plan, and implementation of training (+ periodical inspection system).
- E.g., election of general fire prevention managers and creation of whole fire plan (in the case of multiple administrators).

Response to disaster prevention management, earthquakes, and other disasters (Large-scale establishments only).


Example: Building and structures
Houses
Single houses
Apartment houses
Where many people enter and or live.
Fire services authority
• On-site inspection and order of action (e.g, prohibition of use etc.)
• Effective security by penal provisions
Examples: Hotels, hospitals, welfare institutions, schools, factories, underground malls, etc.
Installation and maintenance of firefighting equipment (the latest regulations apply to existing facilities such as hotels, welfare facilities, hospitals, etc.).
• Firefighting equipment: Sprinklers, indoor fire hydrants, gas fire extinguishers, etc.
• Alarm equipment: E.g., automatic fire alarms and fire alarm equipment to be reported to firefighting institutions.
• Evacuation equipment: Emergency exit lights, guide signs, and fire escape apparatus
Flameproof regulations: Use of fire-retardant carpets, curtains, etc.

Example: Building and structures

Fire services authority
- On-site inspection and order of action (e.g, prohibition of use etc.)
- Effective security by penal provisions

Restrictions on fire facilities, fire equipment, etc.:

Structures and locations stoves, boiler, etc.

➡ Regulated by laws and ordinances

In addition, regulations concerning fire protection management (regulating ordinances) of outdoor events, and regulations concerning the handling of hazardous materials (e.g., gasoline) are specified (Chapter 3).

Structure of laws and regulations concerning the installation and maintenance of firefighting equipment.

Article 17, Fire Services Act

Parties concerned with fire preventive objects (e.g., owners of the objects) in hotels, hospitals, welfare facilities, underground malls, etc. are obliged to install and maintain firefighting equipment.

➡ Aiming to reduce damage caused by fire, according to the purpose of fire prevention objects from a physical point of view.

[Fire Services Act Enforcement Ordinance: Chapter 2 (Articles 6 to 36)]

- ■ Technical standards related to the installation and maintenance of firefighting equipment.
- ■ Fire prevention objects obliged to install firefighting equipment

→ For each firefighting equipment etc., according to the purpose, size, accommodation personnel etc. of objects to be protected, regulations subject to installation obligation are stipulated.

(Example: Ryokan and hotel with a total area of 150 m² or more must install fire extinguishers.)

[Fire Services Act Enforcement Ordinance: Chapter 2 (Article 5 - Article 33)]

- ■ Detailed technical standards concerning installation and maintenance (* Partly covered by notices)
  (Example: Fire extinguishers shall be installed for areas within a walking distance of 20 meters from any part of the areas.)
- ■ Procedure for reporting on firefighting equipment.

Types of fire-fighting equipment

1 Equipment used for firefighting

- Fire extinguishing equipment (e.g., fire extinguishing appliances, indoor fire hydrants, and sprinklers)
- Alarm equipment (e.g., automatic fire alarms)
- Evacuation equipment (e.g., refuge appliances and induction lights)

2 Firefighting water supply

3 Facilities necessary for firefighting activities (e.g., connected water pipes, smoke evacuation equipment, and emergency power outlet equipment)

A check system for installation and maintenance

-Confirmation at fire headquarters-

At planning firefighting consent

Before installation Notification of construction commencement

Upon completion of installation Installation inspection

Maintenance control Inspection report by stakeholders

To be confirmed during the on-site inspection by fire headquarters

Fires in the past (60s-90s) and countermeasures 1

A number of fires accompanied by numerous victims occurred in large-scale attracting facilities such as hotels and department stores between the latter half of the 60s and early in the 90s.
Gradually strengthening installation standards of sprinklers and automatic fire alarms in order to take advantage of lessons learned.
The installation standards of firefighting equipment etc. were applied retroactively to existing buildings in 1974.
Fire preventive institutional systems, including the fire prevention manager system (1960) and the certificate for the fireproofing system (1981) were developed as well.

Fire Date	Fire name	Total floor area (㎡)	Death toll (persons)	Number of injured persons (persons)	Main response with consideration of fire disasters	
					1948 Fire Services Act enacted	
Feb 1958	Fire at the Tokyo Takarazuka Theater	15,764	3	25	●Establishment of fire prevention manager ●Establishment of technical standards of firefighting equipment	Jul 1960 Fire Services Act revised
Mar 1966	Fire at Fuji Hotel in Minakami-machi	7,465	30	29	●Joint fire prevention management and fire retardant regulations established ●Reinforcement of standards of automatic fire alarms [Automatic fire alarms] <Ryokan accommodations> Retroactive application to existing buildings	Jun 1968 Fire Services Act revised Mar 1969 Cabinet Order revised
Nov 1968	Fire at Ryokan Ikenobo Mangetsujo in Kobe	11,258	30	44		
May 1972	Fire at Sennichi Department Building in Osaka	25,924	118	81	●Fire protection management reinforced [Appointment of fire prevention managers] <Department stores etc.> 50 people → 30 people ●Reinforcement of installation standards of sprinklers, automatic fire alarms, etc. [SP] <Multipurpose> Judgment by purpose → Specific purpose 3,000m² [Automatic fire alarms] <Multipurpose> Judgment by purpose → 500m² (Specific purpose 300m²)	Dec 1972 Cabinet Order revised

Fires in the past (60s-90s) and countermeasures 2

Fire Date	Fire name	Total floor area (㎡)	Death toll (persons)	Number of injured persons (persons)	Main response with consideration of fire disasters	
Nov 1973	Fire at Taiyo Department Store in Kumamoto	19,074	100	124	●The installation standards of firefighting equipment etc. applied retroactively. ●Reinforcement of standards of sprinklers etc. [SP] <Department store etc.> 11th floor or more → Buildings over 11 stories ●Establishment of instructive authority concerning fire protection management	Jun 1974 Fire Services Act revised Jul 1974 Cabinet Order revised
Nov 1980	Fire at Kawaji Prince Hotel in Fujihara-machi	3,582	45	22	●Establishment of certificate for fireproofing system (operation)	
Feb 1982	Fire at Hotel New Japan in Chiyoda Ward	46,697	33	34		
Jun 1987	Fire at Shojuen in Higashimurayama	2,014	17	25	●Reinforcement of standards of sprinklers etc. [SP] <Part of social welfare facilities> 6,000m² → 1,000m²	Oct 1987 Cabinet Order revised
Mar 1990	Fire at Nagasakiya Department Store in Amagasaki	5,140	15	6	●Reinforcement of installation standards of sprinklers, etc. [SP] <Department stores etc.> 6,000m² → 3,000m²	Jun 1990 Cabinet Order revised

Recent fires and countermeasures 1

In recent years, fires accompanied by numerous victims occurred frequently in relatively small facilities, business establishments, and multipurpose buildings.

Reinforcing installation standards of sprinklers and automatic fire alarms in social welfare facilities with consideration of recent fire trends. Responding to circumstance changes and the progress of technology as well as well as measures related to the development of packaged automatic fire extinguishers, water connection type sprinklers, and measures related to wireless automatic fire alarms.

Reinforcing institutional countermeasures, such as the introduction of the fire prevention objects (2002) and the violation object announcement system (2014).

Obligatory to install and maintain fire alarms for houses (2006) based on an increase in the number of deaths due to housing fires.

➡ Reduction of fire damage realized by the accumulation of preventive administration efforts in both hardware and software.

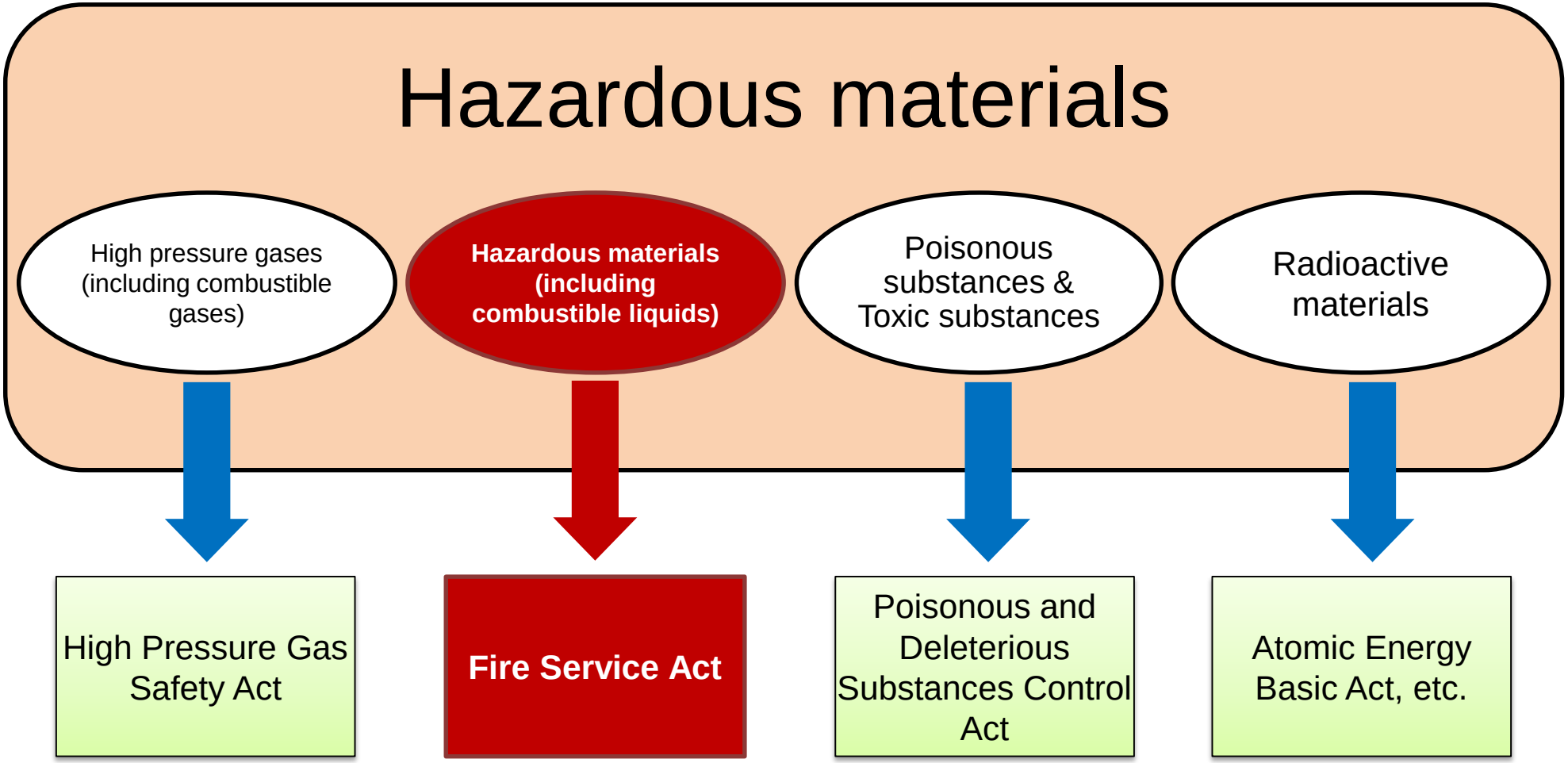
Recent fires and countermeasures 2

Fire Date	Fire name	Total floor area (㎡)	Death toll (persons)	Number of injured persons (persons)	Main response with consideration of fire disasters	
Sep 2001	Fire at a multipurpose building in Kabukicho, Shinjuku Ward	516	44	3	●Periodic inspection reporting for fireproof objects introduced ●Reinforcement of standards of automatic fire alarms [Automatic fire alarms] <Multipurpose> 500m²(specific purpose 300m²)→300m²	Apr 2002 Fire Services Act revised Aug 2002 Cabinet Order revised
Jan 2006	Fire at a group home in Omura	279	7	3	●Reinforcement of installation standards of sprinklers, automatic fire alarms, etc. [SP] <Part of social welfare facilities> 1,000m² → 275m² [Automatic fire alarms] <Part of social welfare facilities> 300m² → 0m² ●Fire protection management reinforced [Election of fire prevention managers] <Part of social welfare facilities> 30 people → 10 people	Jun 2007 Cabinet Order revised
Jan 2007	Fire at a karaoke box in Takarazuka	218	3	5	●Reinforcement of standards of automatic fire alarms [Automatic fire alarms] <Entertainment shops with individual rooms > Newly mandated	Jul 2008 Cabinet Order revised

Recent fires and countermeasures 3

Fire Date	Fire name	Total floor area (㎡)	Death toll (persons)	Number of injured persons (persons)	Main response with consideration of fire disasters	
Oct 2008	Fire at an audio video arcade in Osaka	1,318	15	10		
Mar 2009	Fire at an elderly nursing home (3 buildings) in Shibukawa	388	10	1		
May 2012	Fire at a hotel in Fukuyama	1,361	7	3	●Reinforcement of installation standards of sprinklers, automatic fire alarms, etc. [SP] <Part of social welfare facilities> 275m² → 0m² [Automatic fire alarms] <Ryokan accommodations> 300m² → 0m² ●Mandatory installation of fire extinguishers at outdoor events that use fire equipment	Dec 2013 Cabinet Order revised
Feb 2013	Fire at a group home in Nagasaki	529	5	7		
Aug 2013	Fire at Fukuchiyama Fireworks	—	3	56		
Oct 2013	Fire at medical clinics with beds in Fukuoka	682	10	5	●Reinforcement of installation standards of sprinklers, etc. [SP] <Part of hospital facilities> 3,000m² → 0m² ●Introduction of disclosure system on violating objects (operation)	Oct 2014 Cabinet Order revised

Laws to regulate hazardous materials



Hazardous materials

Those materials listed in the Appended Table 1 of the Fire Service Act, which have the properties listed in the Nature column of said Table according to the Categories specified in said Table. (Article 2, Paragraph 7 of the Fire Service Act)

➡ Hazardous materials are classified into 6 categories I through VI according to their chemical and physical properties.

Category I (Oxidizing solids)
Category II (Combustible solids)
Category III (Spontaneously combustible substances and water-reactive substances)
Category IV (Flammable liquids)
Category V (Self-reactive substances)
Category VI (Oxidizing liquids)

To identify whether a material falls within the hazardous materials, the hazardous materials identification testing is conducted.

Hazardous materials facilities (Manufacturing facilities, etc.)

Hazardous materials of the designated quantity or a larger quantity shall not be stored or handled at facilities other than manufacturing facilities, storage facilities, or handling facilities (Article 10, Paragraph 1 of the Act).

- Permission of establishment and any changes (Article 11 of the Act)
- Technical standards for the location, structure, and equipment (Article 10, Paragraph 4 & Article 12 of the Act)
- Technical standards for storage and handling (Article 10, Paragraph 3 of the Act)
- Designation of hazardous materials supervisor (Article 13 of the Act), etc.
- Authorization of fire prevention rules (Article 14-2 of the Act), etc.

Exceptions
Temporary storage or handling for not more than 10 days with the approval of the competent fire chief or fire station chief with jurisdiction (saving clause in Article 10)

Classification hazardous materials facilities

Those facilities capable of storing or handling hazardous materials of the designated quantity or a larger quantity

Manufacturing facilities

The places approved by the head of the municipality for handling of hazardous materials of more than the designated quantities in order to manufacture the hazardous materials.

Storage facilities

The places approved by the head of the municipality in order to store hazardous materials of the designated quantity or a larger quantity

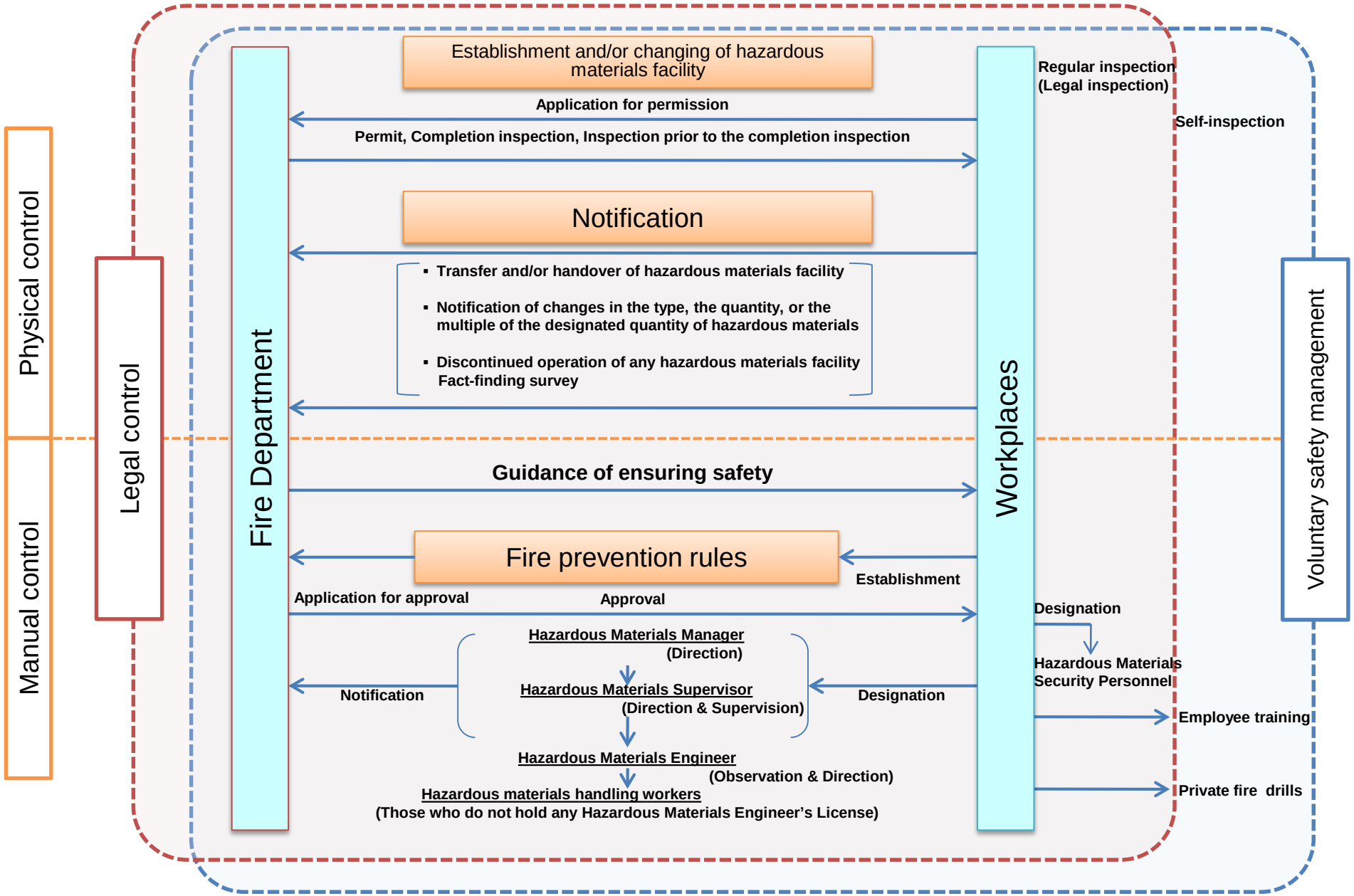
- Underground storage tank facilities
- Simple storage tank facilities
- Mobile storage tank facilities
- Indoor storage tank facilities
- Outdoor storage tank facilities
- Indoor storage facilities
- Outdoor storage facilities

Handling facilities

The places to handle hazardous materials for any purposes other than manufacturing of hazardous materials

- Filling stations
- Sales stations
- Conveyance stations
- General handling facilities

Hazardous materials control



(Source) 2008 Tokyo Fire Department Informational Book published by Tokyo Fire Department

History of the Hazardous materials countermeasures 1

Over the course of rapid economic growth and energy transformation, from 1955-1969, huge petroleum industrial complexes were built one after another in coastal areas in various parts of Japan, and the consumption of petroleum and the number of facilities handling hazardous materials rapidly increased. With this increase, fires or explosions with many fatalities at industrial facilities also occurred frequently.

Triggered by this series of accidents in 1964: the propylene oxide explosion at Showa Denko KK Kawasaki Plant (with 15 fatalities), the crude oil tank burning accident at Niigata Refinery, Showa Shell Sekiyu K.K. due to the 1964 Niigata earthquake, and the organic peroxide explosion at the Katsushima warehouse of Takaragumi Co., Ltd. (with 19 fallen firefighters or volunteer firefighters), hazardous materials regulations were significantly revised and strengthened.

History of the Hazardous materials countermeasures 2

In addition, triggered by the large-scale heavy oil spillage accident at Mizushima Refinery, Mitsubishi Oil Co., Ltd. in Kurashiki in 1974, the Act on the Prevention of Disaster in Petroleum Industrial Complexes and Other Petroleum Facilities was enacted, the Hazardous Materials Safety Techniques Association was set up in 1976, and the structural standards for outdoor storage tanks, etc. were significantly strengthened in 1977. In this way, regulations for facilities handling hazardous materials came to be drastically revised or strengthened.

➡ At facilities which handle hazardous materials, because of the effects of the regulations being strengthened in series from 1965-1978 and promotion of the businesses' own safety measures, based on the stable development of the Japanese economy, the number of accidents steadily decreased from around 1975-1990.

➡ But !, A state of deterioration due to old age or long use.

Implementation and Support of Cause Investigation of Fires and Hazardous Materials Spill Accidents

—For recurrence prevention of fires and accidents and promotion of preventive measures

1 Investigation on the causes of fires and hazardous materials spill accidents

Researchers and investigators with expertise conducted a fire cause investigation in cooperation with the fire department headquarters by the order of the Director General of the Fire and Disaster Management Agency. Large-scale experiments for verification are carried out according to each case.

Fire at a large-scale warehouse in Saitama Prefecture (February 2017)

Fire at a refinery fire in Wakayama Prefecture (January 2017)

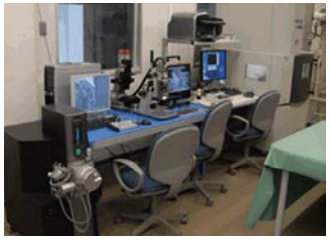
Status of verification experiment of a fire at a cheap loading house in Kawasaki
(Large-scale fire experiment building, Fire Fighting Research Center)

2 Assistance for identification and judgment

Officials of the National Research Institute of Fire and Disaster with expertise supports the fire investigation of fire department headquarters at the request of the fire department headquarters.

Dispatching of investigators to fire sites and conducting identification and judgment at the laboratory of the National Research Institute of Fire and Disaster.

Vehicle identification



Laboratory (Fire and Disaster Research Center)

Changes surrounding Firefight

Population decline and declining birthrate and aging

With the trend of recent years unchanged, the population decline, the declining birthrate, and aging population are expected to progress rapidly.

➡ Measures to prepare for an increase in the number of supporters are required along with countermeasures against a reduction in the number of people responsible for disaster prevention measures.

Depopulation, hollowing out of rural areas and aging and population concentration in urban areas

Population declines, aging, depopulation have progressed rapidly in rural areas while urban population will increase. Therefore, each region has different problems.

➡ Measures are required according to each local condition.

Thank you for your attention



Fire and Disaster Management Agency FDMA
http://www.fdma.go.jp/neuter/about/pdf/en/2015/all.pdf

Fire and Disaster Management College, FDMA
http://fdmc.fdma.go.jp/procedures/docs/7-1.pdf

National Research Institute of Fire and Disaster, FDMA
http://nrifd.fdma.go.jp/about/summary/files/summary201607.pdf