

Prevent fires and industrial disasters recently

多様化する火災・企業災害を未然に防ぐ



Investigate and identify the causes of fires and accidents, and promote fire prevention measures.
火災・事故の原因等を調査・検証し、防火安全対策を推進する

In recent years, new forms of facilities have appeared, such as small scale welfare facilities that include group homes, large-scale distribution warehouses, and vacation rental houses. In addition, more robust measures for earthquakes in petroleum complexes and hazardous materials facilities are also demanded. FDMA investigates and identifies the causes and factors that expand the damage of these complicated and diversified fires and accidents, and promotes improvement of both hard and soft fire prevention measures.

近年、グループホームなどの小規模社会福祉施設や大規模物流倉庫、民泊などの新しい形態の施設が出てきており、新たな火災予防対策の検討が必要となっています。また、石油コンビナートや危険物施設における震災対策の推進も求められています。消防庁では、複雑・多様化する火災・事故に対し、原因や被害拡大要因などを調査・検証し、ハード・ソフト両面からの防火安全対策の強化を図っています。



Prevent fires of greater complexity

多様化する火災の予防

FDMA investigated the cause, especially of large scale fires and has strived to enhance fire prevention administrations by revising fire protection laws. This effort has worked to stop the fire incidents in large buildings which cause a number of deaths, such as the Sennichi Department Store Fire (118 deaths) or the Hotel New Japan Fire (33 deaths), from occurring in recent years.

On the other hand, new forms of facilities have appeared in recent years, such as small scale welfare facilities including group homes, large-scale distribution warehouses, and vacation rental homes. So there is a need for consideration of new fire prevention measures. It is also necessary to prevent accidents related to fire prevention equipment, and appropriately address issues such as environmental regulations of fire-extinguishing chemicals.

FDMA responds flexibly to changes occurring in social structure and the usage of buildings, and carries out necessary revisions of fire protection laws and promotes training for business operators.

消防庁では、火災が発生するたびに原因を追求し、消防法令の改正を重ね、火災予防行政の強化を図ってきました。その結果、千日デパートビル火災（死者118人）やホテルニュージャパン火災（死者33人）のような、大規模な建物で多数の死者が発生する火災は現在では見られなくなっています。一方、近年は、グループホームなどの小規模社会福祉施設や大規模物流倉庫、民泊などの

A series of large-scale warehouse fires occurred such as: the fire in Miyoshi-cho, Saitama Prefecture in February 2017, the fire in Iwanuma City, Miyagi Prefecture in April 2020, and the fire in Konohana-ku, Osaka City in November 2021. In response to this, in order to thoroughly implement fire prevention and safety measures for large-scale warehouses, we are promoting fire drills by business operators, as well as promoting identification of fire risks.

平成29年2月埼玉玉三町倉庫火災、令和2年4月宮城県岩沼市倉庫火災、令和3年11月大阪市此花区倉庫火災といった大規模倉庫火災が相次いで発生。これを受け、大規模倉庫の防火安全対策の徹底を図るため、事業者による効果的な消防訓練の実施や火災危険性の把握等を推進

A warehouse fire in Konohana Ward, Osaka City in 2021 (courtesy of Osaka City Fire Bureau)

Large-scale fires occurred in areas with a concentration of old wooden buildings, such as the large-scale fire in Itoigawa City in December 2016 and the fire in Kitakyushu City Tanga District in 2022 in April and August. As a result, we are working with local community to create priority fire prevention areas and promote focused guidance for places that are high risk.

平成28年12月の糸魚川市大規模火災、令和4年4月及び8月の北九州市目黒地区火災など、古い木造建築物が密集する地域で大規模な火災が発生したことから、火災発生時に大規模な火災につながる危険性の高い地域を「重点防火指導対象地域」と定め、地域関係者と連携した重点的な防火指導を推進

A large city fire in Itoigawa City in 2016 (Provided by Itoigawa City Fire Department) 平成28年糸魚川市大規模火災 (糸魚川市消防局提供)



becoming diversified

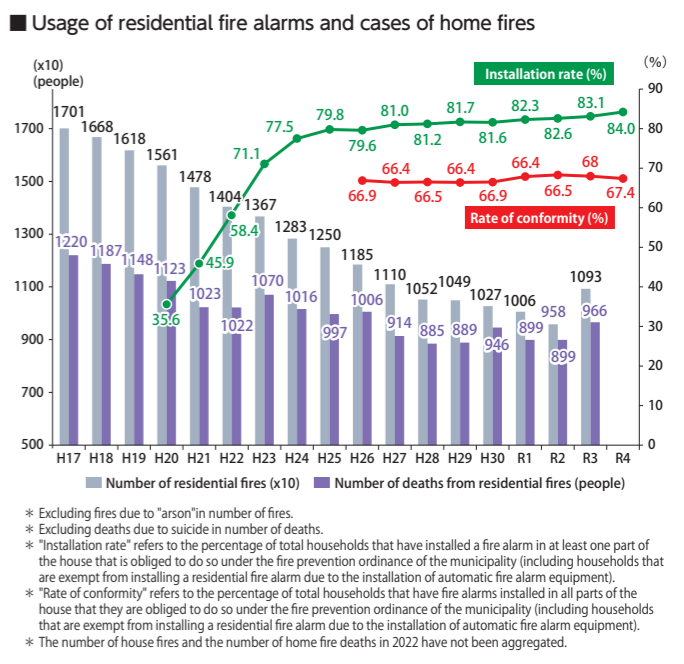
Promotion of residential fire prevention measures

住宅防火対策の推進

The annual number of fatalities due to residential fires in Japan is close to a thousand. Elderly people account for nearly 70% of the fatalities—the main cause is failure to escape the fires. The installation rate of residential fire alarms stopped at approximately 84%, so further promotion is vital. In addition, due to concerns about battery failure or deterioration of existing fire alarms that have been installed for more than 10 years, we are calling for the necessity of maintenance and management, such as regular inspections, and promoting the replacement of residential fire alarms that have been installed for more than 10 years. FDMA promotes public awareness through fire prevention campaigns and symposiums for promotion of residential fire prevention measures in cooperation with Fire Service Institutions, Volunteer Fire Corps, Female (Women's) Fire Prevention Clubs, and voluntary disaster prevention organizations in order to reduce the number of deaths caused by residential fires as much as possible.

住宅火災の死者は毎年1,000人近く発生していますが、そのうち高齢者が約7割を占めており、特に逃げ遅れによる死者が多い状況です。住宅火災の早期発見に有効である住宅用火災警報器は、全ての住宅に設置が義務付けられていますが、その設置率は約84%となっており、さらなる設置の促進を図っています。また、設置から10年以上を経過した住宅用火災警報器の電池切れや故障が懸念されることから、定期的な点検など維持管理の必要性を呼びかけるとともに、設置から10年以上を経過した住宅用火災警報器の取替えを推進しています。

消防庁では、火災予防運動や住宅防火・防災キャンペーン等を通じ、消防本部、女性（婦人）防火クラブ及び自主防災組織等と協力して、住宅火災による死者が一人でも少なくなるよう、住宅防火対策を推進してまいります。



Investigations into the causes of fires and leakage of hazardous materials, and promotion of prevention of fire caused by ignition of products

火災原因・流出事故原因調査、製品火災対策の推進

When a fire occurs, the fire service organizations investigate the causes, and use the results for enhancing fire prevention measures and firefighting activities. When a large-scale or unprecedented fire occurs, FDMA investigates the causes through the FDMA commissioner in order to assist the investigation activities of the fire service organizations. Also, when the leakage of hazardous materials occurs, a municipal mayor, who holds authority over the hazardous materials facility, investigates the causes. For an unprecedented leakage accident, the FDMA commissioner investigates the causes at the mayor's request. In addition, the causes of recent fires have been significantly diversified, and in some cases, household products like electrical appliances and burning appliances cause fires. To protect the security and safety of consumers, FDMA prepares a system to gather information on fires caused by the ignition of products and publishes the fire information to alert the public, and at the same time, shares the information with the Consumer Affairs Agency and other related agencies, in order to enhance the measures against fires caused by ignition of products.

火災が発生した場合、消防機関は火災の原因調査を行い、調査結果から得られた教訓を防火安全対策や消防活動などに活用しています。消防庁では、大規模な火災や特殊な火災等が発生した場合、消防庁長官が主導して、管轄の消防本部と連携した火災原因調査を行います。また、火災につながる恐れのある大規模な危険物の流出事故や危険物施設の破損等が発生した場合、市町村長等からの求めに応じて消防

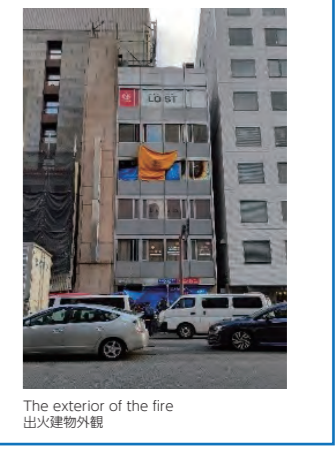
消防長官が主導して管轄の消防本部と連携した事故の原因調査を行います。また、電気用品や燃焼機器等、生活に身近な製品が発火源となる火災も多く発生していることから、消防庁では、製品の不具合により発生したとされる火災の情報を公表し、国民に広く注意喚起を図るとともに、消費者庁や経済産業省等の関係省庁との情報共有体制を確保するなど、国民の安心・安全の確保のため、製品火災対策の取組を強化しています。

TOPICS 4 Response to fire in Kita Ward, Osaka City and future.

大阪市北区ビル火災に係る対応

On December 17 2021, a building fire causing serious personal injuries 27 people died (including one suspect) occurred in Kita Ward, Osaka City. The cause of the fire was determined to be gasoline and a lighter that the suspect used. In response to this fire, the FDMA held a panel of experts with the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) to discuss fire prevention and evacuation measures in buildings with only one direct stairway, and compiled a report. Based on the results, we made the "Guidelines for Evacuation in Buildings with One Direct Stairway" and reviewed on-site inspection manuals, to further promote thorough correction of violations of fire defense laws and regulations. We also took measures such as re-notifying the fire brigade to ensure that there is proper customer identification at gas stations through patrols and on-site inspections.

令和3年12月17日に大阪市北区において、死者27人（容疑者1人含む）、負傷者1人という極めて重大な人的被害を伴うビル火災が発生しました。出火原因は、容疑者がガソリンを散布し、ライターを用いて放火したものと判明しました。この火災を受け、消防庁では国土交通省と合同で開催した有識者検討会において、直通階段が一つしか設けられていない建築物における防火・避難対策等について検討を行い、報告書がとりまとめられました。この報告書を踏まえ、「直通階段が一つの建築物向けの避難行動に関するガイドライン」の策定や、立入検査に関するマニュアルなどの見直しを行い、消防法令違反の是正の徹底等について、より一層の推進を図りました。また、消防隊の見回りや立入検査の機会を通じてガソリンスタンドにおける顧客の本人確認等の適正な運用の徹底を図るよう再度通知するなどの対応を行いました。





Enhancement of disaster prevention measures for petroleum complexes, etc.

石油コンビナート等の防災体制の強化

To ensure the safety of petroleum complexes that store vast quantities of hazardous materials and high pressure flammable gases, they are controlled in accordance with the Fire Service Act, the High Pressure Gas Safety Act, and also the Law on the Prevention of Disasters in Petroleum Industrial Complexes and Other Petroleum Facilities.

In petroleum complexes, large-scale explosions or fires are liable to spread flames outside the factory sites, and have serious impacts on the security and safety of the public. In the Great East Japan Earthquake, large-scale fires at petroleum complexes and other facilities occurred, causing huge damages.

To minimize disasters at petroleum complexes, with the object of preventing expansion of disasters and secondary disasters, as well as of ensuring early suppression, FDMA instructs the business operators of petroleum complexes to share the information about the complex with the fire service organizations in advance, and also to make sure of reporting to the fire service organizations at the time of fire, explosion, and leakage. Furthermore, FDMA requires the operators to maintain and manage the facilities properly, and allocate and maintain disaster prevention equipment, in order to enhance the disaster prevention systems at the petroleum complexes, etc.

危険物や高圧ガスなどの可燃性物質が大量に集積する石油コンビナートでは、消防法、高圧ガス保安法などとともに石油コンビナート等災害防止法により、様々な保安上の対策が行われています。

石油コンビナートでは、大規模な爆発、火災の延焼等により、工場の敷地外にまで影響が及ぶなど、国民の安全・安心に大きな影響を及ぼす恐れがあります。東日本大震災では、石油コンビナート等で大規模な火災が発生し、甚大な被害が生じました。

消防庁では、石油コンビナート災害を防止できるよう、災害の拡大防止、早期鎮圧、二次

災害防止等の観点から、石油コンビナート内の事業者に対し、災害時に消防機関等へ情報提供を行う体制を整備させるとともに、火災、爆発、漏えい等が発生した際の消防機関への迅速な通報の徹底、さらには施設の適切な維持管理、防災資機材の配備・維持管理などの徹底を通じて、石油コンビナート等の防災体制の強化を図っています。



Facilities including oil refineries and petrochemical industry
石油精製業や石油化学工業などの施設



Fire at a petroleum complex (Great East Japan Earthquake)
石油コンビナート火災 (東日本大震災)



Firefighting at a petroleum complex
石油コンビナート火災における消火活動



Rapid Reaction Force for Energy and Industrial Infrastructure Disasters (Dragon Hyper Command Unit)
エネルギー・産業基盤災害即応部隊 (ドラゴンハイパー・コマンドユニット)

Preparing for nuclear disasters

原子力災害への備え

Based on the lessons learned from TEPCO's Fukushima Daiichi nuclear disaster, the Act on Special Measures Concerning Nuclear Emergency Preparedness was revised, and other nuclear disaster prevention measures have been thoroughly reviewed.

Based on the experience of the firefighting activities at the Fukushima Daiichi power plant and the current technical progress, FDMA has revised the firefighting activity procedures to ensure that the fire brigade members can safely and effectively perform firefighting activities. It is a part of FDMA support for the fire service organization's operation at the nuclear power facilities.

In addition, in order to improve the response to accidents related to radioactive substances, FDMA has deployed personal alarm dosimeters and other equipment for radioactive substance accidents to fire service organizations, and also is creating a specialist course at the Fire and Disaster Management College for nuclear disaster prevention training.

東京電力福島第一原子力発電所で発生した事故の教訓を踏まえ、原子力災害対策特別措置法が改正されるなど、原子力防災対策の抜本的な見直しが行われています。

消防庁では、福島原発事故等における消防活動事例や近年の技術的進展を踏まえ、事故等の発生時に消防隊員の安全を確保しながら効果的な消防活動が展開できるよう、消防活動マニュアルを見直すなど、消防機関による原子力施設等における活動対策に関する支援等を行っています。

さらに、放射性物質の事故等への対応力を強化するため、個人警報線量計などの放射性物質事故対応資機材を消防本部へ配備するほか、消防職員に対する原子力防災研修として消防大学に専門コースを設けるなど、消防機関の消防活動能力の向上に取り組んでいます。



Nuclear facility disaster response training
原子力施設災害対応訓練

Safety of hazardous materials facilities

危険物の安全確保

Accident prevention measures in hazardous materials facilities

危険物施設における事故防止対策

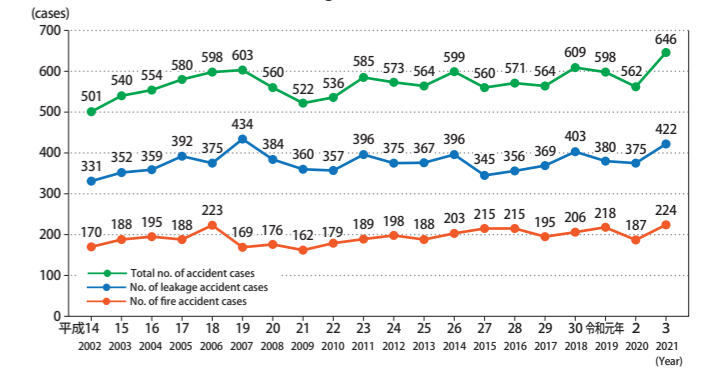
Facilities with hazardous materials such as highly flammable gasoline and diesel oil operate in various forms all over the country, ranging from industrial facilities including chemical plants and petroleum tanks, to more familiar facilities such as gas stations. If accidents such as fire and leakage occur in these facilities, the security and safety of people are seriously affected.

FDMA has stepped up the responses measures to incidents in hazardous materials facilities that occur through a variety of causes. Such measures include inspection methods that use new technology to prevent incidents which occur due to the aging of facilities. Also FDMA has enhanced earthquake measures, along with promoting accident prevention countermeasures where the national government, local governments, fire service organizations, and business operators work closely together.

火災危険性の高いガソリンや軽油などの危険物を取り扱う危険物施設は、化学プラントや石油タンクなどの産業施設から、ガソリンスタンドのような身近なもので、様々な形で全国に設置されています。ひとたびこれらの施設で火災・流出などの事故が発生すると、国民の安全・安心に大きな影響を与えることとなります。

消防庁では、危険物施設の経年変化による事故を防止するための新しい技術を用いた点検方法等の検討等、様々な要因で発生する危険物施設における事故への対応や、地震や風水害等の自然災害対策の推進に取り組むとともに、国、地方公共団体、消防機関、事業者等、関係者が一体となった事故防止対策を推進しています。

Trends in number of fire and leakage accidents in hazardous materials facilities



(Note) In order to identify annual trends accident cases, only the number of accidents caused by earthquakes with a seismic intensity higher than 6 Lower (or seismic intensity higher than 6 if before September, 1996) are shown.



Leakage of hazardous materials from an outside storage tank - In the Great East Japan Earthquake (courtesy of Sendai City Fire Bureau)
屋外タンク貯蔵所からの危険物が流出 / 東日本大震災 (仙台市消防局提供)

Safety measures in response to social needs

社会ニーズに応じた危険物の安全対策

In recent years, the number of accidents that pertain to hazardous materials has been increasing such as accidents caused by corrosion and deterioration at aged hazardous materials facilities in Japan.

On the other hand, with the advancement of science and technology and the industrial economy, hazardous materials are used for various purposes in the daily lives of people, and it is necessary to promote safety measures for hazardous materials in order to ensure the convenience and safety of the people according to the needs of society.

FDMA is studying safety measures such as when storing large amounts of lithium-ion batteries. We are also working to identify the dangers of new substances at an early stage, and to investigate and research "smart security" so that we can implement effective preventive maintenance at hazardous materials facilities using digital technologies such as drones, IoT, and AI in response to recent technological innovation and rapid progress in digitalization.

我が国の危険物施設は高経年化が進み、腐食・劣化等を原因とする事故件数が増加するなど、近年、危険物等に係る事故は高い水準で推移しています。

一方で、科学技術や産業経済の進展に伴い、危険物は国民生活の中で様々な用途に用いられており、社会のニーズに応じて国民の利便性と安全性を確保するため、危険物の安全対策を進める必要があります。

消防庁では、リチウムイオン蓄電池を大量に貯蔵する場合等の安全対策について検討を進めているほか、新たな物質の危険性の早期把握や、昨今の技術革新やデジタル化の急速な進展に伴うドローンやIoT、AIなどのデジタル技術を駆使した危険物施設における効果的な予防保全を行う「スマート保安化」の調査・検討等に取り組んでいます。



Trial testing oil tank inspection by drones
(Tomakomai-Tobu National Petroleum Stockpiling Base)
石油タンクのドローン点検に係る実証実験 (苫小牧東部国家石油備蓄基地において)



Test extinguishing of a lithium-ion storage battery using a sprinkler system
スプリンクラー設備によるリチウムイオン蓄電池の消火実験