

# 2019 Annual Report

Occupational Safety and Health Administration  
Ministry of Labor, Taiwan, R.O.C.





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## Preface by the Director-General

### Ensuring the health and safety of all workers is our top priority

Following its establishment in 2014, in 2019 the Occupational Safety and Health Administration (OSHA) of the Ministry of Labor (MOL) entered its fifth year. Given changes in industry and society, such as aging of the population and low birthrates, a steady increase in the number of elderly workers, and the rise of new economic platforms and operating models, issues related to protection of workers' rights have drawn a great deal of attention in society. Protecting the safety and health of workers in various industries and ensuring an adequate supply of healthy labor in the workplace are currently major challenges for OSHA.

To promote work environments that are safe and healthy, OSHA adopted the three-year "330" Occupational Accident Reduction Plan (2018-2020). In 2019 OSHA promoted the following important programs and accident prevention measures:

1. Inspections: OSHA promoted measures for optimization of inspections of working conditions and held a government integrity forum to upgrade the quality and credibility of inspections.
2. Occupational safety: OSHA promoted the "Taiwan Occupational Safety and Health Card" and upgraded accident-prevention capacity for workers in the construction industry. Also, to address the rise of new economic platforms, OSHA issued the "Directions on Safety and Health of Food Delivery Operation" to protect the safety and health of food delivery

personnel. Also, to ensure the safety of offshore wind farm operations, OSHA set up an oversight and inspection committee, and dispatched staff to receive training from the Global Wind Organization.

3. Occupational hygiene and health: By restructuring its organization to establish the "Occupational Hygiene and Health Division," OSHA upgraded the protection of occupational hygiene and workers' physical and mental health. OSHA also launched the "Subsidy Program for On-Site Health Services in Small and Medium Sized Enterprises" to assist SMEs implement measures to protect the health of workers.
4. Diagnosis, compensation, and rehabilitation services for workers who are injured or become sick: OSHA announced amendments to guidelines for determination of occupational diseases caused by 10 biological and eight chemical hazards for reference by Centers for Occupational Disease and Injury Services, medical institutions, and the Competent Authority for labor affairs. OSHA also announced amendments to the "Regulations of Allowance and Approbated Grant for Workers with Occupational Accidents" to broaden the qualifications for applicants for family subsidies. Moreover, OSHA actively participated in legislative work for the "Act for Protecting Worker of Occupational Accidents" in order to construct a comprehensive occupational accident prevention, compensation, and rehabilitation system in Taiwan.
5. International cooperation: OSHA signed a Memorandum of Understanding with the UK's Health and Safety Executive (HSE) on information exchange and cooperation in workplace safety and health, establishing partnership relations and a channel for communication and consultations. OSHA also continued contacts and cooperation with well-known organizations including the US OSHA, Safe Work Australia, EU-OSHA, and Korea's KOSHA.

In 2019, under the Labor Insurance program the accident rate was 2.496 per 1000 workers, a historical low. But compared to developed countries like the UK, US, and Japan, there is still room for improvement. The government has only limited manpower and resources. In order to comprehensively improve the work environment for workers and promote their health and safety, the design and promotion of government systems, the creation and cultivation of a culture of labor safety, and the commitment to and implementation of industrial sustainable safety are all critical. OSHA will continue to work with industry, academia, and government agencies at home and abroad to make it possible for all workers to work in decent, safe, and healthy environments.

Director General



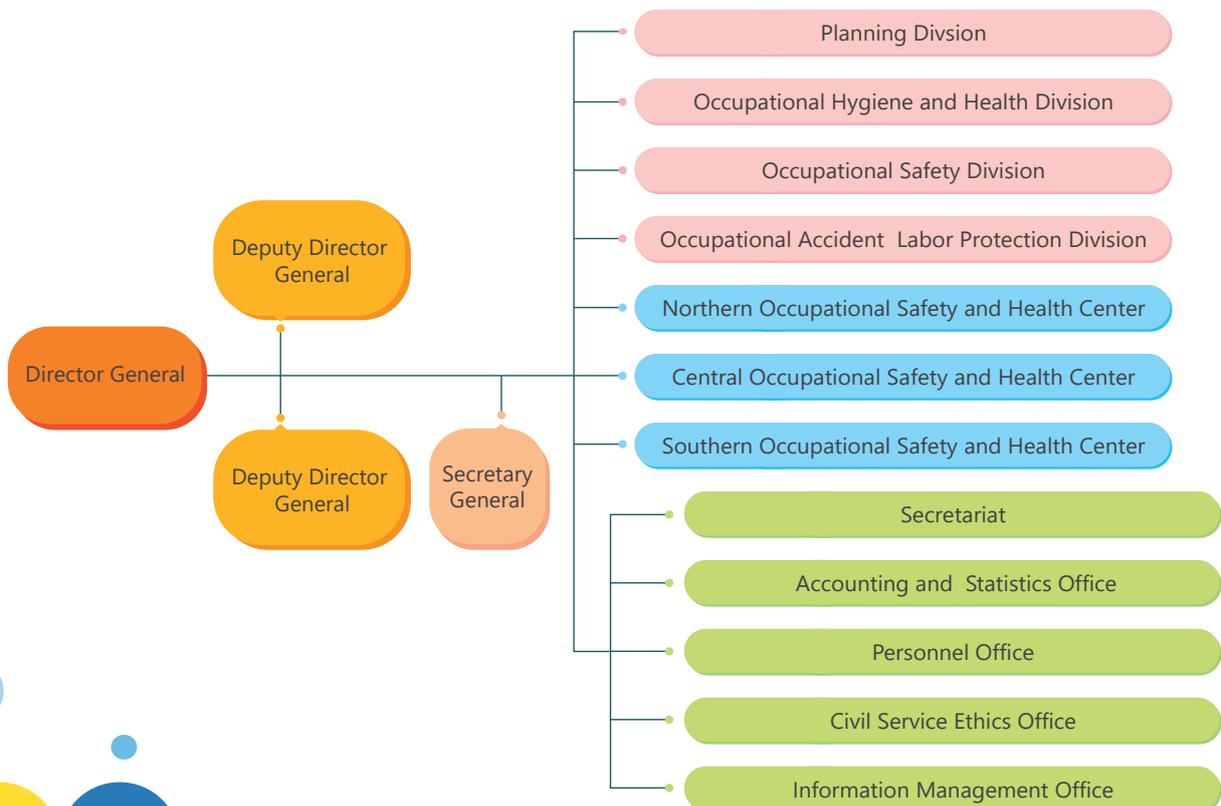
OSHA, MOL, Republic of China (Taiwan)



## Organization and Services of OSHA

Given that countries should take International Labour Organization (ILO) conventions into account, building on the "Promotional Framework for Occupational Safety and Health Convention" (ILO No.187) adopted by the ILO in 2006, the Occupational Safety and Health Administration (OSHA) has taken pro-active steps to define a national occupational safety and health (OSH) policy, to construct a national OSH system of laws, regulations, and enforcement, and to implement national OSH programs. In this way OSHA (1) has given shape to an OSH culture based on the person which emphasizes workers' safety and health and (2) has steadily built safer and healthier work environments. The Ministry of Labor established OSHA on February 17, 2014.

As the nature of work and forms of labor have changed, society has paid increasing attention to occupational hazard exposure and the protection of workers' physical and mental health. To demonstrate the importance placed by the government on workplace hygiene and the health of workers, on October 4 of 2019 the Ministry of Labor (MOL) restructured OSHA to add a new "Occupational Hygiene and Health Division." The current organizational framework is as follows: There is one Director General in overall charge, with two Deputy Directors General and one Secretary General subordinate to the Director General. There are also four functional divisions, three policy implementing centers, and five supporting offices, based on operational needs. The organizational chart is shown below.





## Vision and Mission

In 1966 the United Nations adopted the International Covenant on Economic, Social, and Cultural Rights, which states that every individual is entitled to a safe and healthy working environment. Taiwan signed the Covenant in 2009 and has been promoting its implementation since then. Also, Taiwan is facing the problems of becoming an aged society and having a low birthrate. In order to put into practice the vision of “providing every worker with a safe, healthy, and decent workplace” and “building a sound system of diagnosis, compensation, and rehabilitation for occupational accidents and illness,” and to comply with the MOL’s policies of “safe work,” “safe workplace,” and “safe labor,” OSHA has laid out the following policy objectives:

1. Continue to reduce the rate of occupational accidents and illness, ensure respect for basic labor rights.
2. Assist industry to manage risks of occupational hazards, promote economic development.
3. Ensure a decent work environment that protects labor rights as well as physical and mental health, upgrade national competitiveness.
4. Build a sound diagnosis, compensation, and rehabilitation system for victims of occupational accidents and illness, protect the vulnerable and ensure respect for labor rights.
5. Strengthen occupational safety and health and build a basic infrastructure for rehabilitation of injured or sick workers in line with international standards.

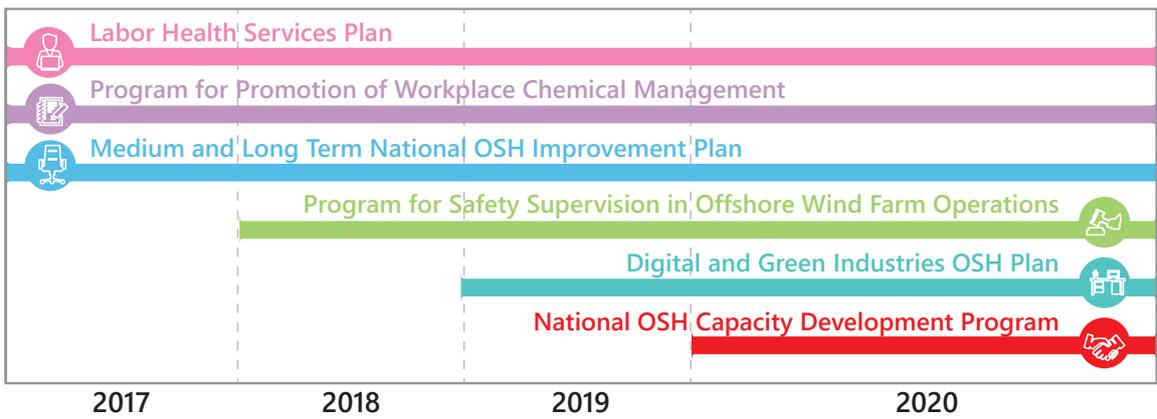
# Overview of the Development of Occupational Safety and Health

With reference to international trends in occupational safety and health (OSH) and to the situation in industries in Taiwan, in 2013 Taiwan announced amendments to the “Occupational Safety and Health Act.” These expanded the scope of the application of the Act; established source management for machinery, equipment, and chemicals; improved the occupational diseases prevention system; strengthened protection of workers’ physical and mental health; and improved protections for female workers and young workers under 18 years of age. In order to supervise the implementation of worker safety and health by enterprises and build safer and healthier work environments, the OSHA, after being founded in 2014, issued the “Medium and Long Term National OSH Improvement Plan.” This was followed in 2018 by the “Program for Safety Supervision in Offshore Wind Farm Operations” and the “Medium and Long Term Smart Industry Safety and Health Program.” In addition, in order to better use information technology to teach workers about accident prevention, in 2019 OSHA began planning the “National OSH Capacity Development Program.” OSHA will build a multilingual OSH knowledge cloud using AI (artificial intelligence) and Big Data, in order to comprehensively cultivate a culture of “safe labor and healthy workplaces.”

To pro-actively promote the MOL’s policy of “safe labor,” continue to reduce the incidence of occupational accidents, and guarantee basic workers’ rights, in 2017 OSHA produced the “‘330’ Occupational Accident Reduction Plan.” The goal was to reduce the incidence of occupational accidents covered by Labor Insurance per 1000 workers by 30% over a three-year period (2018-2020) as compared to the average rate of 3.199 from 2014-2016 (a reduction of 10% per year). There are six concrete implementation strategies, including strengthening the effectiveness of supervision and inspections, strengthening guided improvement and self-management mechanisms, offering education and training in accident reduction, expanding information dissemination, integrating cross-institutional resources, and improving the regulatory system. In 2019, thanks to the efforts of a wide range of people, the rate of occupational accident payments under Labor Insurance per 1000 workers fell to 2.496, a reduction of 22% compared to the base value of 3.199. (This amounts to a reduction of about 12,968 accidents in total over two years.) Taiwan thus reached the “330” strategic target of reducing accidents by 20% over two years. The trend in occupational accidents over the years is shown below:



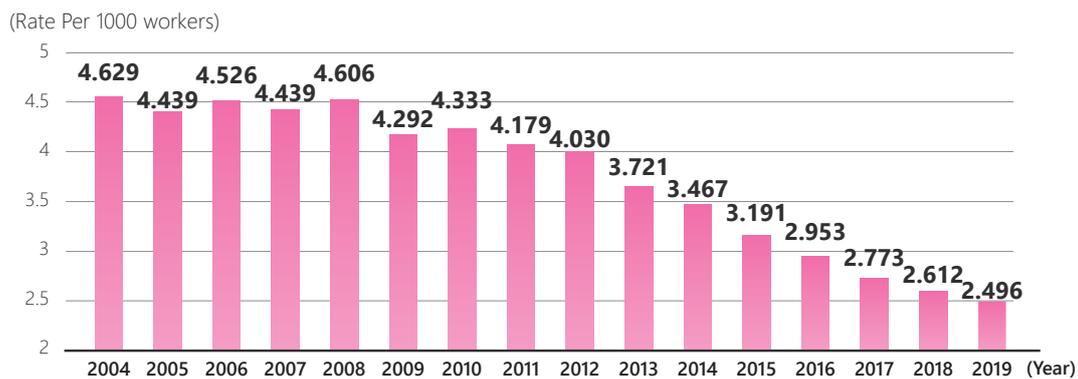
Major plans promoted by OSHA over the last four years



Major strategies for the “330 Occupational Accident Reduction Plan”



The trend in occupational accident rate per 1000 workers under Labor Insurance



# 1

# Labor Supervision and Inspections



Article 7 of the International Covenant on Social, Economic, and Cultural Rights states that everyone has the right to “just and favorable conditions of work,” with the term “conditions of work” including conditions related to remuneration and working hours, as well as a safe and healthy working environment. Labor supervision and inspection are the most effective means to ensure respect for workers’ rights and maintain a decent labor environment.

In principle, for labor inspections in Taiwan, the central government has responsibility for safety and health, while local governments handle working conditions. “Safety and health inspections” involve the operational safety of workers, minimization of exposure to hazards in workplaces, and protection of workers’ physical and mental health. “Working conditions inspections,” on the other hand, are aimed at enforcing conditions of work related to remuneration and working hours, protecting the basic working rights of workers, and improving the level of working conditions.

## 1-1 Labor Inspection Personnel

At present staffing charts for labor inspection personnel allow for 1000 such persons in Taiwan, which meets the standard set out by the International Labor Organization for the ratio of inspection personnel to laborers in industrialized countries. In 2019 there were 313 people involved in “working conditions inspections” and 591 people involved in “occupational safety and health (OSH) inspections,” for a total of 904 people (of which 67.15% were male and 32.85% female). OSHA from time to time holds conferences on working conditions and OSH matters to which it invites the Competent Authorities for labor affairs and labor inspection institutions, and also holds national work reporting conferences when appropriate to provide consistency in inspection work. Moreover, each year OSHA offers professional and on-the-job training to inspection personnel, to ensure that they can stay up-to-date with their job requirements and build up their professional capabilities.





★ Minister of Labor Hsu, Ming-chun led a team to implement labor inspection work.

## 1-2 Implementing Risk Banding Management

In 2019 OSHA classified the construction industry, the manufacturing industry, the wholesale and retail sales industry, the transport and warehousing industry, the plumbing/electrical/natural gas industry and workers without fixed employers as “industries/persons at high risk.” OSHA gave priority to focusing on accidents such as getting caught, pinned, or rolled up; getting pierced, cut, or scraped; and falling, falling from a height, and tumbling down; and adopted a risk banding management system depending on the risks in each enterprise, as follows:

- (1) For enterprises with excellent OSH performance: OSHA mainly uses visits and oversight mechanisms for businesses that practice self-regulatory management, and holds guidance, hands-on learning, and knowledge sharing activities to assist organizations with outstanding OSH records to move toward becoming “benchmark enterprises.”
- (2) For enterprises of high risks: For enterprises with a high rate of violations, high risks, and a high incidence of occupational accidents, OSHA gives priority to inspections and implements follow-up measures for improvement, to ensure compliance with laws and regulations.

- (3) For small and medium sized enterprises (SMEs): OSHA provides SMEs with assistance that includes education and training, visits, guidance, consultations, and hands-on learning. Also, through services and resources like OSH Families, promotion associations, and big factories guiding small factories, OSHA has upgraded the level of safety and health management.

Statistics show that labor inspection institutions conducted 125,755 OSH inspections, 1,083 OSH educational activities, and 5,487 guidance consultations in 2019.



# 2 Occupational Safety



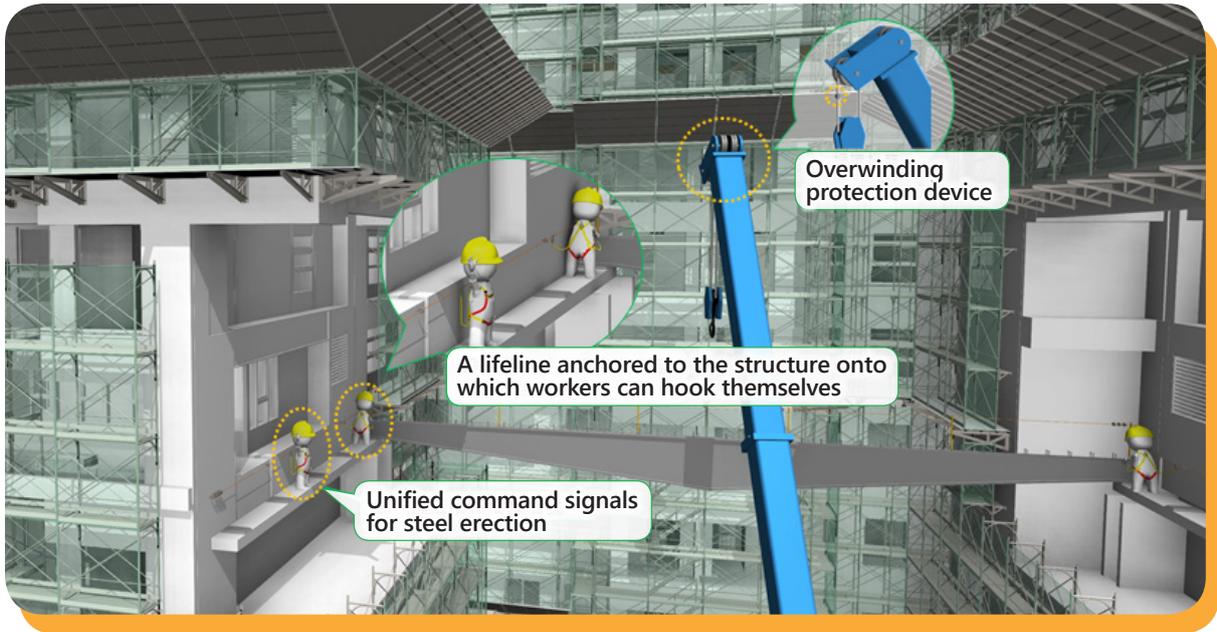
In order to prevent occupational accidents and ensure the safety of workers, in 2019 OSHA continued to undertake diversified hazard prevention measures including education, guidance, inspections, and subsidies. OSHA strengthened safety management in industries of high risks, refining safety management in the construction industry and introducing Building Information Modeling (BIM) technology into the construction risk evaluation process. OSHA helped businesses to implement the provisions of the “Occupational Safety and Health Act” and strengthened their OSH risk management mechanisms; implemented source management of machinery and equipment to eliminate risk factors right from the source; and helped small and medium sized enterprises to improve their work environments. OSHA offered on-site guidance and special-case guidance and also provided hazard prevention educational materials to strengthen workplace safety and reduce the incidence of occupational accidents.

## 2-1 Advancing Safety Management in the Construction Industry

The construction industry is an industry of high risks in which there is a high incidence of serious occupational accidents. In order to assist businesses in undertaking construction risk assessments, in 2018 OSHA issued the “Technical Guidelines of Risk Assessment in the Construction Industry.” To further improve the effectiveness of construction project risk assessments, in 2019 OSHA commissioned a specialized organization to study the use of BIM technology in construction OSH management and also introduced BIM technology into the risk assessment process for actual construction projects, to simulate and model the construction risk assessment process. As for hard-to-detect unique situations and risks in individual cases, BIM technology’s 3D visual representation can be applied. Using BIM to effectively coordinate construction safety planning can strengthen OSH management.

To promote conformance of scaffolding design and construction work at construction sites with national standards and norms, OSHA has been promoting a policy under which steel-tube scaffolding used at construction sites shall conform to national standards and policies. Besides guiding manufacturers of steel-tube scaffolding to pass the tests to get the CNS Mark, OSHA also requires labor inspection institutions to urge construction sites to use steel-tube scaffolding that conforms to the national standards.





★ Demonstration case of the introduction of BIM technology into construction project risk assessment.

## What you need to know about CNS 4750 requirements for steel-tube scaffolding

Methods for conforming to National Standards CNS 4750 requirements or above:

- ▶ Product quality conforms to National Standards CNS 4750 requirements and has been tested and found up to standards.
- ▶ CNS Mark equivalent
- ▶ CNS Mark

▲ Before steel-tube scaffolding is moved onto the construction site, there should first be verification that it conforms to requirements equivalent to National Standards CNS 4750 or above.

Testing report

Scale measurement

Sample testing

### Labeling for conformance of frame scaffolding materials to national standards

- ✘ Conformance to national standards for items 1-3
- ✘ Conformance to CNS Mark for items 1-5
- 1. Name or trademark of the manufacturer;
- 2. Year of manufacture
- 3. Special material symbol: For example, the label for frame scaffolding should have the word "frame."
- 4. CNS Mark
- 5. Approval number

★ Advocacy poster about conformance of steel-tube scaffolding to national standards and work safety.

## 2-2 Establishing Source Management for Machinery and Equipment

To ensure the safety of workers in the workplace, from 2015 through 2019 OSHA implemented the “Registration System of Safety Information for Machinery, Equipment, and Tools” for 12 designated machinery, equipment, and tools. In 2021 this will be applied to numerically controlled lathes and milling/boring machines, as well as machining centers and machining systems, requiring machinery, equipment, or tools that meet safety standards to be registered by manufacturers or importers on the Information Reporting Website and to put up the TS Safety Labels in a prominent place on the machinery, equipment, or tools. In addition, in 2018 OSHA launched the “Type Certification System” for announced machinery, equipment, and tools. With respect to domestically manufactured or imported voltage reducing devices for AC arc welding equipment, in cases in which these devices have not passed type certification conducted by an approved certification body and/or do not have Certification Marks that they have passed such type certification, the manufacturer (or importer) will not be allowed to manufacture and ship the machinery, equipment, or tools from the factory (or import it).

### Machinery, equipment, and tools included in the “Registration System of Safety Information” as of the end of 2019

Type of machinery, equipment, or tools	Year of implementation
Power driven punching-shearing machinery, Hand-feed planers, Woodworking circular saw machinery, Power-driven forklift trucks, Grinding machinery, Grinding wheels, Explosion-proof electrical equipment, Photoelectric-type safety device for power-driven punching-shearing machinery, Blade shield for hand-feed planers, Kickback prevention device and sawtooth shield for woodworking circular saw machinery	2015
Non-numerically controlled traditional lathes	2019
Non-numerically controlled traditional milling/boring machines	2019

In order to implement source safety management of the above-mentioned machinery, equipment, and tools, in 2019 OSHA conducted reviews of 7,478 registration documents submitted by 584 companies, inventoried and conducted sample testing of 1,386 designated machinery and equipment at 345 companies, conducted special-case guidance for companies 73 times, and conducted safety assessments for 141 types of machinery and equipment and their operating methods. OSHA also guided manufacturing enterprises of high risks to build automated safe production lines, and assisted enterprises of high risks, and that have

a high rate of occupational accidents and a high rate of violations, to introduce inherently safe machinery design, in order to eliminate hazard factors right from the source. Moreover, for operators of machinery or equipment, OSHA developed virtual reality (VR) instructional software for the safe operation of stamping presses, and provided this for use in future training courses, thereby strengthening awareness of on-site hazard prevention.



★ Type Verification for power driven punching-shearing machinery.



★ Virtual reality experiential activities for safe operation of punching-shearing machinery.

## 2-3 Enhancing Smart Safety Management for Industry

Taking into account trends in the development of smart technology and the problem of a declining labor force due to population aging, the government has been actively promoting a variety of programs to encourage industries to become “intelligent.” Of these programs, the main focus is on developing applications for industrial robots, including collaborative robots operating cooperatively with people. These have been widely used in industries that include semiconductors, printed circuit boards, electronics assembly, and automobiles.

To cope with the hazards that could arise from collaboration between people and robots, in 2018 OSHA announced amendments to the “Standards for Hazard Prevention of Industrial Robot,” adding a provision that employers who use collaborative robots must conform to requirements of the National Standards CNS 14490 series, the International Standards ISO

10218 series, or equivalent standards. They must also conduct and document safety assessments and writing assessment reports using relevant data. In addition, in 2018 OSHA issued the “Directions for Work Safety Assessment for Collaborative Robots” and compiled the “Reference Handbook for Reports on Work Safety Assessment for Collaborative Robots,” which set rules for the detailed content of safety assessments for the reference of enterprises in avoiding accidents like being pinned, rolled up, or struck by a robot.



★ Industrial robots in operation.

## 2-4 Implementing Stronger Measures for Safety in Offshore Wind Farms

In response to the development of the offshore wind power industry in Taiwan and the work safety hazards thereby produced, OSHA invited the Ministry of Economic Affairs, the Ministry of Transportation and Communications, offshore wind farm developers and relevant experts and scholars to found the “Interdepartmental Technical Platform for Offshore Wind Farm Operational Safety” to develop strategies for supervision and inspection of offshore wind farms in the construction and operational maintenance stages. OSHA also issued the “Safety Guidelines for Sea Operations for Offshore Wind Power” and the “Reference Handbook for Essential Data for Supervision and Inspection of Wind Power Enterprises,” to serve as the basis for offshore wind farm developers to implement work safety management and for labor inspection institutions to do supervision and inspections.

The offshore wind power industry is a new type of industry in Taiwan, and is highly susceptible to the weather, sea conditions, and the movement of platforms. In order to oversee and encourage enterprises to implement self-inspections and risk assessments, and to operate all kinds of OSH facilities for sea operations and to conduct OSH management, OSHA has drawn on the OSH supervision system used for offshore wind farms in the UK. OSHA has finalized a plan for supervision and inspection of OSH for sea operations of offshore wind



★ Members of the offshore wind farm supervision and inspection team received specialized training in “Sea Survival” from the GWO.

farms and formed a supervision and inspection team. Moreover, In 2019 OSHA arranged for members of the team to receive specialized training and receive licenses from the Global Wind Organization (GWO) in two areas: “Working at Heights” and “Sea Survival.” This training is expected to strengthen the technology and practice of safety supervision of sea operations.

The first offshore demonstration wind farm in Taiwan went into operation in November of 2019, with 22 offshore wind turbines. No major occupational accidents occurred during its construction. The Lost Time Injury Frequency (LTIF) per million man-hours worked was only 0.235, which was far below the figure of 1.52 in the “G+ 2018 incident data report” issued by the “G+ Global Offshore Wind Health and Safety Organisation.” These facts indicate excellent performance in accident prevention at the demonstration wind farm. In the future OSHA will expand this successful learning experience to ensure the safety of offshore wind farm workers.



★ Members of the offshore wind farm supervision and inspection team received specialized training in “Working at Heights” from the GWO.

## 2-5 Guiding Small and Medium Sized Enterprises to Improve Their Work Environments

The incidence of occupational accidents is quite high in small and medium sized enterprises (SMEs). In order to help SMEs improve their work environments, OSHA works with local government to promote OSH guidance at SMEs. In 2019 OSHA continued to implement the “Ministry of Labor Subsidizing Plan for Local Governments Involving in Promotion of Guiding and Improving Working Environments for Small and Medium-sized Enterprises,” subsidizing local governments to form guidance teams, which offered on-site guidance to SMEs 15,645 times and held 337 educational activities. OSHA has also guided the formation of SME OSH Families built around local enterprises with excellent OSH performance, with large factories passing along their experiences to smaller ones. In addition, OSHA promoted collective guidance, regularly inviting local SMEs to hold activities like practical lectures, observation visits and hands-on learning, and technical guidance, in order to improve the safety and health of their working environments. From 2017 through 2019 OSHA organized 46 SME OSH Families, and there has already been a clear reduction in occupational accidents in OSH Families that received guidance.

Moreover, to effectively ensure that guidance measures and instructional materials are understood in SME workplaces, OSHA provides hazard prevention educational materials, warning labels, and short instructional videos. Moreover, OSHA sends out regular monthly e-letters to SMEs to raise their safety awareness. In addition, OSHA set up a Facebook Fans Page for safety and health at SMEs which provides information on OSH activities as well as photographs, short videos, and case studies. OSHA has also taken the initiative to assist SMEs to apply for subsidies to improve their safety and health facilities, equipment, and tools.



★ On-site guidance for improvement of the work environment.

# 3 Occupational Hygiene and Health of Workers



To promote occupational hygiene and worker health, OSHA has continued to use diverse strategies including amending and issuing laws and regulations, education and guidance, subsidies, and supervision and inspections to assist employers to improve occupational hygiene, prevent occupational diseases, implement labor health inspections, and protect the physical and mental health of workers. Given the recent rise of new occupational hazards like overwork, musculoskeletal problems, and workplace illegal infringement, and to address the physical and mental health problems arising from the low birthrate and employment of the middle-aged and elderly, in 2019 OSHA established the "Occupational Hygiene and Health Division." Through a specialized division of labor, OSHA promoted management and hazard prevention for chemicals with high risks, developed tools for exposure assessments, assisted the transformation of 3D industries, expanded worker health services, and trained health services personnel while developing health services tools, thereby improving occupational hygiene and ensuring the health and rights of workers.

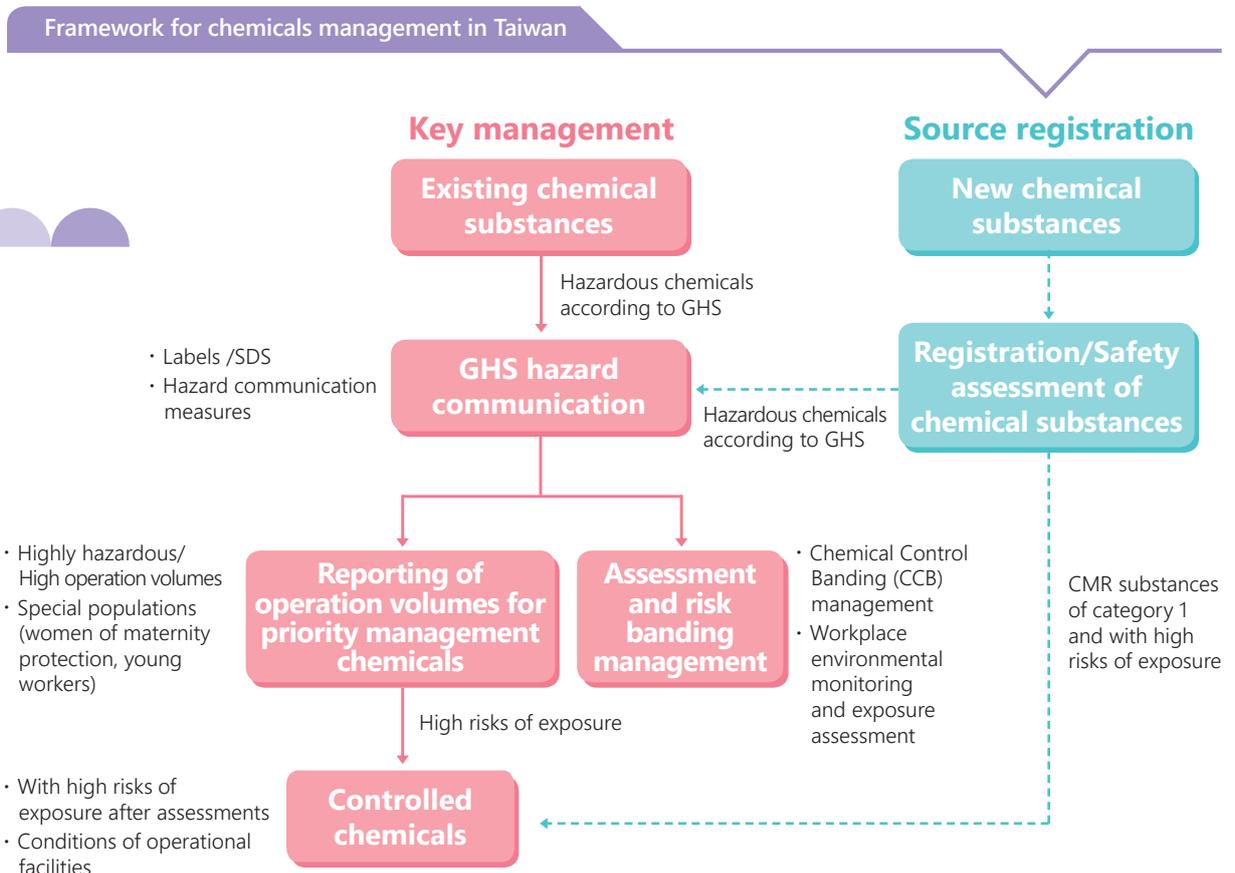
### **3-1** Managing and Preventing Hazards from Chemicals with High Risks

There are a wide variety of chemicals in workplaces and new chemicals are constantly being developed. To build an appropriate management and hazard-prevention system in order to protect the safety of workers using chemicals, and to solve the longstanding problem of lack of transparency of information about chemicals, OSHA has adopted two major strategies: "Chemicals Source Management" and "Chemical Risk Banding Management." These will help Taiwan get in line with international trends in chemicals management and improve the effectiveness of chemicals management in factories.

In order to protect workers' basic right to know, and in coordination with the "Globally Harmonized System of Classification and Labeling of Chemicals" (GHS) being promoted by the United Nations, OSHA issued the "Regulations for the Labeling and Hazard Communication of Hazardous Chemicals." These require manufacturers, importers, suppliers, and employers to provide "Safety Data Sheets" (SDS) and labels and to adopt communications measures with respect to hazardous chemicals. OSHA also continued to update the chemicals hazard information database and provided this to domestic companies for reference. In 2019 there were about one million searches of the website. In addition, in 2019 OSHA amended SDS

documents on a rolling basis, to assist upstream companies to strengthen SDS production quality. Moreover, OSHA continued to maintain the APEC “GHS Reference Exchange and Tool” (GREAT) website, establishing GHS label elements in 37 languages, and also participated in the “Chemical Dialogue” meeting, with the aims of staying abreast of international trends in chemicals management and making substantive contributions to promoting GHS and improving chemicals management among APEC members.

In order to ensure a firm grasp of operational information from factories using chemicals of high concern, OSHA established a reporting mechanism for “priority management chemicals” through regulatory announcement. At present, a total of 1,173 priority management chemicals and 23 controlled chemicals have been designated. OSHA has a total of 100,835 entries of information (including about 30,000 entries on chemicals that are carcinogenic, mutagenic, or toxic for reproduction) from over 3,491 locations using priority management or controlled chemicals. Moreover, to enhance hazard prevention and management in enterprises that use chemicals, OSHA set up the “Single Portal for Workplace Chemical Management” to integrate databases related to chemical management and monitoring of the operational environment, and through Big Data analysis, provided information for reference for policy planning for occupational disease prevention.





## 3-2 Developing Tools for Exposure Assessments

The "Occupational Safety and Health Act" stipulates that the risk levels of hazardous chemicals should be assessed based on their health hazards, distribution, and volume of use, and that banding management measures should be adopted. The "Regulations on Assessments and Control Banding Management for Hazardous Chemicals" stipulates that for exposure assessments for chemical substances for which there are "Permissible Exposure Limits" (of which there are 492 at present), besides using scientifically-based sampling and analysis methods, it is also permissible to use quantitative predictive modeling approaches for chemicals for which there are not yet measurement technologies or techniques available. Control banding measures must be taken based on the assessed risk levels in order to protect workers. Taking into account the practical needs of different scale and types of enterprises, OSHA has provided companies with diversified, advanced exposure assessment tools. Taking into account the practical needs of different scale and types of enterprises, OSHA has provided companies with diversified, advanced exposure assessment tools including the estimation and assessment of substance exposure (EASE) model. In 2019 OSHA completed trial operation and collection of feedback for a Chinese language interface for the "Targeted Risk Assessment" (TRA) tool of the "European Centre for Ecotoxicology and Toxicology of Chemicals" (ECETOC) and in 2020 will select suitable companies for priority use of the tool,

► **Underground Terror Please click**

★ Chinese language interface for the ECETOC TRA tool.

化學品名稱 (Chemical Name)	ECETOC TRA v3.0
氯仿 (Chloroform)	0.0001
二氯甲烷 (Dichloromethane)	0.0001
四氯化碳 (Carbon tetrachloride)	0.0001
三氯乙烷 (Trichloroethane)	0.0001
六氯乙烷 (Hexachloroethane)	0.0001
三氯乙烯 (Trichloroethylene)	0.0001
四氯乙烯 (Tetrachloroethylene)	0.0001
二氯乙烷 (Dichloroethane)	0.0001
三氯乙烷 (Trichloroethane)	0.0001
四氯乙烷 (Tetrachloroethane)	0.0001
五氯乙烷 (Pentachloroethane)	0.0001
六氯乙烷 (Hexachloroethane)	0.0001
七氯乙烷 (Heptachloroethane)	0.0001
八氯乙烷 (Octachloroethane)	0.0001
九氯乙烷 (Nonachloroethane)	0.0001
十氯乙烷 (Decachloroethane)	0.0001
十一氯乙烷 (Undecachloroethane)	0.0001
十二氯乙烷 (Dodecachloroethane)	0.0001
十三氯乙烷 (Tridecachloroethane)	0.0001
十四氯乙烷 (Tetradecachloroethane)	0.0001
十五氯乙烷 (Pentadecachloroethane)	0.0001
十六氯乙烷 (Hexadecachloroethane)	0.0001
十七氯乙烷 (Heptadecachloroethane)	0.0001
十八氯乙烷 (Octadecachloroethane)	0.0001
十九氯乙烷 (Nonadecachloroethane)	0.0001
二十氯乙烷 (Eicosachloroethane)	0.0001

thereby helping enterprises strengthen their assessment capabilities and implement chemical exposure hazard management.

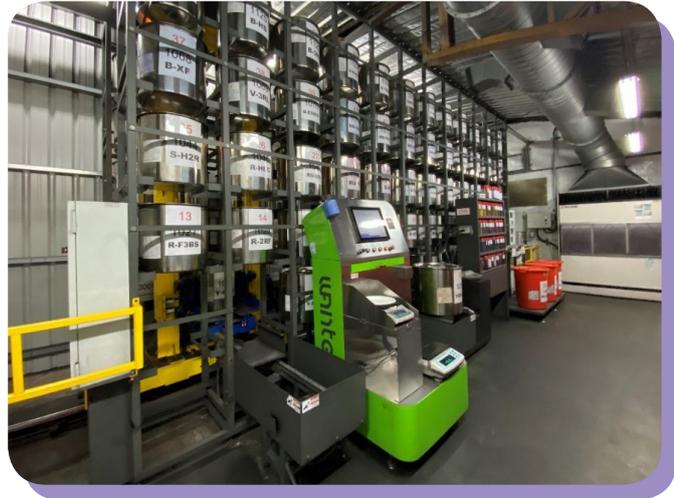
Global warming has led to the frequent occurrence of hot weather. Workers, especially those who work outdoors, such as in construction, road repair, utility pole maintenance, and agriculture, are consequently at increased risk of heat-related disorders. To raise awareness of heat stress prevention among outdoor workers, OSHA developed the "Mobile Information Network for Heat Stress Prevention in High Temperature Outdoor Operations." Enterprises and workers can at any time use mobile devices to check heat stress information, in order to evaluate and adopt relevant countermeasures and protect the health of workers doing outdoor jobs.

### 3-3 Assisting in the Transformation of "3D" Industry

Domestic industries with difficult production processes are mainly small and medium sized enterprises with 3D (Dirty, Dangerous, and Difficult) work environments characterized by high temperatures, severe noise, and serious contamination. This fact creates problems like long-term labor safety shortages, inability to pass along skills, and aging of workers. As a result, since 2014 OSHA has chosen the foundry industry, surface treatment industry, and textile printing, dyeing, and finishing industry for planned guidance and subsidies to improve their 3D working environments. Besides planning and subsidizing the installation of OSH equipment at factories, OSHA listed problems like dirtiness, slipperiness, and darkness of the work environment as items for which subsidies could be provided to optimize the work environment. Also, an inter-ministerial cooperation platform was set up to integrate the subsidies and assistance provided by other agencies to provide these three industries with maximum support in their transformation. Through cooperative work among industry,

government, and academia, including industrial investment, inter-ministerial resources integration, and technical support from scholars and experts, OSHA has assisted these industries to reach diverse goals, including improvement of the work environments, upgrading competitiveness, and encouraging people to work in them. As of the end of 2019, OSHA had provided guidance to 243 firms and subsidized 162 firms in traditional industries to improve their work environments and transform production processes, with subsidies totaling NT\$150 million, and total investment by companies of NT\$2.5 billion.

In the dye-stuff weighing work areas of the textile printing, dyeing, and finishing industry, in the past dye-stuff was carried by hand, contaminating both workers and the environment. The introduction of automatic dye-stuff weighing machines has effectively reduced the scattering of dye-stuff through the air and reduced workers' risks of hazardous chemicals exposure.



★ Photo of dyestuff weighing operations after improvements.

## 3-4 Expanding Workers' Health Services

To ensure that enterprises employ or contract with medical personnel to provide workers' health services, the "Regulations of the Labor Health Protection" stipulate that the scale of enterprises required to employ or contract with professional medical personnel will move in stages from those with over 300 workers to those with 50 workers. In addition, considering the limited resources of SMEs, in November of 2019 OSHA announced the "Subsidy Program for On-Site Health Services in Small and Medium Sized Enterprises," subsidizing part of the costs of employ or contract with health services personnel for businesses with less than or equal to 199 employees, thereby assisting in implementing measures to protect the health of workers.

To assist SMEs to improve their work environments and implement physical and mental health measures for workers, OSHA has used multiple channels to spread information about health services, and has commissioned the operation of northern, central, and southern Workers' Health Services Centers to provide workers with personalized health consultations,

guidance, and fitness-for-work evaluations. Also, based on the special characteristics and needs of different industries, these Centers conduct workplace hazard assessments, prevention of physical and mental illegal infringement, prevention of work-related diseases, prevention of musculoskeletal disorders, fitness-for-work evaluations, maternity protection, and guidance of fitness for work for middle-aged or elderly workers. In 2019 OSHA provided guidance to SMEs 745 times, serving a total of 42,248 workers.



★ On-site health services (workplace hazard identification and guidance of improvement of the work environment).

Thanks to the construction and expansion of the workers' health services system in recent years, the healthcare coverage rate for workers nationwide has risen from 19.67% in 2016 to 40.5% in 2019.

#### Services provided by Workers' Health Services Centers

##### Hazard identification and improvement of the work environment

- ◆ Risk assessment
- ◆ Workplace environmental monitoring
- ◆ Improvement of the work environment

##### Health promotion and management

- ◆ Health examinations and guidance
- ◆ Health consultations and promotion
- ◆ Prevention of work-related diseases
- ◆ Prevention of musculoskeletal disorders

##### Protection of specified populations, including women and the elderly

- ◆ Fitness-for-work evaluations
- ◆ Maternity protection
- ◆ Return-to-work assessments and occupational rehabilitation
- ◆ Guidance of fitness for work for middle-aged and elderly workers

##### Construction of worker-friendly workplaces

- ◆ Job accommodation
- ◆ Upgrading of work capacity
- ◆ Subsidies for physical and mental health measures
- ◆ Work-related psychological consultations

*Health services system*

### 3-5 Training Health Services Personnel and Developing Health Services Tools

In order to expand capabilities to provide workers' health services, accredited institutions provided training to relevant professional personnel. As of the end of December of 2019, 1,613 physicians and 16,630 nurses had been qualified as having received workers' health services training. To enhance the professional skills of these people and keep them up to date, in 2019 OSHA worked with relevant institutions to hold 98 education and training sessions (including ones on maternal health protection and on the use of workers' health services e-Tools), with a total of 9,250 participants.

In addition, to assist professionals to provide workers' health services, OSHA developed the "weCare Occupational Health Management System" and the "iCare Personal Health Management System" e-Tools and made these available for downloading or online use. Moreover, OSHA received authorization from the German Federal Institute for Occupational Safety and Health (BAuA) to develop a Chinese language version of the "Risk Assessment with Key Indicator Method" tool, providing this to enterprises for their use.



★ Chinese language version of "Risk Assessment with Key Indicator Method" (KIM) tool.



# Protection of Workers after Occupational Accidents

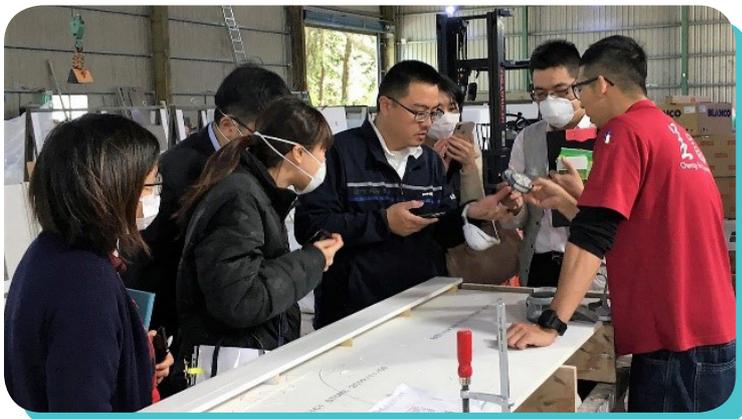


To protect the rights of workers who suffered from occupational accidents, based on the “Act for Protecting Workers after Occupational Accidents” OSHA provides workers and their families with a variety of living allowances and subsidies. Also, OSHA commissions specialized institutions to provide diagnosis, treatment, and rehabilitation for occupational injuries and illness, to provide comprehensive, integrated services to workers after occupational accidents.

By the end of 2019 Taiwan had 10 Centers for Occupational Disease and Injury Services and 83 network hospitals and 24 occupational rehabilitation services institutions to provide workers with easy access to professional services. In addition, OSHA launched the “Injured Workers Assistance Program”, setting up 47 case managers in local governments to provide timely, individualized, and in-depth services to workers and their families after work-related injuries or illnesses, strengthen referrals and links to assistance resources, and help workers get through hard times and get re-started.

## 4-1 Building an Occupational Disease and Injury service Network

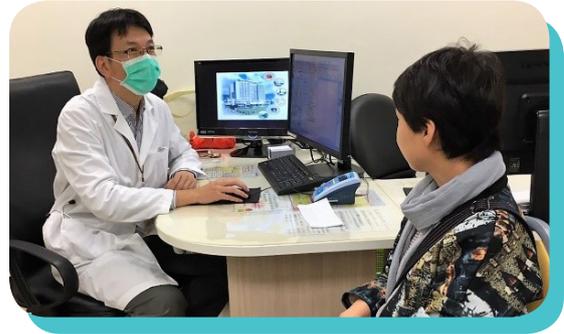
To protect worker health and the labor force, OSHA has set up Centers for Occupational Disease and Injury Services (CODISs) in various large medical centers throughout Taiwan, which are linked with network hospitals to form a network for occupational diseases and injuries. These Centers provide services that include injury and disease diagnosis, treatment, and referral; consultations on occupational diseases; and hazard exposure investigations. They also assist in identification and investigations of occupational diseases.



★ Occupational disease investigation.



★ Occupational disease and injury clinic sessions.



To maintain a grasp on occupational injury and disease data at the national level, OSHA set up the "Occupational Diseases and Injuries Reporting System," which includes CODISs and network hospitals and provides data for improving the quality of diagnosis and treatment and for setting effective policies for prevention of occupational injuries and diseases.

In 2019 there were 274 clinic sessions per week for occupational injuries and diseases, providing services (including burnout consultations) 26,896 times during the year. Case management services were provided to 3,079 people; occupational disease and injury consultations were provided to 9,688 people and referral services to 778 people (for a total of 10,466 service recipients); and 1,087 people were assisted to return to work. The number of reported cases of occupational injury or disease rose steadily from 1,600 in 2008 to an average of 2,300 per year over the last three years, indicating successful results in both an increase in reporting of occupational diseases and injuries and improvement of quality of diagnosis and treatment.



★ Educational publications from Centers for Occupational Disease and Injury Services.

# 4-2 Providing Various Subsidies for Workers Who Have Suffered from Occupational Accidents

The “Act for Protecting Worker of Occupational Accidents,” which went into effect in 2002, provides workers who have suffered from occupational accidents (including illness) and their families with allowances and subsidies. Workers covered under Labor Insurance not only receive the occupational accident payment, but also can receive other subsidies including occupational Diseases living allowance, disability living allowance, living allowance for vocational training, the device subsidy, care-taking subsidy, and survivors’ allowance, as well the occupational disease living allowance for workers who have withdrawn from Labor Insurance. Workers who are not covered by Labor Insurance may still receive the above-mentioned subsidies and allowances if their cases qualify under relevant laws and regulations. Moreover, in cases that employers do not pay occupational accident compensation as required by the “Labor Standards Act,” workers can receive death or disability subsidy under other laws or regulations.

In 2019 regulations were amended to increase the amounts of four kinds of allowances or subsidies based on changes in the Consumer Price Index issued by Taiwan’s Directorate General of Budgeting, Accounting and Statistics. It is estimated that about 20,000 workers who suffered from occupational accidents have benefited from the measure. Also, OSHA relaxed the qualifications for applications for the survivors’ allowance, permitting spouses, children, and parents left behind by workers killed on the occupational accident. In 2019 subsidies were approved in 2,877 cases, with total subsidies at NT\$265.33 million.

The image shows several informational pamphlets from OSHA (Occupational Safety and Health Administration) in Chinese. The central pamphlet is titled '職災勞工保障法' (Occupational Accidents Protection Act) and features a large illustration of a worker in a hard hat. Surrounding it are smaller pamphlets with numbered sections (1-6) detailing various subsidies and allowances. The text is dense and includes specific regulations and contact information for OSHA and other relevant agencies.

★ OSHA has produced pamphlets to introduce subsidy programs to citizens and relevant organizations.

## 4-3 Injured Workers Assistance Program

The Injured Workers Assistance Program allows for the employment of 47 case managers in 19 local governments to provide in-depth and individualized services for workers after work-related injuries or illnesses. These case managers also draw on resources from social welfare and employment services programs to support workers in getting through hard times and assist them to return to work.



★ An occupational accident case manager provided service to citizens.

Since its launch in 2008 through the end of 2019, this program has served injured or ill workers and their families in a total of 28,201 cases. It brings together resources including workers' rights consultations, legal assistance, help with labor-management disputes, financial support, mental support and counseling, return-to-work services, occupational rehabilitation, and employment services, and has provided service more than 1,010,338 man-times.

To monitor the progress of these case managers, OSHA held the "Guidance and Evaluation of the Injured Workers Assistance Program" (which is held once every two years) in 2019, at which OSHA commended local governments who have been outstanding in implementing the program, while experiences and innovative methods were shared and discussed, to upgrade case managers' professional quality and capabilities and provide injured workers and their families with even better services and resources.

In addition, in order to help the public better understand government services, in 2019 OSHA produced the video "The Trustingly Love" to promote the Injured Workers Assistance Program and related assistance measures. Also, through this video OSHA aimed to convey to enterprises the importance of building a safe and healthy work environment. The video, broadcast over OSHA's YouTube channel, has gotten over 100,000 hits.



★ The promotional video "The Trustingly Love."



★ A collective photo of occupational accident workers case managers from across Taiwan.

## 4-4 Assisting Work-Related Injured or Ill Workers to Return to Work

To assist work-related injured or ill workers to return to work, OSHA subsidizes relevant organizations to provide occupational or vocational rehabilitation services every year. In 2019, OSHA approved and subsidized 24 organizations across the country to provide timely and appropriate services to meet the circumstances and needs of workers who have suffered from occupational accidents. They served about 641 workers, with subsidies totaling NT\$28.04 million. Thanks to active cooperation between employers and employees, the return-to-work rate reached 80%.

The main services include:

1. Working ability evaluations and training: Based on the actual overall physical, mental, and social status of the worker, rehabilitation organizations (ROs) provide real or simulated job training to assist workers whose working ability has been impaired as a result of occupational accidents, to retain the workforce and return to their original workplaces as soon as possible.
2. Mental counseling and social adjustment: ROs assist workers who have suffered from occupational accidents to adjust to post-injury or post-illness changes and build up self-worth and self-efficacy.



★ Strengthening injured workers their work abilities.

3. Occupational guidance and evaluation services: ROs conduct evaluations of the occupational potential, interests, skills, work personality and physical condition of work-related injured workers. They provide concrete employment suggestions and assist workers to find suitable jobs and reemployment.

4. Job accommodation services: ROs coordinate improvements in the work environment or tools and equipment for work-related injured workers or suggest to change certain tasks or workflow to help these workers adapt to the work environment and raise their work effectiveness.

OSHA has also implemented the "Occupational Rehabilitation Providers Tutoring Project." Besides promoting rehabilitation services for work-related injured or ill workers, this Project aims to build a uniform services process and improve case management, as well as provide staff consultations, optimization of application processes, and professional training, in order to raise the quality of occupational rehabilitation services.

Distribution of diagnosis, treatment, and rehabilitation resources for occupational injuries and diseases in Taiwan, 2019



# 5

## Workplace Protections for Specified Groups



## 5-1 Young Workers

Young people are the foundation for the future sustainable development of the nation, so in 2019 OSHA issued the “OSH Protection Program for Young Workers.” OSHA strengthened inspections and educational guidance, working with high schools and vocational colleges to hold 20 education and training sessions (with 7,045 participants) and 14 OSH somatosensory training sessions (with 1,180 participants) for workers less than 18 years of age. OSHA also produced instructional videos and pamphlets about common hazards for workers less than 18 years old and provided these to schools and enterprises.

To continue to raise OSH awareness among young worker and to give the younger generation a chance to express their views on OSH, in September of 2019 OSHA held the “OSH Experiential Camp for University and College Students.” Activities included on-site visits to manufacturing and construction sites and the actual use or wearing of protective gear, as well as the holding of the “Safe Youth at Work Forum,” to implant OSH concepts in the minds of students.



★ A virtual reality OSH experience for university and college students.



★ A college student tries a full body harness.

## 5-2 Middle-Aged and Elderly Workers

Taiwan is an aged society, and middle-aged and elderly manpower is indispensable to national development. To promote a workplace culture that is friendly to middle-aged and elderly workers and ensure their safety and health, OSHA has commissioned expert teams to provide enterprises with on-site services for middle-aged and elderly workers, including fitness-for-work evaluations, job accommodation, and health consultations. OSHA also provides subsidies to improve work environments, and has used multiple methods to encourage employers to put emphasis on job suitability and health maintenance for middle-aged and elderly workers, including designating "model enterprises" for provision of health services to this group and offering education and guidance.



★ Improved training for middle-aged and elderly workers.



★ Checking on the musculoskeletal condition of an older worker at a Workers' Health Services Center.





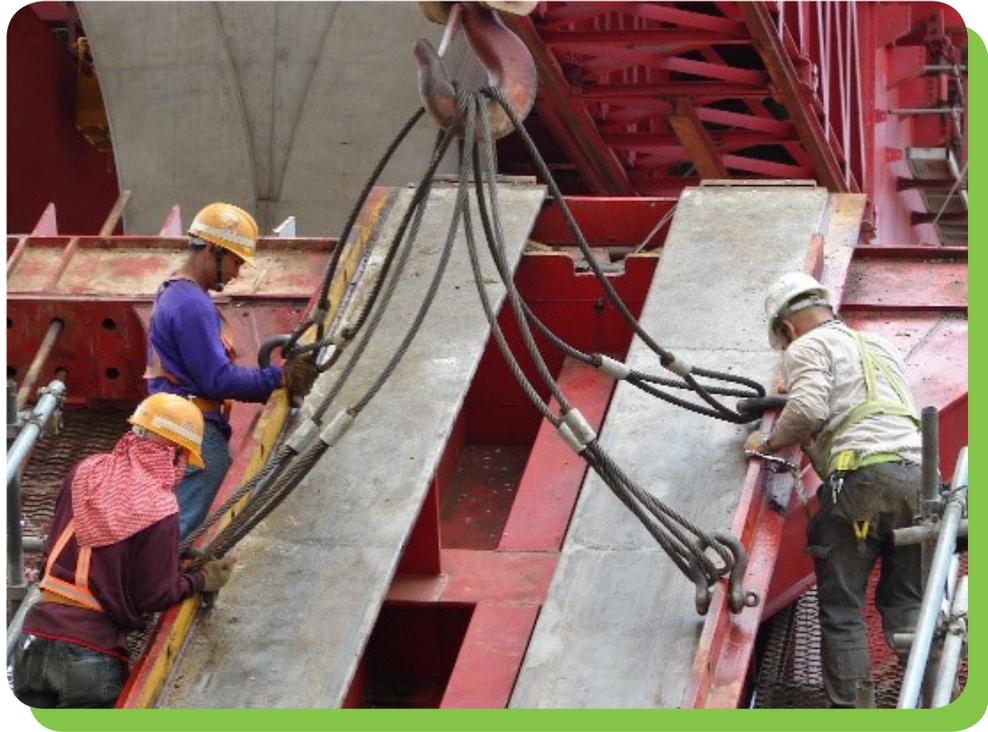
★ Maternal health protection consultations in a Center for Occupational Disease and Injury Services.



★ Maternal health protection consultations for pregnant workers.

### 5-3 Female Workers

To provide maternity protection and ensure female worker's right to work, the "Occupational Safety and Health Act" prohibits employers from assigning pregnant female workers or female workers still in their first post-partum year to hazardous jobs. Employers must also adopt health protection measures such as hazard evaluations, controls, and risk banding management for jobs that are potentially hazardous to maternal health. To ensure that employers comply with the relevant laws and regulations, OSHA issued the "Guidance of Maternal Health Protection at Workplaces" guidelines and produced a flow chart for maternal health protection for reference by enterprises. In addition, to better assist citizens, OSHA has commissioned Workers' Health Services Centers and Centers for Occupational Disease and Injury Services to provide on-site maternal health protection services, occupational health consultations, and suggestions about the suitability of job assignments, so that female workers can work with peace of mind. In 2019 services were provided to a total of over 16,000 female workers. Moreover, given low birthrates in Taiwan, to ensure a healthy supply of manpower and raise awareness of labor health, OSHA has used various methods including education, guidance, and subsidies to encourage employers and workers to understand the importance of maternal health protection for mothers and fetuses, and consequently improve work environments and raise the labor force participation rate for women.



★ Lifting operation for a steel support on a bridge pier.

## 5-4 Indigenous Workers

Considering that indigenous and foreign migrant labor is most often employed in industries with relatively high risks, in order to raise their OSH awareness, in 2019 OSHA used OSH education, on-site guidance, and training activities to promote prevention of occupational accidents (including illness) among indigenous workers. OSHA worked to blend traditional indigenous core values with OSH concepts, and encouraged enterprises employing indigenous people to strengthen worker safety in order to prevent occupational accidents.

In 2019 OSHA selected factories and construction sites employing indigenous labor to implement on-site guidance, providing consultation services 98 times; assisted workplaces with high risks to apply for subsidies for OSH facilities and equipment in 22 cases; held 15 OSH educational events; and held five OSH educational and training activities specifically targeted at indigenous people. A total of 208 people participated. In addition, OSHA produced ten types of educational materials which were handed out at quiz contests, OSH somatosensory activities, and educational meetings. Also, in coordination with the "Touring Educational Exhibition for OSH for Indigenous People" being promoted by the Institute of Labor, Occupational Safety and Health of the Ministry of Labor, OSHA organized ten "classrooms" and educational activities for indigenous people in tribal communities timed to coincide with important indigenous holidays. About 12,370 indigenous people participated.

## 5-5 Foreign Migrant Workers

Analyzing Labor Insurance occupational accident payments over the last three years, being cut, pinned, or rolled by machinery accounted for 73% of the cases of payments to foreign migrant workers. These accidents mainly happened in small and medium sized enterprises (SMEs). In 2019, OSHA conducted on-site diagnosis and individual case guidance at SMEs 719 times, helping them improve their ability to identify, evaluate, and control work hazards and improve the work environment. OSHA also assisted them to implement self-management and strengthen OSH measures like machinery safety, in order to ensure that foreign migrant workers can work safely.

Also, to enable foreign labor to operate forklifts and fixed cranes legally, OSHA coordinated training organizations with outstanding records to offer special classes for foreign workers. OSHA assisted them in translating essential instructional materials into four foreign languages, and extended training time to allow for oral classroom translation, thereby helping foreign workers to pass qualifying exams for technical skills or end-of-training tests. In 2019 a total of 67 classes were offered to foreign labor, with 1,431 people receiving training.



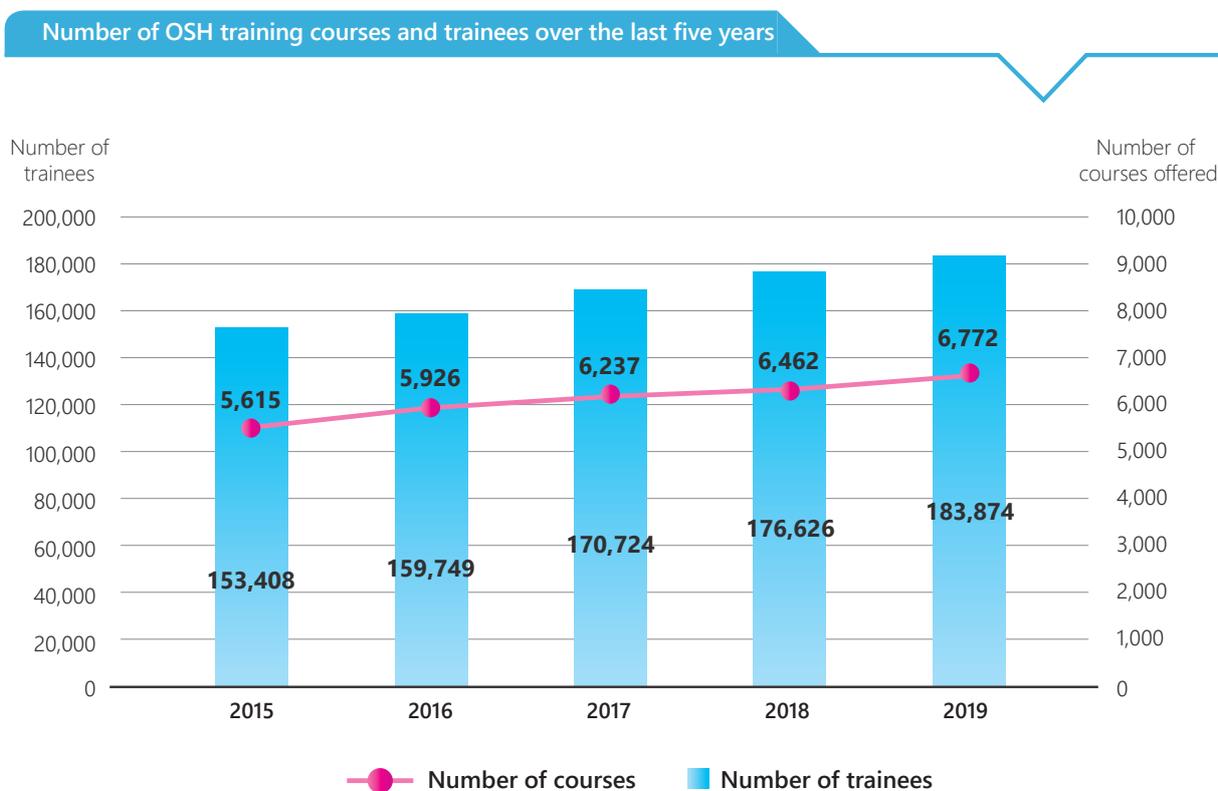
★ Training in operating a forklift.

# 6 Building a Culture of Workplace Safety and Health



## 6-1 Upgrading Workers' Safety and Health Capacity

Article 32 of the "Occupational Safety and Health Act" stipulates that employers have the responsibility to provide laborers with all necessary safety and health education and training to perform duties and prevent accidents. So far OSHA has developed 62 types of OSH education and training, has required businesses to upgrade workers' ability to identify hazards, and has strengthened OSH capacity. In 2019 a total of 597 organizations offered OSH training. Besides training organizations like enterprises, government agencies, schools, and hospitals, there were 144 non-profit juridical persons that had permission to establish occupational training institutions and offer regular training to other organizations. In addition, there has been a steady increase in the number of courses and number of trainees trained in courses that are in the legally stipulated category of "training courses that offer certificates to persons who pass qualifying tests or complete the training." In 2019 there were 6,772 such courses, with training given more than 180,000 man-times.





★ A group photo including Vice-Premier Chen, Chi-Mai, Minister of Labor Hsu, Ming-Chun, and award-winning organizations.

## 6-2 Incentives and Awards for Outstanding Organizations and Individuals

At present, awards issued for OSH work in Taiwan include the “National Occupational Safety and Health Awards” and the “Excellent Public Construction Occupational Safety and Health Awards.” The awards situation in 2019 was as follows:

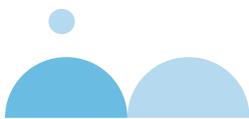
The “National Occupational Safety and Health Awards” are the highest awards in the field of OSH. The purpose of these awards is to select businesses that have long been dedicated to promoting OSH and establish benchmarks that other enterprises can learn from. In 2019, 10 enterprises and two individuals won awards. Two enterprises each won “Benchmark Enterprise Awards,” “Small and Medium Sized Enterprise Special Awards,” and “Investment in Traditional Industries Special Awards,” while four (including two healthcare institutions) won “Workers’ Health Special Awards.”

The “Excellent Public Construction Occupational Safety and Health Awards” aim to reward implementation of OSH at domestic public construction projects and build up a culture of work safety. Construction organizations that win “Special Merit” or “Merit” awards shall be considered “outstanding suppliers” under the “Government Procurement Act” for two years, while those who win “Honorable Mention” awards shall be considered “outstanding suppliers” for one year. In 2019, in the construction category there was one “Special Merit” award, nine “Merit” awards, and 22 “Honorable Mention” awards, while in the personnel category there were three “Class A” awards.

## 6-3 Establishing Safety Partnerships

To promote labor safety and industrial safety, and achieve the goals of sustainable business operations, establishment of workplace safety by the government, and promotion of workers' health, in 2019 OSHA's three regional Occupational Safety and Health Centers formed partnerships with six industrial associations and industrial parks, including the Taiwan Cement Manufacturers' Association and the industrial promotion associations for the Toufen and Jhunan industrial parks in Miaoli County and the Jiatai Industrial Park in Chiayi County. At present OSHA safety partners cooperating with various labor inspection institutions include two construction projects, 10 large enterprises, 14 industrial associations, and two industrial parks. In the future we will continue to re-assess, improve, and enhance the substantive impact of safety partnerships.

To build an industrial safety network based on industrial associations, strengthen intrinsic safety, and promote a self-management method for industries, on December 10, 2019, OSHA invited the Chinese National Federation of Industries and manufacturers' associations for seven major types of products (metal products, electronic components, machinery and equipment, food products, plastic products, base metals, and electrical equipment) to organize the "Industrial Intrinsic Safety Promotion Alliance." Through the Alliance cooperative mechanism, OSHA assisted these industries to develop self-management standards as well as a certification mechanism for machinery and equipment, strengthen industrial intrinsic safety bodies, introduce intrinsic safety concepts for machinery and equipment from the design and planning stage, implement risk assessments, and control risks from the source, in order to eliminate potential future hazards from operations and strengthen workers' safety care. In addition, OSHA will raise the percentage of workers covered by safety care in industries manufacturing these seven major products from 15% in 2019 to 100% in 2023.



## 6-4 Strengthening Self-Management in Enterprises

In order to enhance the workplace safety and health risk control capabilities of enterprises, since 2007 Taiwan has been promoting an occupational safety and health management system and encouraging enterprises to use the PDCA (plan-do-check-adjust) management model to self-improve the safety and health facilities of workplaces and upgrade enterprise safety and health standards. OSHA has guided enterprises to transition from traditional external inspections to proactive internal self-management and to improve their OSH management capabilities.



★ TOSHMS certification institutions learning from each other.



★ Activity to promote the TOSHMS.



**Encouraging enterprises to promote the Taiwan Occupational Safety and Health Management System (TOSHMS) on their own initiative**

Taiwan began promoting the TOSHMS certification system in 2008, and as of 2019 there were 956 companies with certifications still in their validity period. Of these, the manufacturing sector (including the electronic components industry, petroleum, the chemicals manufacturing industry, and other) accounted for the highest percentage at 71%, while the warehousing and transport industry was second with 7.9%.

In March of 2018 the International Organization for Standardization (ISO) issued its International Standards ISO 45001 specifying requirements for an OSH system. Taiwan issued its own National Standards CNS 45001 system requirements in December, 2018. In order to encourage domestic enterprises to bring OSH and workers' health matters up to international standards, OSHA amended the "Certification Standards of TOSHMS," adjusting the certification standards to CNS 45001.

## 6-5 International Cooperation

On March 6, 2019, OSHA held the "2019 International Conference on Occupational Hygiene," inviting scholars and experts from the US, South Korea, and elsewhere as well as domestic OSH specialists from industry, government, and academia to exchange views with domestic labor inspection institutions, industry, and specialists in the field of OSH.



★ Vice President Chen, Chien-jen meeting experts and scholars participating in the "2019 International Conference on Occupational Hygiene."

On June 10, 2019, OSHA Director General Tzou Tzu-lien signed a Memorandum of Understanding on OSH information exchange and cooperation with Dr. David Snowball, Chief Executive of the UK's Health and Safety Executive (HSE), establishing partnership relations and channels for information exchange and consultations. The two sides shared information on OSH at wind farms and organized international activities including visits and conferences, enabling OSH supervision to advance in step with Taiwan's offshore wind power policy and encouraging positive development of the industrial environment.



★ A group photo of OSHA Director General Tzou, Tzu-lien and the UK's Health and Safety Executive after the signing of a Memorandum of Understanding.

On June 12, 2019, OSHA held the "International Symposium on Improvement of OSH in Dyeing and Finishing of Textile Industry." OSHA invited international scholars from Japan and South Korea and domestic textiles experts to deliver themed addresses on topics that included smart dyeing and printing technology, sustainable development of dyeing and finishing agents, and OSH strategies, thereby creating a better environment for OSH.



★ A group photo of Minister of Labor Hsu, Ming-Chun with guests at the "International Symposium on Improvement of OSH in Dyeing and Finishing of Textile Industry."



★ A group photo of Minister of Labor Hsu, Ming-Chun with guests at the “International Conference of Occupational Health Services.”

On September 2 and 3, 2019, OSHA held the “International Conference of Occupational Health Services,” inviting famous experts and scholars from Taiwan and other places (including Europe, Japan, South Korea, and Malaysia) to share their practices in the promotion of workers’ health services. The conference helped improve the quality of workers’ health services professionals in Taiwan and made it possible for OSH and health services in Taiwan to align with international standards.

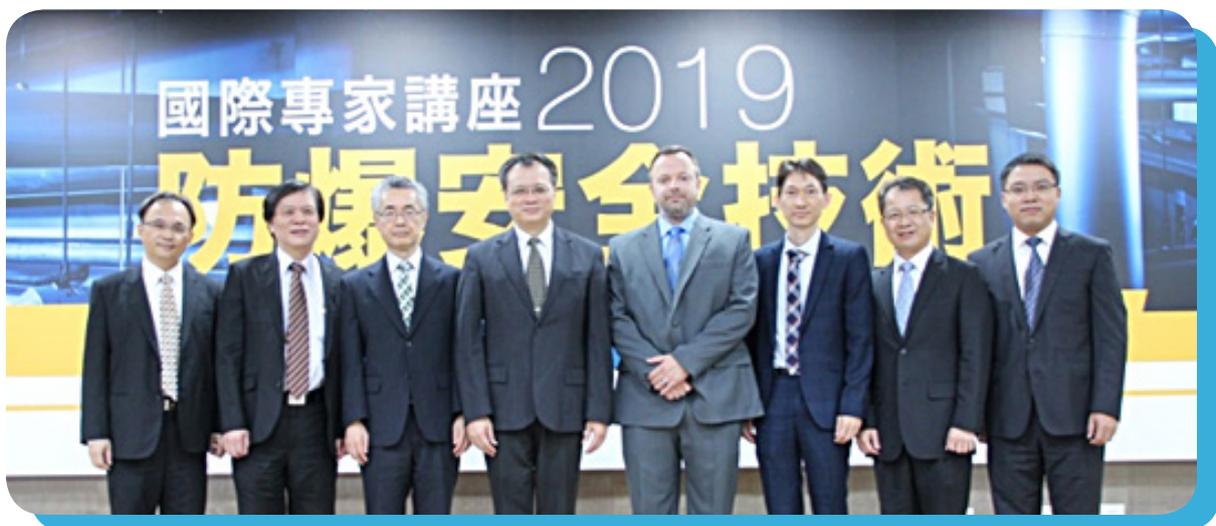


On October 8 and 9, 2019, OSHA held the “International Conference on Implementation of Occupational Safety and Health Management Systems,” inviting international experts in OSH management systems and representatives of outstanding domestic enterprises to share their practices in promoting International Standards ISO 45001. The event facilitated the improved operation of OSH management systems in domestic enterprises.



★ The “International Conference on Implementation of Occupational Safety and Health Management Systems.”

On September 26, 2019, OSHA held the “2019 Annual Seminar on Explosion Protection and Safety,” inviting experts in the fields of explosion prevention technology for electrical equipment from the US and Japan to exchange opinions and technology with representatives of relevant industries and experts from Taiwan on the issues of building an explosion prevention certification system for electrical equipment and occupational safety. Attendees shared their successful experiences with practical implementation and enhanced the safety awareness of industries.



★ A group photo of OSHA Director General Tzou, Tzu-lien with guests at the “2019 Annual Seminar on Explosion Protection and Safety.”

Bonnie Yau, Executive Director of Hong Kong's Occupational Safety and Health Council (OSHC), visited OSHA on October 24, 2019, to discuss the implementation of the "Reference Guidelines for Identification of Occupationally Induced Cerebrovascular and Heart Diseases (Except for Those Caused by External Injury)." The parties also talked about laws and regulations related to the identification of suspected cases of burnout in Taiwan and occupational accident compensation mechanisms, and exchanged ideas with respect to the role, functions, and duties of Hong Kong's OSHC.



★ Hong Kong's Occupational Safety and Health Council visiting OSHA to exchange views on identification of occupational diseases and determination of burnout.

From October 21 to 24, 2019, OSHA attended the "International Association of Industrial Accident Boards and Commissions Convention," held in Pittsburgh, Pennsylvania in the US. The theme for this convention was "Rewire," covering opportunities for revitalization of the "Rust Belt" and exhibiting the successful model of how Pittsburgh's well-known social enterprise Bidwell Training Institute assists disadvantaged groups. Attendees shared the practices and experiences of advanced countries with occupational assistance and compensation systems.



★ A photo of Anna Hui, Director of the Department of Labor and Industrial Relations in the US state of Missouri, with a representative of OSHA.



# Appendix Occupational Accident Statistics

Fig. 1 Occupational Accident Rate per 1,000 Workers under Labor Insurance Compensation

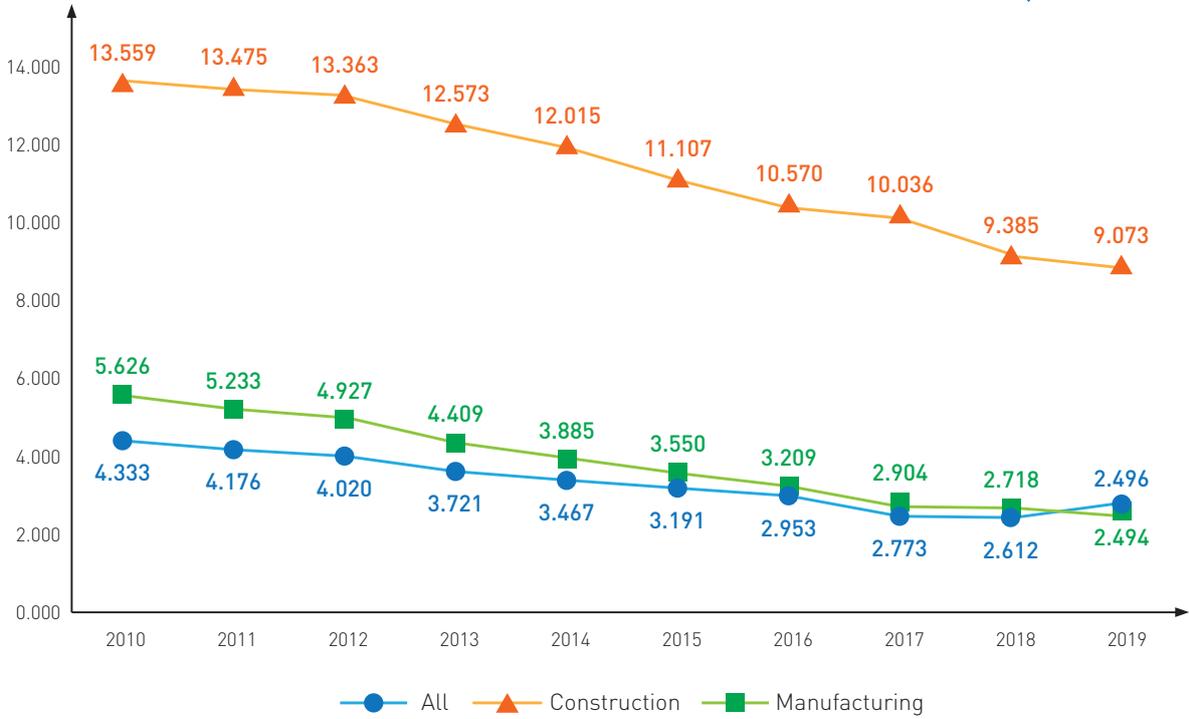


Fig. 2 Occupational Fatality Rate per 1,000 Workers under Labor Insurance Compensation

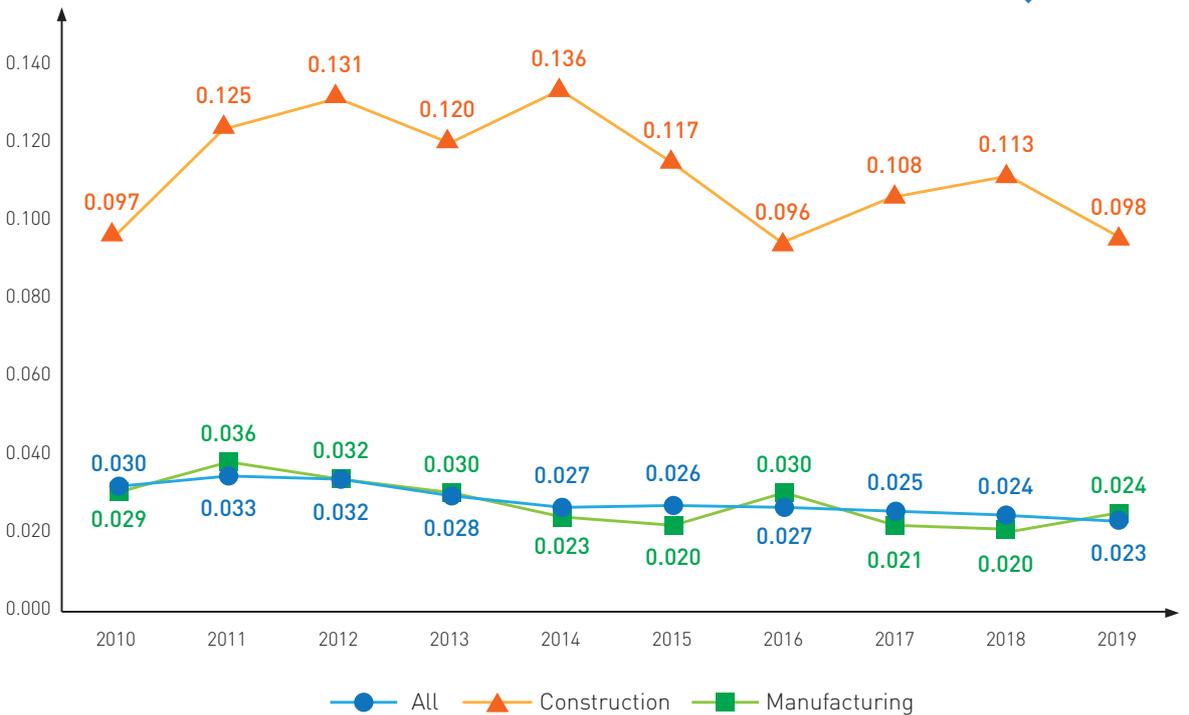


Fig. 3 Occupational Disability Rate per 1,000 Workers under Labor Insurance Compensation

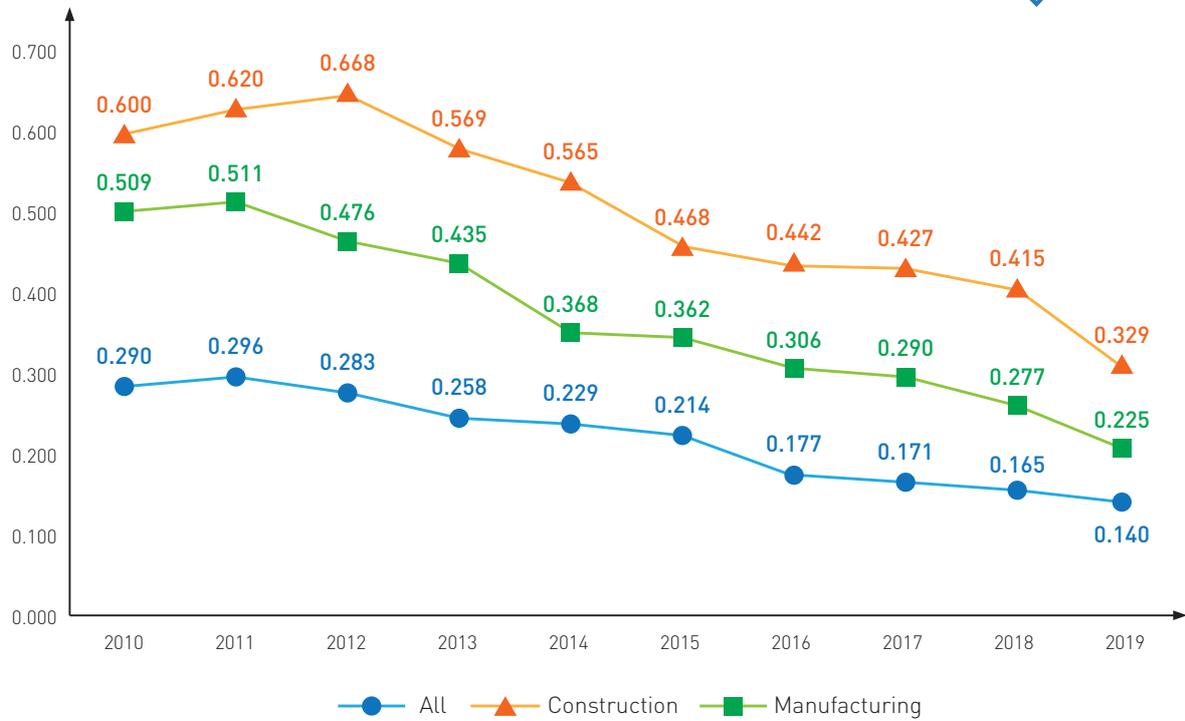
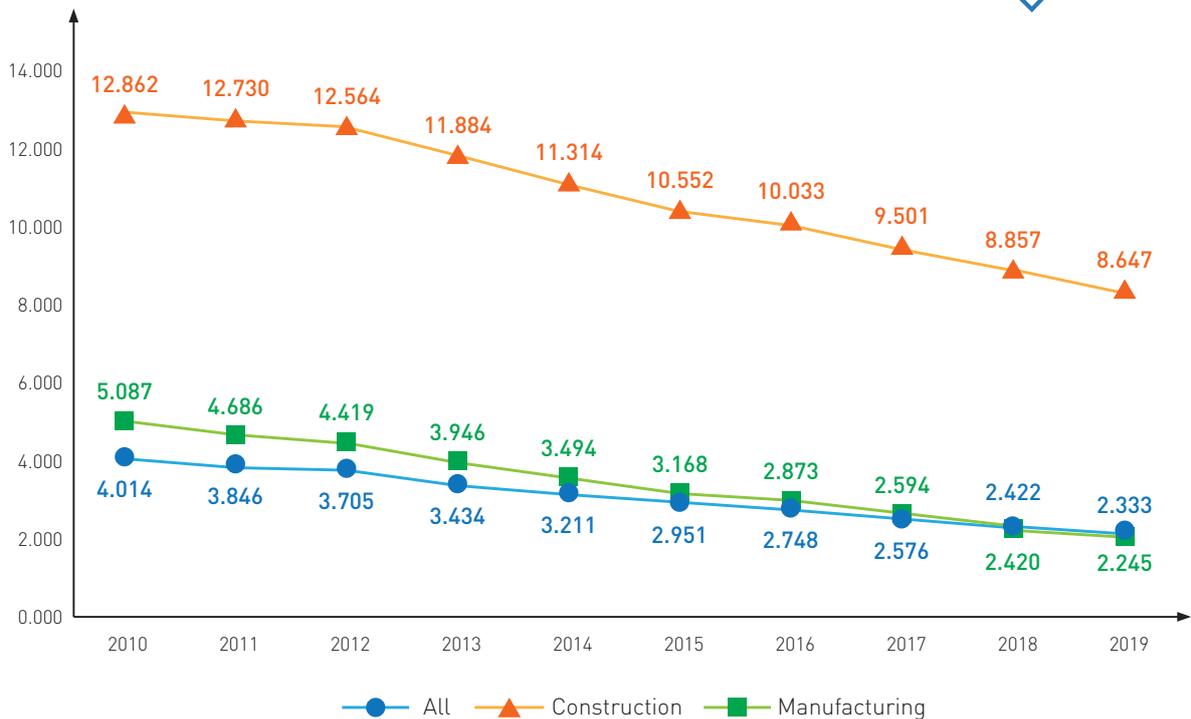


Fig. 4 Occupational Injury and Disease Rate per 1,000 Workers under Labor Insurance Compensation



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