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Annual Report 2004

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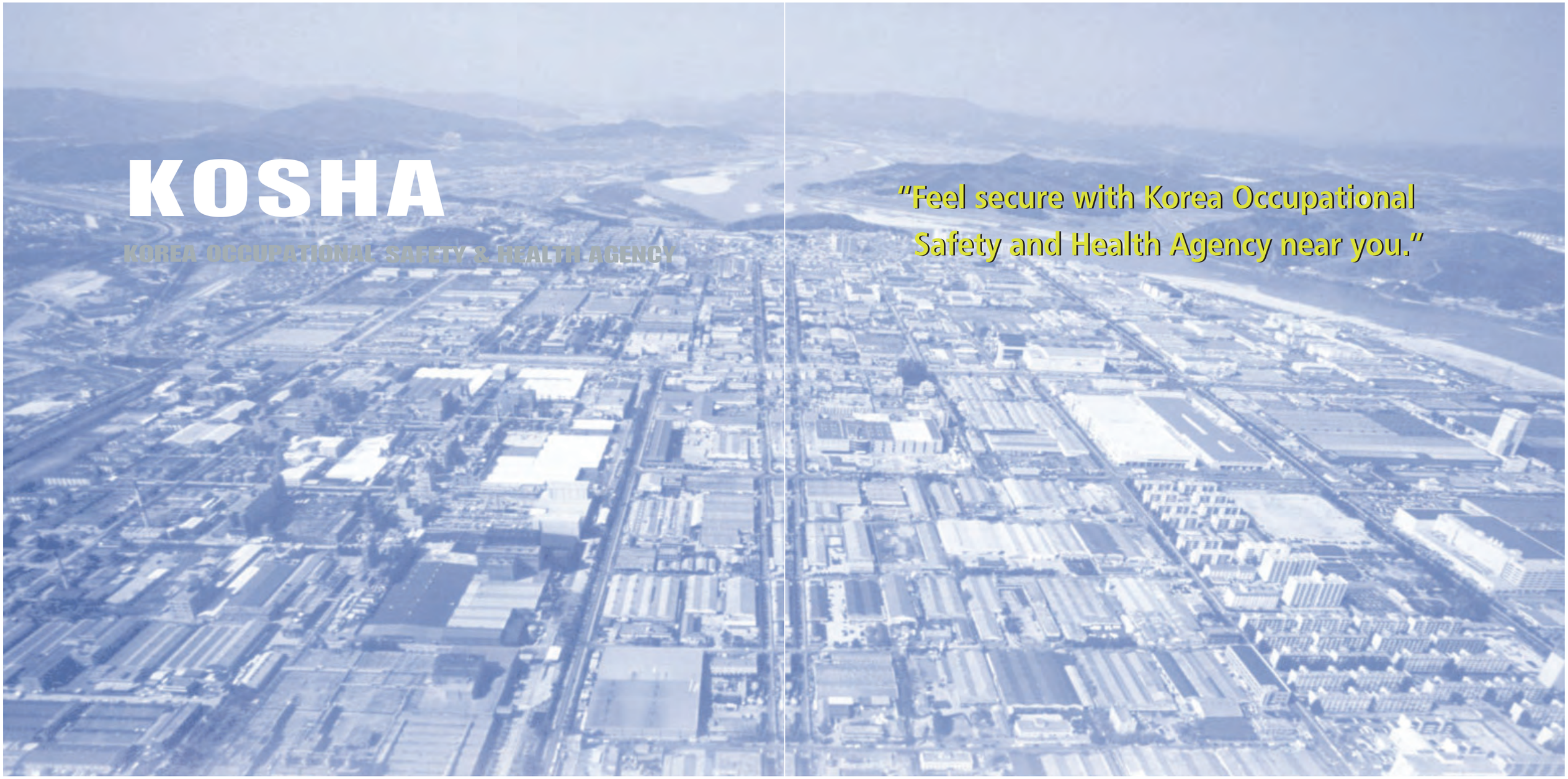

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Message from the President

Today the world is undergoing a number of radical changes in the general economic and social sectors. Thus, we need to establish sustainable measures on a more fundamental level to cope with such transformations. Like in many other industrial sectors, new social risks are increasing in the occupational safety and health sectors as well, and the labor environment is transforming itself rapidly to respond to the needs of the new trends, such as the decline of manufacturing, expansion of the service sector, small-scale businesses, and older, part-time workers. It is thus absolutely crucial to accept and actively cope with such changes through promoting the necessary safety and health activities in industry.

To cope with the changing business environment and this coming challenge, KOSHA recognizes that strengthening its core capabilities will be the very key to its future success and that it needs a strong driving force to fuel its growth 'Phase 2'. For this purpose, KOSHA presented its vision of the future by implementing its medium- and long- term development plan reflecting the determination of all KOSHA's officers and employees.

To ensure the successful implementation of this plan, KOSHA has been developing various industrial disaster prevention projects to improve occupational safety and health standards and competitive performance by business firms. Such efforts are manifested in its medium- and long- term management reform strategies as recently announced in 'NEW KOSHA 2010'. As such, KOSHA has been undertaking management reforms to strengthen its organizational capabilities to actively cope with the radical economic and social changes.

As part of our efforts to accomplish our goal, we have published this annual report featuring information on the various industrial accident prevention activities launched in the past year.

I would like to take this opportunity to thank all institutions and personnel concerned for their support and assistance.

I sincerely hope that this annual report will serve as a steppingstone toward contributing to the exchange of information in preventing industrial accidents.

Park, Kil-Sang
President

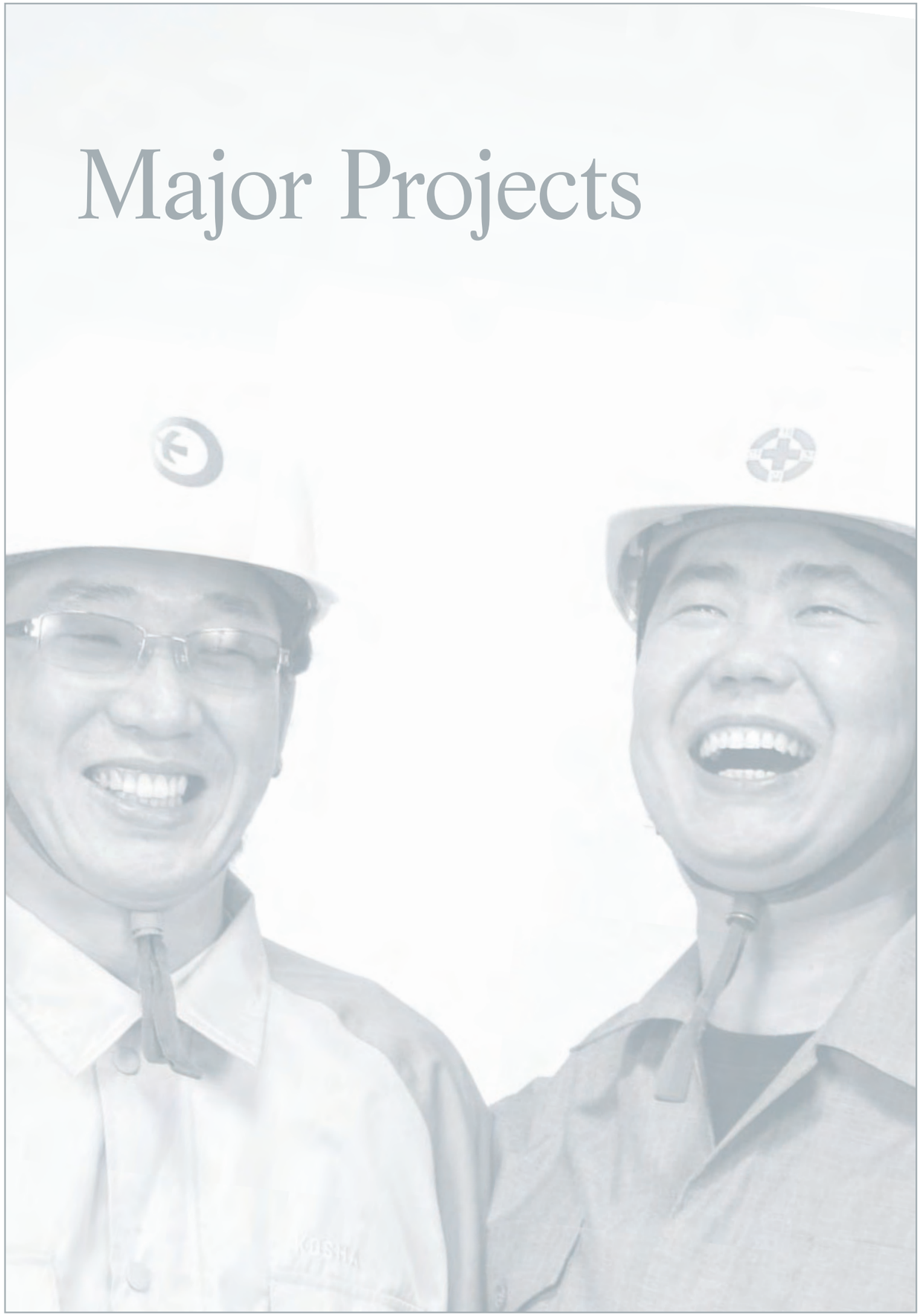
Introduction to KOSHA

Korea Occupational Safety & Health Agency (KOSHA) was established on December 9, 1987 as per the provisions of the Korea Occupational Safety and Health Agency Act (Act No. 3931 enacted on May 30, 1987). KOSHA aims to contribute to the national economy by maintaining and improving safety and health conditions of workplaces, and such goal will be achieved through the efficient implementation of its projects which include: research & development and promotion of industrial accident prevention technologies, provision of technical assistance and training to workplaces for occupational safety and health, and diagnosis and inspection of harmful and dangerous facilities and equipment, etc.

KOSHA's major functions are as follows:

- Creating "CLEAN workplaces"
- Supporting safety and health activities of small and medium enterprises(SMEs)
- Supplying safety and health management system certification (KOSHA 18001)
- Developing and supplying safety and health technical standards (KOSHA Code)
- Inspecting hazardous machinery, tools and equipment, and providing safety certification ("S" Mark)
- Providing industrial safety and health technical information services.
- Establishing occupational disease prevention and monitoring systems.
- Providing technical support to workplaces with a poor working environment.
- Developing and disseminating Material Safety Data Sheets (MSDS).
- Providing technical support for unsafe construction sites.
- Examining and inspecting hazard and risk prevention plans.
- Performance inspection for safeguard and personal protective equipment (PPE).
- Examining process safety management(PSM) reports, and providing chemical industry with Quantitative Analysis(QRA) technique.
- Researching, developing and disseminating industrial accident prevention technologies.
- Training employees, employers, and safety and health personnel.
- Launching safety culture campaigns and PR activities to enhance the public's awareness of workplace safety issues.
- Promoting international cooperation on industrial safety and health.
- Conducting other various projects commissioned by the Ministry of Labor and other central administrative agencies related to occupational safety and health.

Major Projects



Objectives and Directions in Implementing the 2004 Industrial Accident Prevention Projects

KOSHA's 2004 project goal was 'to create a pleasant workplace for employees while supporting environmentally safe business practices for employers', and it launched industrial accident prevention activities focusing on:

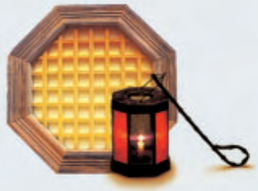
1 Strengthening the provision of technical occupational safety and health advice and support individually tailored to the specific nature of each workplace of small and medium enterprises by encouraging the creation of CLEAN workplaces ("CLEAN 3D Project"), effectively managing workplaces highly vulnerable to accidents and workplaces experiencing many accidents, and providing technical support and advice through private professional agencies to workplaces for their effective management of safety and health.

2 Promoting self-regulatory safety management at each workplace by introducing an advanced safety management system that includes the provision of support in establishing an occupational safety and health management system (KOSHA 18001) at each workplace, implementation of a Process Safety Management (PSM) system.

3 Reviewing process safety reports and operating/promoting integrated risk management programs for the prevention of serious industrial accidents and accidents in construction sites; Formulating and supplying practical technical safety standards (KOSHA code) applicable to industrial workplaces; examining hazard and risk prevention plans; providing technical assistance in safety and health issues and supporting the implementation of a safety and health management system for small-scale construction sites.

4 Effectively managing workers' health by providing occupation disorder and work-related stress prevention programs; supporting the implementation of health promotion programs for workers and exclusive health programs for older and female workers; providing the necessary guidance to workplaces in using handling hazardous substances that exceed permissible exposure limits (PELs), and providing technical assistance in preventing musculoskeletal disorders.

5 Supporting musculoskeletal disorder prevention programs through labor-management cooperation to promote labor management safety awareness and practical R&D; playing the role of think-tank through the study of occupational safety and health management policies; promoting field-oriented researches and strengthening cooperation with safety and health research institutes overseas.



Technical Support to Small and Medium Sized Workplaces in Creating Safe and Healthy Working Environments

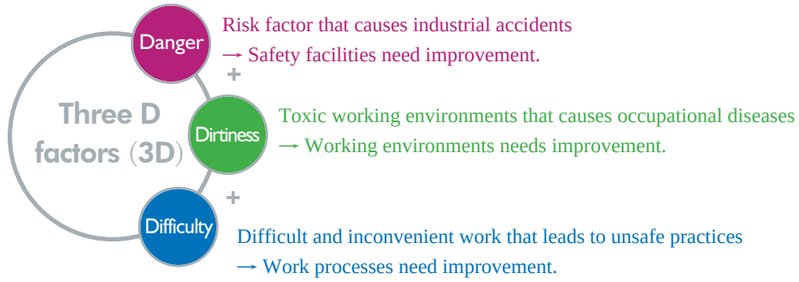
Providing Technical Support to Create CLEAN Workplaces

Most small and medium sized workplaces have poor working environments due to the use of dangerous machinery and equipment with high accident potential.

In particular, workplaces with less than 50 employees have a higher rate of accidents than large-scale workplaces because they are not only exempted from the compulsory appointment of safety and/or health managers under the Occupational Safety and Health Act, but also experience a high accident rate due to the lack of technical capabilities in the management of health and safety issues and safety consciousness on the part of the owner and workers.

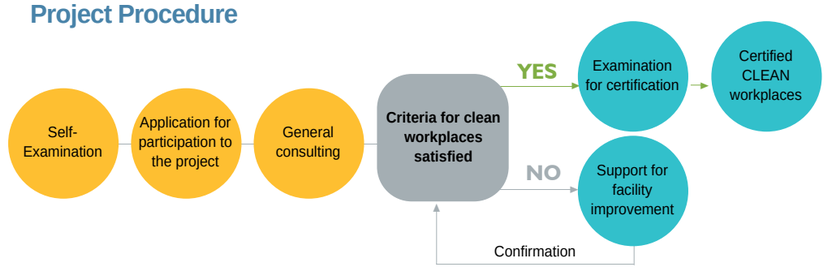
Thus, KOSHA provides intensive technical support tailored to the specific nature of each workplace to enhance the safety management capabilities of small and medium sized workplaces. The agency also actively promotes accident prevention programs including the creation of a clean workplace by supporting the improvement of facilities as necessary.

CLEAN

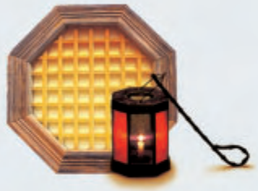


Workplaces with less than 50 employees usually have poor working environments due to the use of dangerous machinery and equipment that produce considerable heat, dust and noise. This leads to a high rate of industrial accidents and occupational diseases, which in turn results in manpower shortage since employees do not like working in such environments.
“Creating CLEAN Workplaces” is a KOSHA project aimed at creating safe and healthy workplaces by improving the 3D factors of industrial accidents, poor working environments, and difficulties experienced by workplaces with less than 50 employees.

Project Procedure



- KOSHA provides a general consultation service and conducts assessments of certification conditions through visiting the workplace which applied for the creation of ‘CLEAN workplace’.
- KOSHA provides the necessary guidance to the workplace requiring facility improvement in respect of loans for the creation of ‘CLEAN workplaces’, based on the results of assessment.
- The appropriate workplace submits an application for a facility loan and improves its facilities according to its capital investment plan.
- Review of the application is conducted by KOSHA. Workplaces meeting KOSHA’s certification criteria will receive a ‘CLEAN workplace’ certificate (an ‘certification plaque’ is also presented as appropriate to those workplaces meeting certification criteria that include having an appropriate place for facility installation).



Technical Assistance in Safety and Health Management

Management of Workplaces with a High Accident Rate

Providing Technical Assistance in Safety and Health Management

To create a safe and pleasant working environment, KOSHA has provided technical support to workplaces with poor working environments through direct visits by the staff from its commissioned private safety and health bodies. This task has focused on the elimination and improvement of 3D factors, such as hazardous, harmful, and other risk factors, as well as occupational safety and health problems at various workplaces.

Project Targets and Performance for 2004

Item			Target	Performance	Performance Rate (%)
Supporting the creation of CLEAN workplaces			7,000 workplaces	6,330 workplaces	90.4
Technical assistance related to safety and health management	Support by KOSHA	Safety	16,500	16,759	101.6
		Health	20,000	19,880	99.4
		Self-inspection	As necessary (31,500 units)	25,274 units	-
Health Assistant			10,000	10,123	101.2

Project Objectives 2004

Creating CLEAN workplaces	10,000 workplaces	▪ Creating "CLEAN workplaces" through technical support including the provision of integrated safety and health consulting services.
Follow-up technical assistance to certified CLEAN workplaces	5,264 workplaces	▪ Providing follow-up technical assistance to the CLEAN workplaces certified in 2004.
Safety and health management technical support	Safety: 12,000 workplaces Health: 20,000 workplaces	▪ Utilizing private professional agencies. ▪ Discovery of harmful and dangerous areas and formulating appropriate measures. ▪ Supporting the promotion of workers' heath.
Supporting self-inspection	As necessary (35,000 units)	▪ Supporting self-inspection for the machinery and equipment subject to self-inspection as mandated by laws. ▪ Utilizing private inspection agencies. ▪ Supporting workplaces with less than 50employees and are not covered by the required self-inspection.

Safety and Health Improvement Plan

The "safety and health improvement plan" is a legal project based on which the Minister of Labor may order the owner of the appropriate workplace to establish and implement a safety and health improvement plan covering the facilities and other items at the workplace as necessary to prevent industrial accidents.

Workplaces requiring safety and health improvement plans as prescribed under the law include:

(1) Workplaces where the rate of industrial accidents is higher than the average within the same industry;
(2) Workplaces with significantly poor working environments;
(3) Workplaces experiencing 2 or more serious accidents per year;
(4) Workplaces included in those specified above as separately designated by the Minister of Labor.

Any owner who receives an order to establish and implement a safety and health improvement plan should make the necessary preparations as prescribed by the Minister of Labor and submit them to the local labor office having jurisdiction within 60 days from receipt of such an order.

Support Details

- Focusing on the creation of a safe and pleasant workplace by eliminating and/or improving 3D factors, including harmful and hazardous factors and occupational safety and health problems at workplaces.
- Proposing improvement measures through concentrated analysis of harmful and hazardous factors in each process.
- Conducting analysis of the causes of past accidents, and proposing proper accident prevention measures.
- Providing suitable and adequate technical data (One Page Sheet) to the recipient workplaces, taking into account their work type, major production facilities and work processes; providing them technical support in respect of how to utilize such data.
- Conducting status checks for workplaces with poor working environments and proposing specific improvement measures for harmful factors that exceed permissible exposure limits vis-a-vis the handling of toxic substances, hazardous substances requiring authorization, dust, noise, vibration, etc.
- Conducting heath checkups and follow-up services, and providing preventive training and technical support for health promotion activities launched by the workplaces where workers frequently suffer or are likely to suffer work-related illnesses as a result of musculoskeletal disorders and cerebro-vascular diseases.
- Supporting self-inspection in workplaces with less than 50 employees where machinery and equipment require such self-inspection.

The safety and health improvement plan should contain those items required to improve the facilities, details of the safety and health management system, safety and health training, the working environment and the measures proposed to prevent industrial accidents.

In 2004, KOSHA provided technical support in establishing the safety and health improvement plans for 6,617 workplaces with less than 50 full-time employees, and for 641 workplaces with more than 50 full-time employees in cooperation with the Ministry of Labor (regional labor office).

To ensure that any owner who received an order to establish and implement a safety and health improvement plan could satisfactorily establish the plan, KOSHA provided the necessary guidance (status check) in preparing the improvement plan. In addition, through the examination of the submitted improvement plan, KOSHA checked any omissions as well as the appropriateness of the improvement methods and measures, required budgets, and time required to carry out such improvements.

For workplaces whose improvement required a long period of time, KOSHA provided additional technical assistance as necessary to ensure that the improvement plan had been implemented as scheduled and in the right direction. Upon completion of the improvement plan, KOSHA reported the results to the head of the regional labor office by classifying the workplaces as “Completed” if the improvement plan was completed, “Ongoing (carried forward)” if the improvement was in progress, and “For administrative action” for workplaces that had not implemented the improvement plan.

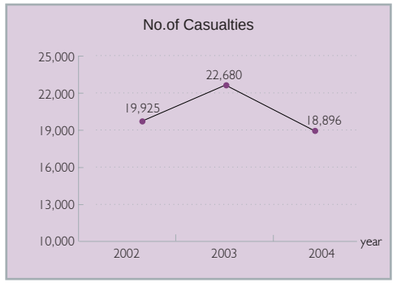
For manufacturing plants with less than 50 employees which are highly vulnerable to industrial accidents, if the owners wish to improve their safety and health management system and working environment comprehensively by implementing the safety and health improvement program introduced this year, KOSHA provides the necessary support to help implement practical and effective industrial accident prevention programs by providing the technical assistance required to improve their industrial facilities in connection with the “CLEAN workplaces” project.

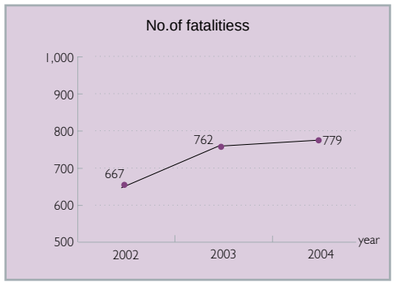
Providing Technical Safety Management Support for Construction Sites

With the recent implementation of the government’s construction business activation policy, Social Overhead Capital (SOC) projects, apartment construction and small construction works in the region of the capital have been shrinking. As a result, the total construction orders for 2004 stood at approximately USD 95 billion, which is a decrease of approximately 7.7 % compared with the prior year.

Such decreased construction orders caused construction companies to become less and less profitable and they inevitably hired foreign, elderly, female, and unskilled workers in large numbers, which in turn led to increased accidents. As a result of the government’s deregulation policies, the desire of employers to invest in safety programs has decreased, which resulted in a reduction in the number of accidents yet an increase in fatalities at construction sites.

Construction Accident Trends





Technical Assistance to Large Construction Sites

For large construction sites, KOSHA inspects the “Harmfulness and Hazard Prevention Plan” submitted by construction companies as part of its efforts to secure workplace safety at the initial planning stage. KOSHA then examines the appropriateness of their safety and health management plans vis-a-vis harmful and risky factors. The agency periodically checks the safety measures shown on the plan during the progress of work to verify whether such measures are in effect taken. Continued efforts are being exerted by KOSHA to prevent accidents that may occur during construction work.

* Five construction projects requiring submission of the Harmfulness and Hazard Prevention Plan are:
  - The structure in height of more than 31m or in total floor space of more than 30,000m^2(more than 5,000m^2 in the case of public facilities in culture, gathering, sales and medical treatment)
  - Construction of bridges with a maximum span of longer than 50m
  - Tunnel construction works
  - Dam construction works
  - Excavation construction in depth of more than 10m

Examinations and Inspections by Year

(Unit: Workplace)

Item	2004	2003	2002	2001
Examination	2,084	2,374	2,284	1,234
Inspection	8,915	9,075	7,060	4,974

There are 7 SOC construction projects with a high rate of accidents including collapses: subways, express railways, expressways, power stations, dams, and ports and national highways. KOSHA manages these construction projects differently according to their rate of accidents and safety grade and provides technical assistance in cooperation with the Ministry of Labor.

* Accidents Classification and Management Standards Based on the Grade
  - Red (inferior):Construction sites recording an accident rate that is at least 1.5 times higher than the average accident rate of similar sites (subject to special supervision and technical support from the Ministry of Labor)
  - Yellow (ordinary): Construction sites recording an accident rate that is 1.5 times less than the average accident rate of similar sites (subject to technical assistance by KOSHA)
  - Blue (good): Construction sites recording no accidents for 18 consecutive months (self-regulatory on-site management)

Technical Assistance provided to SOC Construction Sites Annually

(Unit: Site)

Item	2004	2003	2002	2001
Yellow Grade	335	233	271	263
Red grade	31	26	30	30

Technical Assistance Provided to Medium-Sized Construction Sites

Compared with large construction sites, medium-sized construction sites whose overall construction cost is less than KRW 10 billion generally lack safety awareness and self-regulatory management capabilities. Together with the Ministry of Labor, KOSHA conducted unexpected inspections at medium-sized construction sites to point out potential accident factors and propose technical measures to improve such condition. Thus, KOSHA conducted accidents prevention activities to detect and remove hazardous factors from sites with potential for landslide, form timbering collapse, inundation, electric shock, fire, etc. before such high-risk seasons as thawing, rainy or winter season starts.

Technical Assistance Provided to Medium-Sized Construction Sites

(Unit: Site)

Project Name	2004	2003	2002	2001
Inspection and supervisory technological assistance by construction safety patrol	477	669	306	501
Inspection and supervisory guidance during high-risk seasons	2,495	2,179	2,410	2,005

Technical Assistance to Small Construction Sites experiencing Many Accidents

There are many small construction sites whose contract amount is less than KRW 200 million where employee safety awareness and safety technology levels are relatively low despite the occurrence of many accidents. KOSHA provides ongoing technical support and training to improve the level of safety awareness among related personnel.

Technical Assistance Provided to Small Construction Sites

(Unit: Site)

Project Name	2004	2003	2002	2001
Technical assistance provided to small construction sites	12,467	12,525	10,363	6,358

Self-Regulatory Safety Management

Unlike the manufacturing industry, a construction business is managed separately by a head office and a site office. To ensure effective management of employee safety both inside and outside the workplace, it is crucial to encourage voluntary safety efforts in the organizations within the construction industry by operating a company-wide safety management system rather than merely having an on-site safety management system.

To ensure construction companies improve workplace safety and health programs through their safety and health management system implemented at their head office, KOSHA distributed the “Construction Industry KOSHA 18001 Program”, a safety and health management system, to 6 large construction contractors & originators and inspected their activities for certification. To help construction companies with poor safety management systems develop self-regulatory safety and health programs, KOSHA received applications for technical support from construction contractors. In 2004, it provided free technical assistance for 1,171construction sites.

In addition, to enhance self-regulatory safety efforts at construction sites, KOSHA gave to construction companies presentation of “best practice cases in managing safety” that were later applied to construction sites, in cooperation with construction companies and construction sites as well as related bodies.

Some of the serious accidents occurring every year have become a social issue and a topic of debates in TV and other media. KOSHA held seminars with such issue as a theme to propose solutions to the technical and safety problems faced by frontline construction workers and managers. Such initiative has encouraged construction workers to participate in the safety movement, thereby contributing to the promotion of safety consciousness throughout the construction industry.

To increase safety technology levels, KOSHA developed and supplied various technical manuals including “Handbook on Safety Inspection and Examples of Accidents” (2 types covering outdoor setting construction and scaffolding erection). As such, the agency aims to continue to offer excellent customer services by translating and supplying technical manuals from other countries for local distribution to meet the needs of construction sites.

Working Environment and Workers Health Management

Recently, with new chemicals being developed and used in advanced industries such as semiconductor or heavy chemical industries, the prevalence rate of occupational diseases has been increasing. Furthermore, cerebro-vascular diseases resulting from mental stress and musculoskeletal disorders resulting from the increased use of computers, increased simple and repetitive work and worker's mind change for health due to aging, are on the rise.

To deal with this situation effectively, KOSHA conducts examinations regarding working environment monitoring. If the results keep exceeding government's prescribed exposure limits, the agency provides technical support to handle workplace risks as well as information on harmful chemicals. It is also launching a variety of projects to prevent occupational diseases such as cerebro-vascular diseases and musculoskeletal disorders.

Technical Support to Workplaces with Poor Working Environments

To prevent occupational diseases and promote safer and healthier working environments, KOSHA provides technical support to workplaces with hazardous materials that exceed permissible exposure levels vis-a-vis the handling of toxic materials such as chemical substances.

From the evaluation of working environments for workplaces last year, KOSHA selected the workplaces with poor working environments such as workplaces that exceeded permissible noise and dust limits, workplaces found to have occupational diseases potential, workplaces manufacturing and/or using harmful substances, including benzene, lead, subject to KOSHA's monitoring, as well as workplaces suffering from oxygen deficiency. KOSHA has been offering the technical assistance to such workplaces. In addition, the agency provides technical support to workplaces as requested by the regional labor office. In particular, KOSHA conduct the working environment monitoring unexpectedly to workplaces that have an extremely poor working environment by exceeding the mandated exposure limits, caused a business scandal due to the incidence of occupational diseases and labor-management disputes over the results of working environments.

Industrial hygiene specialists visit those workplaces to analyze the toxic process, evaluate the working environments, and check the local exhaust system and other items related to the working environments. After the evaluation, the specialists provide working environment improvement reports to the workplaces concerned. After a specified time, the specialists ensure effective improvement by checking the status of the items pointed out during the last inspection for improvement and by providing additional assistance with respect to the items pointed out earlier.

In keeping with KOSHA's commitment to prevent confined space death in workplaces, training has been conducted for the employees in workplaces that are considered vulnerable to asphyxiation during the rainy season and summer.

KOSHA lends oxygen concentration meters, ventilation fans, breathing equipment and other equipment for the prevention of oxygen deficiency to workplaces free of charge.

KOSHA also implemented programs to protect workers against hearing impairment and respiratory diseases as well as prevent oxygen deficiency in workplaces following the revision of the Occupational Safety and Health Act in 2003. To prevent hazardous factors caused by noise and dust, and incidents with confined-spaces through such programs, the agency continues to improve working environments comprehensively through various activities including working environment evaluation, technological improvement, the supply of PPE, health training, special physical checkup, and follow-up re-evaluation.

Technical Support Provided to Workplaces with Poor Working Environment

Item		Performance (Workplaces)						
		2004	2003	2002	2001	2000	1999	1998
Technical support to workplaces with poor working environment	Total	4,226	2,673	3,796	1,009	2,291	2,267	1,783
	Workplaces exceeding permissible noise and dust limits	1,411	579	570	417	809	1,121	856
	Workplaces handling chemical materials	300	-	-	-	850	1,134	916
	Workplaces requiring approval on manufacturing and/or use	89	60	101	73	12	12	11
	Workplaces with confined spaces	305	84	173	320	620	-	-
	Technical support provided for each hazardous factory	2,121	1,950	2,952	199	-	-	-

Prevention of Work-related Diseases

*Cerebro-vascular Diseases

Recently, the number of middle-aged and elderly people as well as general levels of stress have increased and the improved standard of living has lead to a lack of physical exercise and a changed lifestyle. These have contributed to the increase in the number of persons suffering from hypertension, hyperlipidemia, diabetes, and obesity and from occupational cerebro-vascular diseases requiring urgent measures.

To prevent the occurrence of cerebro-vascular diseases, KOSHA provides training and technical support to enable workers to recognize risks with respect to diseases and health and manage the diseases by themselves. KOSHA is building a database for workplaces having many persons suffering from hypertension, hyperlipidemia, diabetes, and other cerebro-vascular diseases and provides appropriate training and technical materials as part of preventive measures.

For those workplaces with a high incidence rate of cerebro-vascular diseases of employees, KOSHA conducted, through specialized health bodies, simplified health condition check such as health checkup, ex post facto management of physical checkup, blood pressure check, body fat checks, as well as health training and health consulting services at workplaces.

In addition, the agency conducted health promotion campaigns for working places by assisting them in providing individually tailored various health promotion techniques based on its evaluation results, such as management of workers with basic diseases, prohibition of smoking, moderation in drink, nutrition management, exercise, etc. KOSHA also selected best practice cases among those workplaces assisted by KOSHA to apply them to other workplaces.

KOSHA also operated 7 exercise function test centers per sector to enable workplaces to improve workers' health through conducting scientific exercise programs. This permit employers to check workers' health condition easily using self-diagnosis devices.

Utilization of Exercise Function Test Centers at Workplaces

Item	2004	2003	2002	2001	2000
* Technical assistance provided to workplaces in constructing and managing DB (workplaces)	17,650	17,250	11,921	9,000	8,318
▪ Prevention of crebro-vascular diseases (workplaces)	2,000	2,711	2,033	2,000	1,724
▪ Health promotion (workplaces)	203	113	111	108	-
* No. of employers operating the exercise function test center(persons)	16,390	16,493	14,474	14,675	20,736
▪ No. of employees visiting the exercise function test center (persons)	35,454	23,184	-	-	-

Implementation of MSDS D/B

As part of KOSHA's plan to prevent occupational diseases and accidents occurring to employees handling chemicals, information on hazards and risks related to such chemicals distributed nationwide has been stored on the MSDS database in the Korean version. The database is provided to workplaces free of charge through the KOSHA website. The Material Safety Data Sheet system was introduced on July 1, 1996, and the website has received a total of 1,128,103 clicks since March 1996.

To ensure the effective use of MSDS, KOSHA first checks the MSDS of workplaces handling chemicals to detect and supplement any omission or error related to hazards and risks. In 2004, KOSHA developed and distributed to regional offices under the Ministry of Labor and related bodies 1,663 copies of the Chemical Information Card (CIC) containing summarized information on 562 hazardous substances subject to authorization and control as stipulated by the Occupational Safety and Health Act, which those engaged in handling such substances must be familiarized with,

In 2005, KOSHA strengthened its hazardous chemical material information services by providing the free updates on the existing MSDS DB (containing 50,500 types of chemical substances) containing information on chemicals from manufacturing plants, workplaces, and chemical importers and retailers and newly entered chemicals.

To verify the reliability of the MSDS DB, since 2005, KOSHA has built a Chemical Safety and Health Center that can carry out the analysis of chemical components, test toxic and physiochemical property. The center utilizes and maintains its technicians, facilities and equipment, and then expands the MSDS DB through self-development, updates the MSDS DB through surveying and performing toxic and hazard tests. This will be the first center to verify MSDS reliability in the nation.

Frequency of MSDS DB utilization

(Unit: Case)

Item	Total	2004	2003	2002	2001	2000	1999	1998	1997	1996
Frequency of utilization	1,469,514	341,411	282,003	244,000	235,364	163,244	48,489	43,980	60,435	50,588

Musculoskeletal Disorder Prevention Project

Korea is witnessing rapid changes in its industrial structure and the result of automation and mechanization of the production process including the increased use of computers. Products have become smaller and more diversified, and precision works have shown a pattern of rapid development. Due to such changes, however, a considerable number of workers avail themselves of the treatment for musculoskeletal disorders resulting from composite causes including repetitive works, awkward working posture, use of excessive force, contact stress, and vibration.

As such, musculoskeletal disorders became a social issue and in an attempt to remedy this situation the government has revised the Occupational Safety and Health Act that stipulates reinforcement in the management of working environments and the duty of employers to prevent musculoskeletal disorders.

To reduce such kinds of diseases and ameliorate MSD Caution zone job, KOSHA has developed ergonomic technologies and distributed it to employers and employees. In addition to that, KOSHA's ergonomic prevention facilitator training programs can be helpful to those company which trying to prevent MSD problems by themselves.

To provide technical consulting services for the prevention of musculoskeletal disorders, KOSHA organized a technical committee. The committee provides consulting services at least 2 times a year in 7 areas related to the prevention of musculoskeletal disorders and related laws and systems. The agency also organized a technical support team composed of ergonomic experts to promote the improvement of working environments at a fundamental level for the prevention of musculoskeletal disorders at workplaces using processes that have caused or might cause these disorders. The team has conducted ergonomic diagnosis and evaluations of about 2,000 workplaces, as well as providing technical service tailored to the needs of each workplace in improving facilities.

Since a new law regarding the duty of owners to prevent musculoskeletal disorders was enacted and implemented, KOSHA has introduced the "Guidelines for the Risk Assessment of Musculoskeletal Disorders causing factor", "Ergonomic Prevention Programs" and other technical standards as the KOSHA Code for dissemination. At the same time, the agency has conducted training on related laws and the KOSHA Code, and has developed and distributed related technical brochures (18 types, 397,800 copies in 2004) for owners and safety and health personnel to establish a system for the prevention of musculoskeletal disorders.

In December 2003, KOSHA constructed a musculoskeletal disorder prevention Internet homepage. By linking the section with the KOSHA website, the agency provides technical materials for the prevention of musculoskeletal disorders, examples of ergonomically improving the working environment, related laws and regulations and guidelines, international trends, and latest news (http://msd.kosha.net).

Development of the Safety and Health Technical Standards and Guidelines (KOSHA Code)

Development and distribution of technical standards on safety and health adapted to each individual situation is essential in ensuring safety and health at the workplace. As the demand for development and distribution of such standards grew, in January 1990, technical guidelines, working environment standards, and provisions related to the operation of the General Technical Standards Committee were added to the Occupational Safety and Health Act. The committee was placed under the control of KOSHA.

The Technical Standards Committee is composed of 8 technical committees - general safety, electrical safety, mechanical safety, chemical safety, construction safety, general occupational health, occupational medicine, and occupational sanitation. A general standards committee was also created to finalize the draft for the standards. Each committee is composed of up to 20 experts who are employees' and employers' representatives, government authorities, KOSHA, industries, and academia.

Standards for the compliance of enterprises as determined by the Technical Standards Committee are submitted to the Ministry of Labor for general publication by the Labor Minister. Other items are classified into KOSHA code and announced by the KOSHA President for use in industries. To date, a total of 29 standards have been announced by the Ministry of Labor, and 239 KOSHA codes have been added up to 2004. KOSHA codes are disseminated through printed materials and its website for widespread use. To improve the quality of the KOSHA code, KOSHA revises its codes every 5 years in keeping up with technological developments in occupational safety and health.

Since international standards increasingly tend to be adopted as domestic standards, KOSHA uses international standards as references when developing its codes. As a secretariat consisting of national committees, KOSHA participates in ISO/TC 96 (Cranes), ISO/TC 108 (Mechanical Vibration), ISO/TC 146 (Air Quality), IEC/TC 31 (Electric Apparatus in Explosive Atmospheres), and IEC/TC44 (Safety of Machinery - Electrotechnical Aspects).

KOSHA Code Registration by Sector (1995~2004)

(Unit: Case)

Total	General Safety	Machinery	Chemical	Electrical	Construction	Occupational Health	Occupational Sanitation	Occupational Medicine
239	7	73	73	29	24	6	12	15

Inspection, Review, Verification and Approval Services related to Occupational Safety and Health

Support for the Implementation of Occupational Health and Safety Management Systems

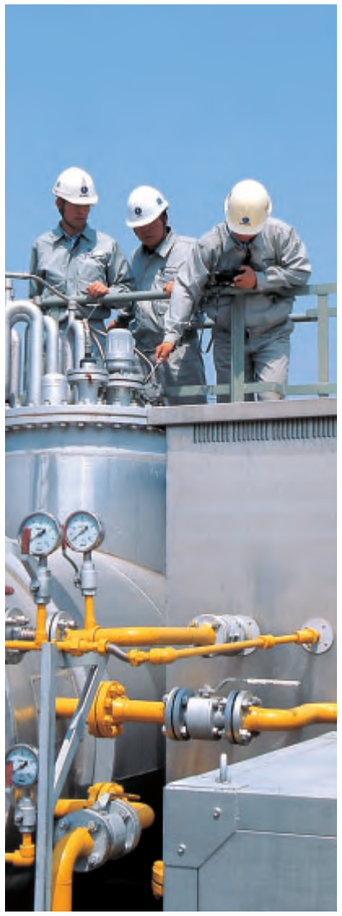
The “Occupational safety and health Management System” (OHSMS) pertains to a system under which an employer reflects the safety and health policies in corporate management policies and establishes detailed execution guidelines and regulations for the compliance of all employees. In addition, management self-evaluates the results of the management plan periodically to ensure its continuous improvement.

To promote such occupational safety and health management systems, KOSHA started implementing the KOSHA 18001 certification system in July 1999 for the compliance of all workplaces.

Under the “KOSHA 18001” certification system, those workplaces which have met certification criteria based on the result of KOSHA evaluation of their safety and health management system receive a certificate, together with a certification plaque, from KOSHA.

The safety and health management system under the “KOSHA 18001” program consists of the analysis of the initial status of workplaces, safety and health policies, establishment and execution of plans, inspection and corrective actions, and management review. Each workplace voluntarily determines the detailed method of applying and implementing each element by taking into account the size of workplace, business objectives, management environment, and existence of potential hazards. In 2004, KOSHA presented “KOSHA 18001” program certificates to 45 voluntary participants whose management systems are considered satisfactory. By the end of 2004, a total of 271 workplaces received such certificates.

In addition, KOSHA offers training courses on the “KOSHA 18001” evaluation and practical work for safety and health experts and KOSHA engineers as part of its efforts to promote the safety and health management system. The agency also operates a training program on self-inspection related to “KOSHA 18001”.



Process Safety Management (PSM), Quantitative Risk Assessment(QRA)

Inspection and Verification of PSM Reports

Many pipes are used for the inter-connection of facilities at chemical plants, and the inside of the equipment cannot be inspected during operation. Since a defect on a single component may lead to a critical accident, the safety of the complicated system industry cannot be ensured simply by inspecting individual items of equipment. Fire, explosion, toxic release, and other serious industrial accidents may seriously affect plant workers as well as residents near the plant and its immediate environment.

To remedy such situation, the amended Occupational Safety and Health Act announced on January 5, 1995 introduced a system of submitting a “Process Safety Management Report”. This system has been implemented since January 1, 1996. The Process Safety Management (PSM) is a system by which a workplace with dangerous and hazardous facilities that may cause serious accidents is required to submit a PSM report. Upon receipt of such report, KOSHA examines technical data, evaluates process risks, and formulates plans for safe operation and emergency plans. Such service is expected to contribute to the prevention of serious occupational accidents and encourage workplaces to implement an effective accident prevention system.

Workplaces subject to PSM include the 8 workplaces such as oil refineries and agricultural chemical manufacturers and workplaces using one of the 21 dangerous and hazardous materials, such as chlorine and phosgene, that exceed the threshold quantity. They also include facilities that manufacture, handle, use, or store dangerous and hazardous materials, as well as all other process equipment related to the operation of such facilities.

Workplaces Subject to PSM by Type of Trade and Size

(Unit: Workplace)

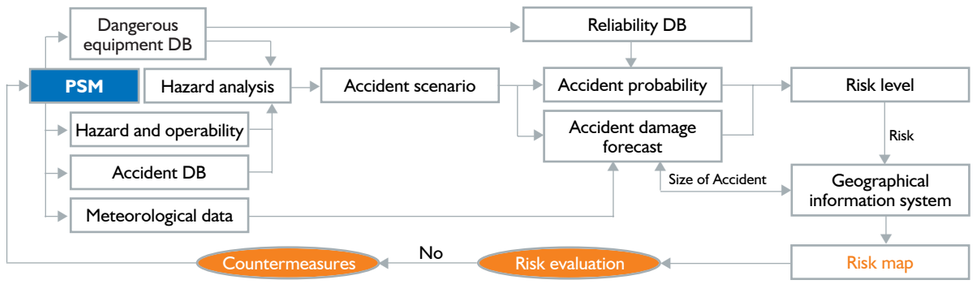
Size of Workplace	Total	Industry									Threshold Quantity
		Sub-total	Crude Oil Refinery	Oil Refinery	Synthetic Resin	Organic Chemicals	Nitrogen Fertilizer	General Oil	Agricultural Chemicals	Explosives and Fireworks	
Total	735	167	34	18	34	-	4	51	10	16	568
300 workers or more	181	29	8	3	6	-	1	8	0	3	152
Less than 300 workers	554	138	26	15	28	-	3	43	10	13	416

Providing Quantitative Risk Assessment(QRA) Software

Fires, explosions, and toxic releases at chemical plants occur due to a wide range of causes including climatic conditions. Predicting when or why these accidents take place is difficult. Likewise, an accident that occurs at an individual workplace may lead to a chain reaction of accidents that cause enormous damage to people and property and result in extensive, economic effects.

To cope with these situations effectively, KOSHA developed QRA software programs after 5 years of hard work to prevent major industrial accidents such as fire, explosions, and leakage of toxic materials and to minimize damage thereafter. In 2003, the agency started providing the programme to the PSM sites. It plans to enable workplaces to utilize fully the software programs beginning 2004 by strengthening the IRMS user training.

Schematic Drawing of Risk Management



Inspection of Dangerous or Hazardous Machinery, Equipment and Facilities, and Training

Since July 1, 1991, KOSHA has been conducting inspection on 6 types of dangerous machines and equipment, including cranes and pressure vessels with a high risk potential for accidents pursuant to the Occupational Safety and Health Act. Under this inspection system, all manufacturers, importers, installers, and users are required to undergo 3 stages of inspection: design inspection prior to manufacturing, completion or performance inspection after manufacturing (or inspection during the process of manufacturing), and periodic inspections during use.

A real name-based site inspection system has been implemented to ensure expediency of evaluations, and an inspector qualification system has been implemented to improve inspector qualifications and expertise. In addition, to ensure the reliability of inspections and scientifically based evaluations, KOSHA owns over 2,100 latest inspection equipment including industrial endoscopes, ultrasonic flaw-detector, ultrasonic thickness gauges, and brake stop timer.

KOSHA attends international standard certification conferences promoted by ISO, IEC, and other international inspection bodies to improve inspection technologies and strengthen its status as an inspection body. As a result, KOSHA acquires advanced technologies through overseas training and exchanges with overseas inspection agencies for dissemination to workplaces.

Types of Inspections Performed

(Unit: Case)

Inspection type / Year	Total	Design Inspection	Completion Inspection	Performance Inspection	Periodic Inspection
2004	87,148	8,778	23,088	12,404	42,878
2003	77,949	8,083	21,642	11,342	36,882
2002	72,365	7,688	17,904	9,357	37,416
2001	59,523	6,621	15,255	7,337	30,310

Types of Machines Inspected

(Unit: Case)

Inspection Type / Year	Total	Cranes	Lifts	Pressure Vessels	Presses & Shearing Machines	Rollers
2004	87,148	42,268	8,546	35,693	608	33
2003	77,999	36,848	8,592	31,661	882	16
2002	72,365	36,528	5,886	28,939	1,010	2
2001	59,523	30,176	5,360	22,901	1,075	11

Safety Certification and Performance Tests for Dangerous or Hazardous Machinery, Equipment and Facilities

"S" Mark Safety Certification

The "S" mark safety certification system was introduced in November 1997. The system aims to evaluate product safety and reliability and the manufacturers' quality control systems comprehensively to help machine and equipment manufacturers design and manufacture safe products and prevent industrial accidents by enabling manufacturers to distribute safe products.

Safety Certification is required mainly for industrial machinery; nonetheless, it applies to all items ranging from simple machines such as safety devices, PPE, and machinery and equipment parts including simple machines to advanced semiconductor manufacturing equipment.

The criteria of the "S"mark Safety Certification are divided into essential standards, common standards, and product-specific standards. Since these standards are governed by globally accepted international standards, i.e., ISO and IEC and EN (European Norm), overseas certifications, including the CE mark, they can easily be acquired for most machinery by simply obtaining "S" Mark Certification through the European certification institution (the Notified Body) with which KOSHA has signed a mutual cooperation agreement.

Initially, "S" Mark Safety Certification aroused the interest of mainly domestic enterprises, but since 2000 the number of consultation and applicants from Japan, Germany and UK has been increasing (as of the end of 2004, KOSHA has received 546 applications from 152 foreign enterprises).

"S" Mark Accomplishments by year

(Unit: Model)

Year	Accomplishments	Certified	Results EMC Testing	Returned
Total	3,498 (1,044)	2,361 (516)	222 (222)	915 (306)
2004	734 (300)	487 (126)	103 (103)	144 (71)
2003	498 (194)	335 (97)	67 (67)	96 (30)
2002	433 (124)	359 (75)	27 (27)	47 (22)
2001	759 (195)	535 (99)	25 (25)	199 (71)
1997~2000	1,074 (231)	645 (119)	-	429 (112)

* Figures in ( ) denote the number of company

Performance Tests for Safeguard and Personal Protective Equipment (PPE)

KOSHA operates a “Safeguard and Personal Protective Equipment Performance Approval System” by which it conducts performance tests on a total of 105 kinds of equipment with a high accident rate by evaluating product structure, material and performance: 65 kinds of dangerous machinery and equipment and safeguard, i.e., presses and cranes and 40 kinds of PPE, i.e., safety helmets and dust/mist masks. This inspection service aims to ensure use of hazard-free safeguard and PPE at workplaces under the Occupational Safety and Health Act.

KOSHA checks whether the initially approved quality is maintained for the safeguard and PPE already available in the market. It also conducts tests on similar products which have been newly manufactured or imported to ensure that no defective devices and/or equipment are distributed.

To help domestic manufacturers with R&D efforts and create a better working environment during the design and production of safeguard and PPE, KOSHA has assisted them in the development of high-performance products by the constant provision of R&D subsidies. The newly developed products include double-ended dust/mist masks designed to reduce worker fatigue, synchronized presses and shearing machines, and optical-electronic PPE exhibiting reduced electromagnetic influences.

To enhance testing reliability according to the ISO 17025 standard, an international evaluation standard for testing agencies, KOSHA was designated as an authorized public testing agency by the Korea Laboratory Accreditation Scheme (KLAS) for 137 test items including epidemiological and electrical fields. As a result, all KOSHA test reports are recognized by testing agencies of all countries because they comply with the standards established by the International Laboratory Accreditation Cooperation (ILAC) and Asia-Pacific Laboratory Accreditation Corporation (APLAC).

In June 2002, KOSHA was designated as an authorized calibration laboratory for height gauges by the Agency for Technology and Standards. In the process, it has ensured the traceability and reliability of the measuring equipment it calibrated.

In September 2003, KOSHA entered into a technical tie-up with Japan’s Technological Institute of Industrial Safety, a world-renowned certification agency for explosion-proof products. Under this agreement, the results of tests conducted on electrical machines and equipment of explosion-proof structures will be accepted by both parties. The two organizations also promote the exchange of technical information and hold various lecture meetings and seminars, providing domestic manufacturers with a means of making inroads into the Japanese market.

Performance Tests Conducted Annually

(Unit: Case)

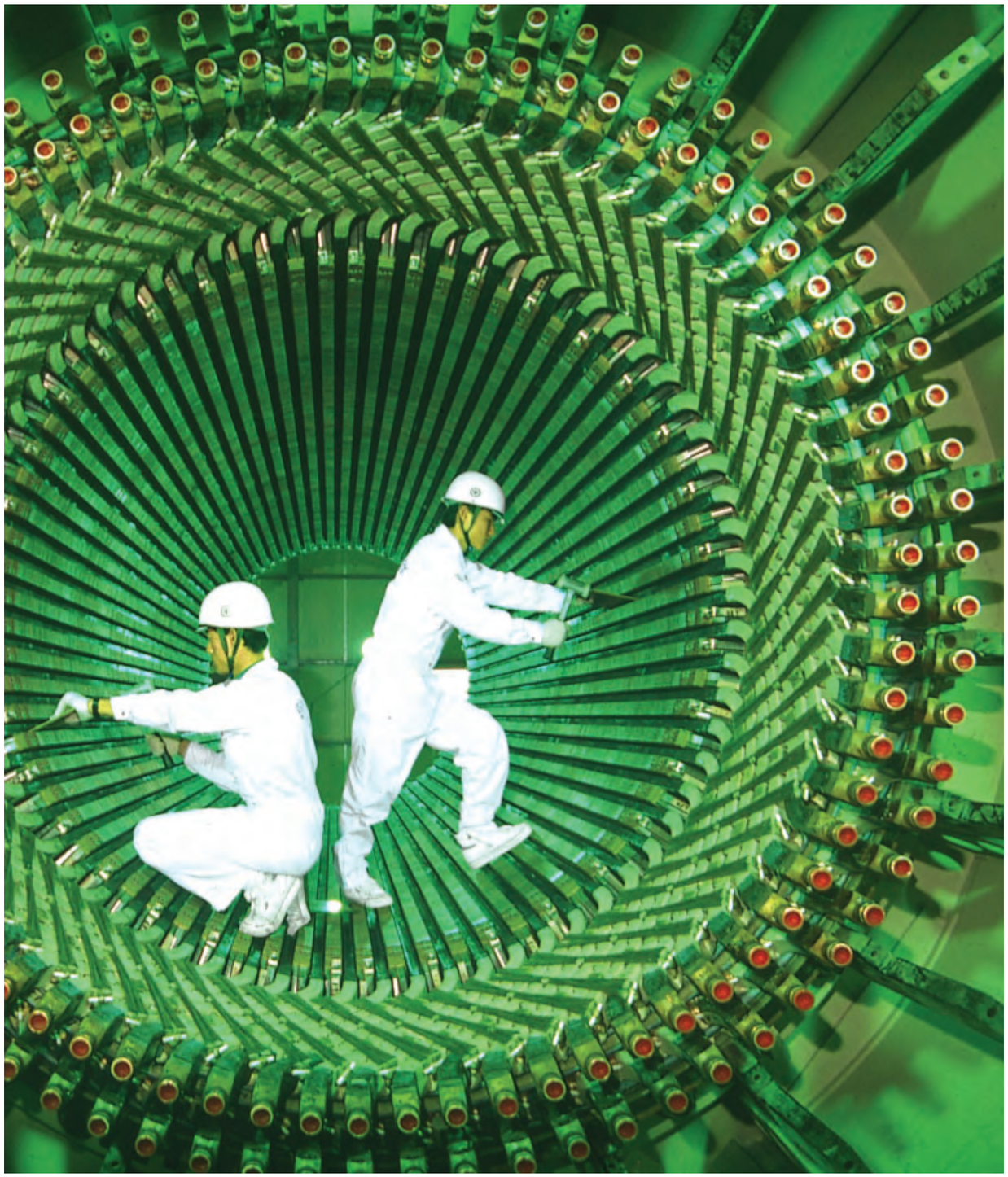
Item	Total	2004	2003	2002
Performance Tests	7,180	3,464	1,861	1,855

Annual Inspections

(Unit: Case)

Item	Total	Passed	Rejected	Rejection Rate(%)
Total	512	423	89	17.4
2004	89	84	5	5.6
2003	106	93	13	12.3
2002	317	246	71	22.4

Occupational Safety and Health Training



Offering Safety and Health Training Programs

To create healthier and safer working environments in the industry, KOSHA particularly emphasizes the functions of occupational safety training. KOSHA offers training programs designed in ways that better meet the respective needs of employers, supervisory personnel, and employees, focusing on reducing the causes of industrial accidents.

Project Aimed at Creating Self-Regulatory Safety Management Model

KOSHA holds safety and health seminars for managements to assist them in establishing an effective self-regulatory safety management system. The agency encourages managements in enhancing investment in safety and health within workplaces by promoting their interest in safety and health ; thus contributing greatly to the reduction of workplace accidents and boosting corporate competitiveness.

In addition, KOSHA attempts to make employers aware of the importance of safety and promote the effectiveness in self-regulatory safety and health management at workplaces by providing training programs for the employers of 10 leading risky industrial sectors with less than 50 employees (which accounts for approximately 68.0% of all industrial accidents). The training program focuses on presenting cases of accidents, analyzing their causes, and developing the necessary countermeasures.

Self-regulatory Safety Management Training Course

(Unit: Person)

Item	2004	2003	2002	2001
Safety and health seminars for managements	2,036	1,911	2,058	1,825
Training for owners of enterprises with less than 50 employee	16,462	20,894	11,420	18,164

Fostering Safety and Health Specialists

Offering Regular Training Program per Area

As part of its specialist development program, KOSHA provides basic training courses, practice-centered advanced training courses and distance learning for safety and health managers and supervisors of construction sites and manufacturing plants to prevent industrial accidents and occupational diseases and improve workers' health. It conducts in-service training to enable safety and health managers to perform fieldwork effectively.

It also provides mail correspondence program to improve supervisors' competence, thus making them more aware of safety and health within workplaces and always keep safety in mind while working. Since the latter half of 2001, KOSHA has been offering cyber training programs (4 courses) through the Internet as part of its efforts to keep up with the changes in the social environment effectively, i.e., technical development of the IT sector and rapidly increasing number of Internet users.

(Unit: Person)

Item		2004	2003	2002	2001
Total		12,412	12,942	11,586	12,794
Basic training course		412	643	526	534
Advanced training course		7,931	7,820	7,120	7,977
Distance Learning	Mail	3,531	3,923	3,727	4,057
	Internet	538	556	213	226

On-the-Job Safety Training

KOSHA provides free on-the-job training for construction safety to help employees recognize work-related risks and the necessity of complying with safety regulations by allowing them to experience physical injuries sustained by falling objects and falls. This on-the-job construction training (conducted in 6 training centers) involves 4 hours of experiments and practical training on over 30 construction safety-related facilities, including the use of safety belts and harness, breaking tests of fall-prevention nets and safety helmets, for construction employees and supervisors.

(Unit: Person)

Item	2004	2003	2002	2001
On-the-job training for construction safety	36,700	35,710	28,854	23,733

Trainees (95.6% of the total) said that the training was helpful in improving safety consciousness, suggesting a high satisfaction index with respect to training. In addition, trainees can use the computer-based virtual reality technology to tour the workplace where dangerous work such as press operation is being performed and discover the risk elements through 3D images. They can also experience the hazards and process of accidents at plants or construction sites through a computer-graphic 3D video. For this, KOSHA operates 1 Virtual Safety Training Center whose operation is linked with the on-the-job construction safety training center.

The Virtual Safety Training Center operates nine 3D videos highlighting the manufacturing sites and 20 types of virtual reality work operations showing press, welding, conveyer, transporting, portable cranes, work with risks of falling, machine tools, excavation work, and school and family life. 1-hour video training programs are offered, free of charge, to workers, safety and health personnel, members of the general public, and students.

(Unit: Person)

Item	2004	2003	2002	2001
Virtual safety training	45,985	15,866	19,945	13,911

Early Safety Training

To prevent accidents effectively, everyone should voluntarily participate and cooperate under the positive awareness campaign on safety. It is extremely essential that children and primary, middle, and high school students form a sense of safety consciousness and develop safety habits during their formative years.

As part of the early safety training program, KOSHA's Safety Culture Promotion team conducts free training courses for 2 days (16 hours) for kindergarten and primary school teachers to foster safety culture instructors with the necessary qualifications and moral influence. It also promotes children's safety awareness by supplying safety training materials and animated presentations that are appropriate for students ranging from kindergartens to primary schools.

To prevent accidents in schools, instill safety awareness and develop the attitude of students through school courses and safety activities, KOSHA operates a model safety school designated by the city and provincial administration of education. The agency provides all training materials and instructors as well as the finance required for the operation of the model school.

Project Name	2004	2003	2002	2001
Training for safety instructor	1,698 persons	1,700 persons	1,508 persons	1,367 persons
Operation of designated model schools for safety training	64 schools	64 schools	64 schools	64 schools

Enhancement of Safety Awareness

To enhance safety awareness among employees and employers and to create an effective safety culture nationwide, KOSHA is implementing various PR and campaign activities through various media.

National Safety Culture Movement

In the latter half of 1995, the government started the safety culture movement with the participation of civilian, government, and other organizations covering all social sectors to establish a pan-national safety culture.

To implement such campaigns, a safety culture promotion body consisting of 14 members and 1 secretary was organized. Members of the body include 7 officials from the government, i.e., Prime Minister as Chairman, Minister of Education and Human Resources Development, Minister of Government Administration and Home Affairs, Minister of Commerce, Industry, and Energy, Minister of Construction and Transportation, Minister of Science and Technology, Minister of Labor, and Director of the Office of Administration and Coordination for the Prime Minister, and 7 representatives from the private sector, i.e., Chairman of the Korea Employers' Federation, Chairman of the Federation of Korea Trade Unions, Chairman of the Korea Broadcasters' Association, Chairman of the Korea Construction Association, Director of the Insurance Supervisory Board, Representative from the Citizens' Coalition for Economic Justice, and Chairman of Korea Women's Association.

As of April 1996, the safety culture implementation committee declared the 4th (or on the following business day if the 4th falls on a holiday) of each month as "Safety Inspection Day". The project seeks to enhance public safety awareness and to implement monthly accident prevention and risk detection activities.

(Unit: Place)

Project Name	2004	2003	2002	2001
Safety culture organization	18	18	18	18
"Safety Inspection Day"	454	556	635	303

Week of Occupational Safety and Health

Together with the Ministry of Labor, KOSHA holds the events of Week of Occupational Safety and Health every year pursuant to the Occupational Safety and Health Act. With the first week of July of each year declared as Occupational Safety and Health Week, occupational safety and health personnel are rewarded for their meritorious contributions to the prevention of industrial accidents. An accident prevention atmosphere is created under this campaign by exchanging accidents prevention technology and encouraging free discussions.

WOSH events are classified into 3 major categories:
(1) The Occupational safety and health Convention, which is introduced to reward outstanding safety and health personnel for their services and promotion of national safety awareness;
(2) “International Safety, Fire, and Security Equipment Exhibit”, which is held to improve domestic accident prevention technologies and exchange information on accident prevention by comparing and displaying superior safety and health-related machines and products and
(3) Technical seminars and symposia, which are held to introduce new field-specific techniques and technology related to domestic safety and health and to exchange information. These seminars and symposia provide participants with an ideal opportunity for exchanging accidents prevention techniques.

Aside from safety and health personnel, participants to the industrial safety campaign week are expected to include women’s organizations, teachers, students, and representatives of labor unions to obtain national consensus vis-a-vis industrial safety and health . This suggests that the culture of safety is being promoted in all corners of society, enabling it to take root as a crucial factor.

PR Activities through the Media

To enhance safety awareness among employees and employers and to create an effective national safety culture, KOSHA provides safety and health information and promotes its accident prevention activities through various media.

KOSHA mainly uses broadcasting, visual media, and printed materials for its PR activities. For PR activities implemented through the broadcasting media, KOSHA strives to practice safety awareness and create a safe and healthy social atmosphere by delivering comprehensive safety and health information via TV, Radio, CATV, and the Internet.

On the other hand, KOSHA utilizes various visual media, such as theater commercials, digital advertisements, and envoys Honorary Industrial Safety Ambassador for occupational safety awareness campaigns in heavy pedestrian traffic areas.

With the help of the press, KOSHA holds a social gathering on accidents prevention to encourage social interest and participation in ensuring safety. Participants include members of the press corps, executives of news companies, TV drama writers, and other persons wielding considerable social influence.

Furthermore, the agency has an Occupational Safety and Health Exhibition Hall at its headquarters to enhance safety consciousness further by delivering safety messages to the public and offering various attractions.

PR Activity Summary

Item	2004	2003	2002
Publicity through the broadcasting media	113 parts	139 parts	169 parts
Publicity through visual material	88 places	87 places	116 places
Publicity through the press	6,096 times	7,451 times	7,262 times
Occupational Safety and Health Hall	15,625 persons	14,512 persons	12,866 persons

Accident-Free Movement at Workplaces

Management of Participants

Employers who want to launch an accident-free movement must first inform all employees of their intention to take part in the movement during safety training or during regular morning calls. Likewise, employers must report the commencement of the accident-free movement to KOSHA's regional offices within 14 days of the date of commencement.

KOSHA provides each workplace planning to put the accident-free movement into practice with all the necessary training materials after receiving notice of the commencement of the movement. It supports the revitalization of the accident-free movement at each workplace.

A workplace which has completed the number of days (hours) required by size and type of business after reporting the commencement of the campaign needs to advise a relevant regional office and area office within 60 days from the date it achieved its targets.

Within 14 days from the date of receipt of a report of achievement, the regional office and area office will conduct an examination to determine the appropriateness of the type of business, established number of target accident-free hours, calculation of the number of target days (hours), and occurrence/non-occurrence of accidents.

If no discrepancies are found, the area office notifies the workplace of the results of the examination. KOSHA's letter of commendation and an accident-free certificate (awarded by KOSHA regional office and training center) will be presented to all workplaces achieving either a zero-accident rate or reduced accident rates equivalent to 100%, a twofold or threefold improvement on their target rates. All workplaces making an improvement equivalent to fivefold or higher will receive an accident-free certification plaque, along with the KOSHA President's letter of commendation and prizes to the persons who have contributed to such improvements.

Development and Dissemination of Accident-Free Campaign Techniques

To revitalize and promote the accident-free campaign effectively, KOSHA has developed and disseminated to each workplace helpful techniques including a 4-round risk predicting technique, a one-point risk predicting exercise, and close-call cases. Each workplace modifies and changes the techniques according to its circumstances.

Workplaces Participating in the Accident-Free Campaign by Size and Year

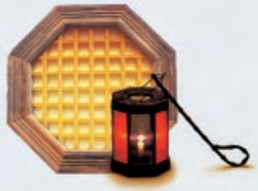
(as of December 31, 2004, Unit: Place)

Item	Total	Less than 50 workers	50~99	100~299	300 or more workers
2004	2,570	1,294	569	536	171
2003	4,654	3,008	886	621	139
2002	5,611	4,078	842	574	117
2001	5,147	4,441	419	231	56
as of 2000	88,643	56,685	17,556	11,197	3,205
Total	106,625	69,556	20,272	13,159	3,188

Workplaces that Achieve Targets by Year

(as of December 31, 2004, Unit: Place)

Item	Total	50%	100%	Two-fold achievement	Threefold	Fourfold	Fivefold	Tenfold or higher
2004	1,210	0	604	228	197	0	126	55
2003	1,003	0	374	255	176	0	146	52
2002	1,013	0	406	209	200	0	154	44
2001	1,209	0	473	257	248	0	199	32
as of 2000	22,127	1,595	11,038	4,945	2,770	644	1,015	120
Total	26,562	1,595	12,895	5,894	3,591	644	1,640	303



Publication and Distribution of Technical Information and Data

Publication and Distribution of Safety and Health Technical Materials

Publication and Distribution of Safety and Health Technical Materials

To boost safety activities and encourage self-regulatory safety management in workplaces, KOSHA distributes the necessary safety and health materials on each industrial sector to the relevant workplaces. These materials include periodicals, pamphlets, posters, booklets, stickers, and videos. Multimedia materials are also available online for easy access by employers and employees.

Periodicals include 2 monthly publications, i.e., Safety and safety and health Guide, and 1 biweekly publication, i.e., Safety and Health Information. Distributed to some 10,000 large and medium-sized workplaces, Safety and Health features safety and health technologies and information required for self-regulatory safety management. On the other hand, Safety Guide is given to the leader of workplace safety as the honorary occupational safety inspector. Safety and Health Information (70,000 copies per issue) provides safety and health news and accident prevention information to small workplaces.

Non-periodical materials are published and distributed to employers and workers to enhance accident prevention awareness among them and provide them with safety and health technologies. The materials are classified into audio visual materials, multimedia materials and printed materials, which include pamphlets, posters, booklets, stickers. Audio visual materials include video, transparency (TP), and display panels used as training materials in safety and health education at workplaces. Recently, KOSHA has developed multimedia materials in CD-ROM and videotape formats for distribution to enhance the utilization of safety and health materials through computers.

Depending on their contents and the characters, the materials are divided into those designed to support self-regulatory safety management, support workplaces vulnerable to accidents, and promote public awareness of accidents prevention and those designed to support accidents prevention at workplaces with less than 5 employees. With Korea witnessing an influx of foreign workers, special technical materials are being developed to assist them in accident prevention. The safety and health materials developed for foreign workers feature accidents prevention technologies related to dangerous machines, equipment, and facilities they use to a large extent. Developed in the form of pamphlets, posters, video, and display photo panels and translated from Korean to 10 different languages, i.e., English, Chinese, Indonesian, Bengali, Vietnamese, Uzbek, Thai, Sri Lankan, Mongol and Pakistani, these materials also contain fundamental knowledge on industrial accident prevention for foreign workers.

Safety and Health Publications

(Unit: Type)

Item	2004	2003	2002	2001	2000
Total	610	595	506	416	680
Periodicals	3	3	3	3	3
Non-Periodicals	607	592	503	413	677

KOSHA Self-Regulatory Safety Club

To ensure that voluntary safety management is effectively implemented at large and medium-sized workplaces, KOSHA operates a self-regulatory safety club that provides safety and health information and materials required for safety management. The self-regulatory safety club was established in May 2001. Currently, the number of club members is 2,184, including 711 (32.5%) manufacturers and 1,473 (67.5%) construction companies.
KOSHA provides members of this club with “monthly training materials,” safety and health information and technical materials, PR materials, and audio and video training aids required in conducting safety training for their workers. And safety and health news and various educational and technical materials are provided via its website.

Industrial Accident Prevention Information Network

Safety and Health Technology Information Services

KOSHA has built its database containing domestic and foreign safety and health materials. Dubbed as the KOSHANET service (http://www.kosha.or.kr), it provides such materials to workplaces, workers, safety and health personnel, and the general public free of charge (the number of KOSHANET members is 168,850 as of May 31, 2005).

Materials provided through the KOSHANET cover 12 fields including government policies and legal information on Safety and Health, information on safety and health technology, the Material Safety Data Sheet (MSDS), KOSHA CODE, and cases of accidents. In particular, information on over 50,000 kinds of MSDS for toxic chemical products is very popular among the members. Currently, there are over 175,000 records containing such information saved to the DB (equivalent to 520,000 sheets of A4 paper).

Since 2001, KOSHA has begun providing diversified technical information services through the Internet, including various Safety and Health-related video materials and virtual safety and health training. In 2004, KOSHA launched a website integrating the KOSHA website and the KOSHANET service that used to be operated separately. The recently introduced integrated website acts as a cyber civil affairs office that receives civil petitions and applications for regular inspection and training through the Internet and provides the Closed User Group (CUG) service that serves as a venue for managers from each field to meet through online systems. Safety managers and workers at workplaces can thus exchange opinions and solve technical problems through the KOSHANET.

KOSHA plans to open a cyber simulation center in the future, expand high quality safety and health web contents, and provide a community with various services in the cyber world. By building a safety and health website that can be easily accessed by anyone and offering related information to the general public and safety and health personnel, the agency is expected to play an important role in preventing accidents at industrial sites.

Operation of Information Center

KOSHA has been promoting a plan to publish an “Occupational safety and health Dictionary” (tentatively named) that contains those terms used for the occupational safety and health sector in a systematic manner. To implement this task, the agency plans to form a compilation committee consisting of over 40 persons to complete the publication before the second half of 2006. The dictionary, which will be intended for the those who majored in safety engineering and frontline safety and health personnel, will encompass a summary of administrative terms such as safety training and PR, as well as general terms used for machinery, electricity, the chemicals industry, construction, industrial medicine, occupational safety and health management. In addition, to enhance the dictionary’s professional format and accuracy, KOSHA plans to commission various specialists from related organizations and academia to conduct review and editing of its contents. By the end of 2004, it had selected about 3,670 essential terms for compilation, and had finished the explanation of some 40% of the terms. In 1991, the agency published this dictionary containing a total of 2,871 terms (500 pages).

To provide assistance in taking appropriate measures regarding cases involving Safety and Health, KOSHA translates into Korean and then distributes a variety of technical materials on important subjects regarding industrial safety that are published in foreign countries.
At a time when the prevention of lumbago and musculoskeletal disorders is being stressed KOSHA translated and distributed “Upper Limb Disorders at the Workplace/ Aching Arms(or RSI) in Small Business” published by Health & Safety Executives (HSE), UK and “Accident Prevention Measures for Older Fishermen” published by the Association for Promoting Safery and Sanitation for Seafarers to the safety and health managers of industrial sites. In addition, it translated and distributed “Enough Workplace Stress: Organizing for Change” published by the Canadian Union for Public Employees pertaining to work-related stress to related organizations and workplaces. This is receiving a positive response from safety personnel.

Other translation projects include “Guidelines for Analyzing and Managing the Security Vulnerabilities of Fixed Chemical Sites” and “A Method to Assess the Vulnerability of U.S. facilities” published by the Chemical Safety and Hazard Investigation Board (CSB) of the US, as well as various accident reports. By providing translated information through online systems, KOSHA has presented technical and managerial matters on the danger of serious accidents and KOSHA’s recommended actions to be taken an accident has occurred.

For other information services, KOSHA provides the originals of such publications and through the intranet services this not only facilitates convenience to library users but enables easy access to the library of the KOSHA main office by its staff working at its 20 regional head offices and area offices. This service allows users in remote areas to conveniently search materials from their own PC without the need to visit the library.

Inquiries regarding the records pertaining to safety and health and detailed information on the articles published in KOSHA’s English newsletter should be sent to KOSHA via cissys@kosha.net.

R&D on Occupational Safety and Health

KOSHA's Occupational Safety and Health Research Institute (OSHRI) was established to conduct its medium- to long-term R&D activities necessary to prevent accidents at industrial sites. The institute conducts research on safety and health policies and systems, safety engineering including machinery, electricity, the chemicals industry and construction, and industrial health including working environments, occupational diseases and toxic chemical substances.

Research on Safety Management Policies

OHSRI performs investigation, analysis, development and evaluation of systems and policies related to occupational safety and health, sets medium- to long-term targets for safety and health research, and lays down the foundation for effective and systematic industrial safety and health research through overall adjustment.

The institute also produces basic information by analyzing demand for medium- and long-term occupational safety and health research and surveying the trends of industrial safety and health and presenting policy directions through the analysis of the effects of implementing safety management policies.

Research on Industrial Safety

As a national body in charge of Industrial safety research, Research Department of Safety Engineering carries out various R&D activities to prevent industrial accidents, and provides investigative work and technical services to workplaces nationwide.

The department is organized into three groups: mechanical safety group, electrical safety group, and constructional safety group. To solve various difficult problems encountered in workplaces, it occasionally performs interdisciplinary researches and also carries out joint research with industry, universities and other research institutions, in addition to promoting international research exchange.

In addition, using the latest scientific techniques, the department conducts in-depth analysis of the causes of recent accidents and establishes comprehensive prevention measures. It also holds seminars focusing on the issues drawing public attention such as safety at laboratories to further foster a safety culture and to disseminate appropriate technical assistance pertaining to accident prevention.

To propagate our research results widely, we publish a final report at the end of each research project, and constantly promote the holding of domestic and international seminars including joint seminars and information exchanges with overseas safety research bodies including The National Institute for Industrial Safety (NISS) of Japan, in addition to publishing articles in domestic and international technical journals.

Research on Industrial Hygiene

KOSHA's department in charge of industrial hygiene aims at developing the necessary strategies and technologies to protect workers against harmful physical, biological and chemical factors. It recognizes that improving working environments should be prioritized to prevent occupational diseases as part of its efforts to provide technical support to workplaces with hazardous materials that exceed exposure levels vis-a-vis the handling of toxic materials such as chemical substances. Thus, in addition to research on the improvement of the legal system at a national level pertaining to industrial hygiene, KOSHA has conducted Health Hazard Evaluations (HHE) for workers engaged in harmful work and research on industrial ventilation, noise and vibration, and evaluation of worker exposure to hazardous chemicals. It also develops related guidelines and assess the proficiency of workplace exposure monitoring bodies.

For HHE, KOSHA conducts the monitoring of worker exposure levels to specific harmful levels and proposes 10~15 projects per year to undertake the necessary measures for improvement based on the evaluation results. Its research on industrial ventilation allows it to develop and offer ventilation models permitting their application to workplaces by utilizing computational fluid dynamics (CFD), while its research on noise and vibration enables it to propose plans to reduce worker exposure to noise and vibration through detailed technical analyses and evaluations of high-risk job categories.

The projects pertaining to recent social issues about the working environment include research on indoor air quality (IAQ) and the evaluation of worker exposure to substances affecting EDs (endocrine disrupters), and the development of guidelines to improve such working environments.

The reliability assessment program conducted at some 120 workplace exposure monitoring bodies in Korea pertains to the assessment of heavy metals and organic compounds being conducted twice a year.

As a national body that supervise the reliability of the information from domestic monitoring bodies, the department in charge of occupational health and hygiene under the OSHRI has been maintaining rigorous proficiency standards by participating in Proficiency Analytical Testing Program (PAT) conducted by American Industrial Hygiene Association (AIHA) 4 times a year since 1992.

Quality Assurance Program for Workplace Exposure Monitoring

Materials	2004		2003		2002	
	1st half	2nd half	1st half	2nd half	1st half	2nd half
Organic Chemicals	98/108 (90.7)	103/111 (92/8)	98/107 (91.6)	97/113 (94.2)	102/113 (89.3)	88/96 (91.7)
Metals	102/107 (95.3)	107/110 (97.3)	105/109 (96.3)	101/104 (97.1)	111/115 (96.5)	91/97 (93.8)

Research on the Prevention of Work-related Diseases

Since the late 1990s, there have been changes in the structure of industry as well as population of working forces. With increase of ratio of middle-aged and elderly people and more interest in health issues including stress, there has been great increase in cerebro-vascular and musculoskeletal diseases accepted as work-related. Thus, KOSHA established Occupational Disease Prevention Research Team in April 2004 to develop prevention management plans applicable to workplaces with great risk of these occupational diseases.

The research team carries out research focusing on: (1) Prevention measures against work-related diseases including cardio-vascular diseases and musculoskeletal disorders; (2) Protection of the health of female and aged workers; (3) Work physiology and organizational psychology; (4) Development and dissemination of a comprehensive workplace health management program; (5) Development of an industrial health indices; and (6) Work-related disorders prevention policies and systems.

For these areas, the research team conducted the following research projects in 2004: (1) Development of an Ergonomics program against the musculoskeletal disorders fit for the characteristics of each job; (2) Research on policies to reduce work-related diseases and establish prevention measures through the detailed analyses of work-related disease compensation cases in 2003; (3) Development of work-related stress assessment tools and their standardization; (4) Development of guidelines on health management of female worker .

In addition to these research projects, the research team investigated and analyzed work-related diseases and the features in detail for each quarter in 2004, as well as epidemiological investigation for clarifying the causes of work-related diseases including cardio-vascular disorders and musculoskeletal diseases. The team also took part in formulation and revision of KOSHA Code and revised the guidelines for the evaluation of the potential occurrence and follow-up management of cardio-vascular diseases at workplaces.

Occupational Disease Diagnosis

Research on occupational disease prevention aims at developing technologies that enable the early detection and prevention of occupational diseases and establishing the necessary proper measures.

In 2004, the activities KOSHA conducted to prevent occupational diseases are as follows: evaluation of the health disorders of workers engaged in the incineration of industrial wastes, forecasts of the occurrence of lung cancer by a cohort of workers with pneumoconiosis, simultaneous analysis of urinary metabolites of dimethyl formamide (DMF), development of bio-markers for early detection of occupational diseases of workers who are exposed to harmful substances by Proteomics; development of standard materials in urine for biological monitoring of benzene, n-hexane and cadmium.

The reliability assessment program were conducted on 3 areas, that is, biological monitoring, pneumoconiosis diagnosis, and audiometry evaluation for about 100 organizations of special health examination in Korea twice a year.

Quality Assurance Program for Biological Monitoring

Materials	2004		2003		2002	
	1st half	2nd half	1st half	2nd half	1st half	2nd half
Organic Chemicals	104/116 (90)	110/118 (93)	97/111 (87)	106/113 (94)	103/110 (94)	99/111 (89)
Metals	102/117 (87)	95/118 (81)	89/115 (79)	99/112 (86)	109/112 (97)	97/113 (86)

Epidemiological Investigation & Diagnosis of Workers' Health

Epidemiological Investigation

In case of health disorder whose causes cannot be clearly determined by assessment of the working environment, medical examination or MSDS data, owners and/or industrial medical specialists may request the OSHRI to conduct an epidemiological investigation. Thereby, The OSHRI conducted epidemiological investigations and the results were used to clarify the causes of occupational diseases and establish prevention measures against new types of occupational diseases by monitoring working environments and investigation of working conditions, clinical tests, and health examination of the workers in each department and process. In 2004, the OSHRI carried out epidemiological investigations on the following substances : benzene, 1,3-butadiene, antimony trioxide, etc.

Number of Investigated Cases

Year	2004	2003	2002
Total	10	49	76
Internal selection	-	46	35
External request	10	3	41

Diagnosis of Work-related Diseases

The Korea Labor Welfare Corporation, an umbrella institute of the Ministry of Labor, may request the OSHRI to diagnose work-related diseases when it is difficult to determine whether a patient referred to the corporation for medical care has a work-related disease, or when a new work-related disease is suspected. The institute then reviews current medical literature, evaluates working environments, and conducts a comprehensive medical evaluation. It consolidates all data, draws conclusions, and reports the findings to the Corporation.

Number of Investigated Claimed Cases requested for the evaluation of work-relatedness

Year	Total	Accepted	Rejected	Undetermined
2004	99	12	17	70
2003	134	36	46	52
2002	132	42	46	44

Chemical Material Control (Chemical Safety and Health Research Center)

Control of Industrial Chemicals

The goal of Chemical Material Research Center is to contribute to the prevention of industrial accidents and occupational diseases induced by industrial chemical materials. For this purpose, the center assesses the domestic chemical material in the harm and hazard. The center also performs MSDS' updating and offers data on harmful chemical materials, promotes a laboratory accreditation and supports a variety of analysis to settle down early in the research area of industrial chemical properties.

Hazard assessment of chemical materials using at workplaces:

The center performs the hazard assessment of chemical materials which are manufactured, imported and currently used, with the objective approaches such as the comprehensive analysis of data and the determination of their physicochemical properties, and so on.

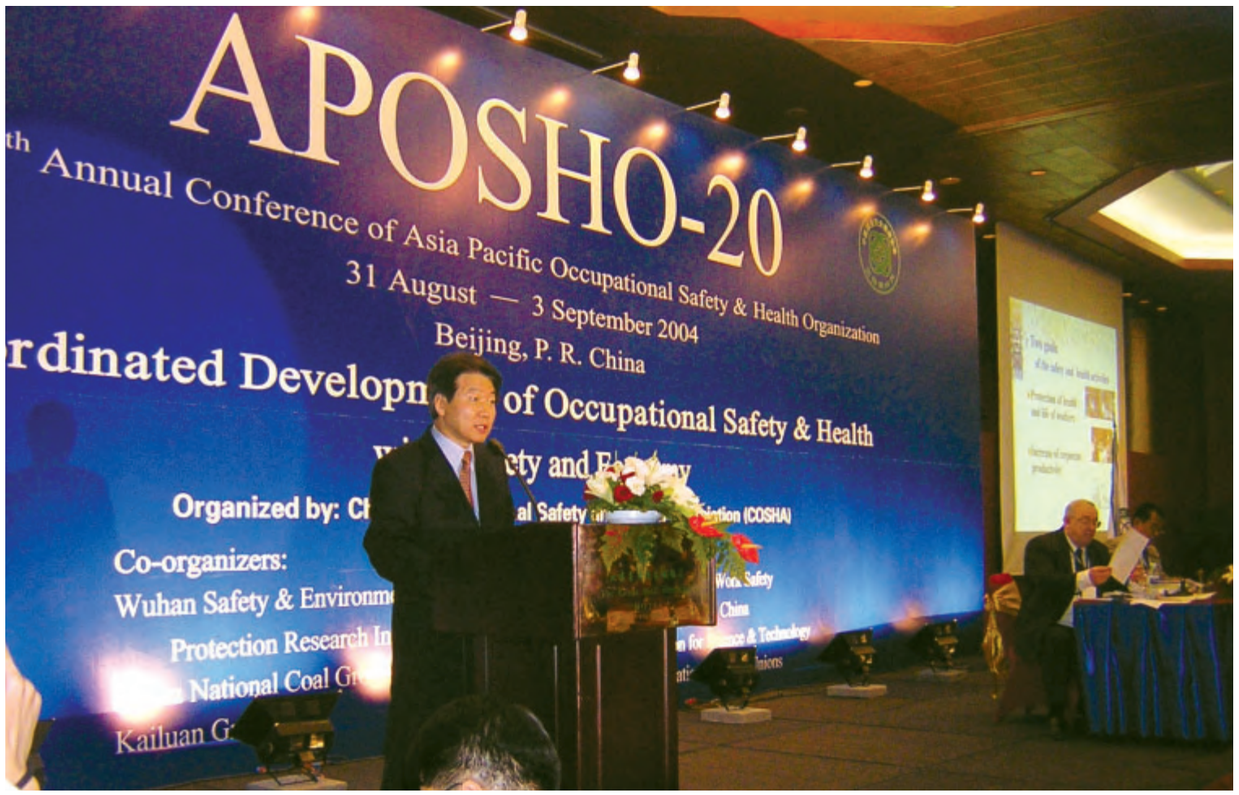
Examination new chemical materials in the harm and hazard

The center high-technically examines the physical hazard and the health harm for new chemical materials reported by business owners and for each process which use them, respectively. The center, if necessary, performs the toxic tests and suggests a measure to protect the health of workers from them in terms of engineering and hygienics.

Preparation and updating of the Material Safety Data Sheet (MSDS)

The center prepares and updates MSDSs for materials of which MSDSs have not completely filled yet, using the domestic and foreign data related to the chemical material. These new MSDSs offer the necessary information to workplaces which use some harmful chemical materials and also contributes to the prevention of serious industrial accidents, a environmental contamination and occupational diseases in advance.

International Cooperation



The international trend in occupational safety and health involves strengthening the self-regulatory safety and health management of enterprises and consolidating international safety and health standards. As such, international trade regulations on the technical standards for protecting life, health, and the environment of the importing nation and its people are reinforced.

To cope with the changes of the times, KOSHA plans to introduce advanced technologies in all fields by entering into agreements and forging cooperative partnerships with foreign safety and health institutes and international organizations. As a member of OECD, the agency has established innovative programs in the field of safety and health, assisting developing countries in establishing similar programs based on Korea's accident prevention technologies and support systems.

Cooperation with Advanced Countries and Organizations

As part of its efforts to improve accident prevention technology, KOSHA conducts projects in various fields in cooperation with advanced accident prevention institutions.

A cooperation agreement on industrial safety was signed by Korea and Germany in July 1987. As of 1995, however, the Korea-Germany cooperative project was turned over to civilian management. KOSHA also introduced new technologies such as "risk assessment", "explosion-proof inspections", "crane safety", "product liability (PL)", and "electromagnetic wave safety" from Germany's TUV (Technischer Uberwachungs Verein), BG (Berufsgenossenschaften), and PTB (Physikalisch-Technische Bundesanstalt) to upgrade accident prevention technologies.

KOSHA also entered into a cooperation agreement on occupational diseases with Japan in April 1992. This project was similarly turned over to civilian management in 1998, with support from the Japan Industrial Safety and Health Association (JISHA). Thereafter, KOSHA pursued cooperative projects with JISHA including research and training for KOSHA staff in Japan and consultation with Japanese experts in Korea. Process safety and advanced research techniques acquired to date have contributed to the prevention of industrial accidents at domestic workplaces.

Besides, in December 1996, an agreement was signed by KOSHA and the National Institute of Occupational Safety and Health (NIOSH) of the US. Since then, KOSHA has been dispatching epidemiological hazard evaluation experts to NIOSH for training and conducting joint research on the development of an amine analyzing method. In addition, an expert from NIOSH visited Korea to provide consulting services. These cooperative projects have contributed to the introduction of advanced research techniques and to the improvement of accident prevention technologies.

KOSHA also sought to form a cooperative coalition with other North European countries through the Finnish Institute of Occupational Health (FIOH), among others. Cooperative projects are being implemented for the exchange of technical information and joint research in fields such as occupational disease diagnosis and epidemiological surveys, biological monitoring, and ergonomics. KOSHA experts were dispatched as part of these joint research efforts and to exchange technical information and materials.

International Safety and Health Activities

KOSHA has cooperated with many foreign accident prevention organizations and international bodies to improve domestic occupational safety and health levels and upgrade safety and health technologies to world-class levels.

In particular, the agency signed a cooperation agreement with the world's leading accident prevention agencies such as the US's National Safety Council (NSC) and Chemical Safety and Hazard Investigation Board (CSB), Germany's BG (Berufsgenossenschaften), TUV (Technischer Uberwachungs Verein), PTB (Physikalisch-Technische Bundesanstalt), and BAuA (Bundesanstalt fur Arbeitsschuz und Arbeitsmedizin). Based on such agreements, KOSHA has provided and acquired accident prevention technologies and information including the latest policies.

In order to globalize safety and health, the agency has also maintained close ties with international organizations such as the International Labor Organization (ILO), International Standards Organization (ISO), and Asia-Pacific Occupational Safety and Health Organization (APOSHO), and has exchanged technologies and information and hosted international seminars. The agency has also acquired membership in WHO's Collaborating Center for Occupational Health.

Since 1993, KOSHA has been participating in the Technical Committee on occupational safety and health of the International Standards Organization (ISO) and the International Electro-Technical Commission (IEC). It plays an active role in several technical committees: Cranes (ISO/TC 96), Mechanical Vibration (ISO/TC 108), Air Quality (ISO/TC 146), Construction/Electrical Equipment (ISO/TC 64), Safety of Machinery - Electrotechnical Aspects (IEC/ TC44), and Lightning Arrestor (IEC/TC37).

In addition, KOSHA attended the annual OECD general assembly meetings and other forums such as the ISO and IEC as Korea's representative or as the secretariat in international activities on the prevention of major industrial accidents. In particular, the agency presented its inputs during the OECD Expert Group Meeting after collecting domestic examples under the theme 'Construction of an Integrated Safety, Environment, and Quality Management System'.

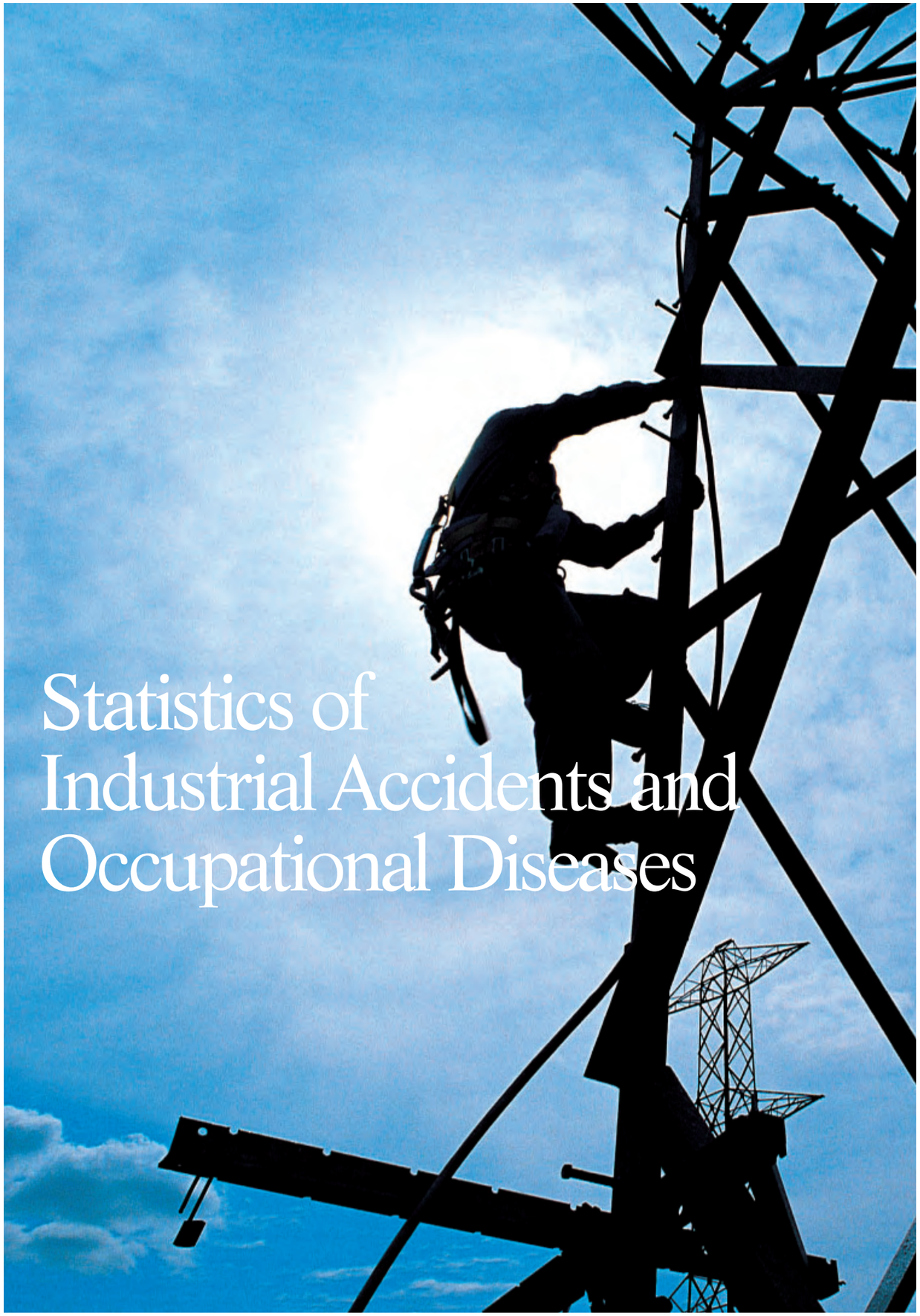
KOSHA also attended the APOSHO's annual conference to promote balanced safety and health development in the Asia-Pacific region, the exchange of information and understanding among all parties. Currently, it holds the chairmanship of the Technical Committee.

Technical Assistance to Developing Countries

KOSHA is committed to providing safety and health technology assistance to developing countries. In September 1999, KOSHA entered into an agreement with Mongolia and other Asian countries to provide on-site technical guidance, the exchange of information, and training for occupational safety and health personnel. KOSHA invited 2 public service officials from the Vietnamese Ministry of Labor, War Invalids and Social Affairs and 14 supervisory personnel from the Mongolian government in 2004. The participants learned advanced accident prevention technologies during the training sessions held by KOSHA.

Overseas Training

To enhance the expertise and technical knowledge of KOSHA experts, KOSHA provides its staff with short- and long-term training. Training is mainly divided into short-term training aimed at acquiring new technologies related to accident prevention and long-term training, i.e., KOSHA dispatches its staff to pursue MS studies to foster experts in accident prevention. Since its establishment, KOSHA has dispatched its staff to Germany and Japan for short- and long-term training. In terms of long-term training in particular, 24persons have been sent to many prestigious US and British universities to pursue MS and PhD studies on industrial safety and health. On the other hand, as part of an inter-country cooperative program, KOSHA dispatched 33 staffs to overseas accident prevention training institutes in 2004.

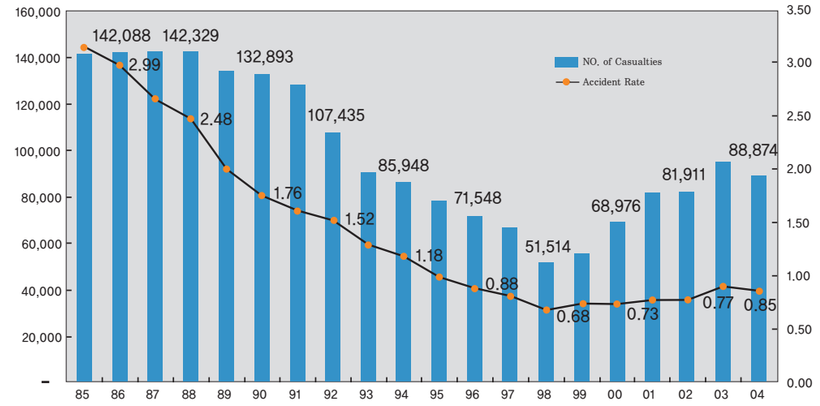


Statistics of Industrial Accidents and Occupational Diseases

Summary

- Out of 10,473,090 employees working at 1,039,208 workplaces covered by the Casualty Compensation Insurance Act, casualties requiring medical care for a period of 4 or more days numbered 88,874 as of 2004. The accident rate in 2004 was 0.85%.
- Compared to 2003, the number of workers decreased by 1.2%, number of casualties by 6.4%, and accident rate by 0.05p.
- Due to dramatic shift in nation's economy under the control of IMF in 1998 and 1999, the number of casualties and accident rate showing a continuous decreasing trend witnessed a rapid decline, followed by an increasing trend. The number of workplaces covered by industrial accident compensation was increased to include those with at least 1 employee in July 2000. This has caused a significant increase in the number of casualties since 2001.

Table 1: Number of Casualties and Accident Rate per Year



Fatalities

- Fatalities numbered 2,825, with 1,537 resulting from occupational accidents and 1,288 caused by work-related diseases.
- The fatality rate per 10,000 people was 2.70, a decrease by 0.06p compared to 2003's 2.76. The number of cerebro-vascular disease fatalities was 788, followed by falls fatalities 570 and pneumoconiosis fatalities 421.
- The number of fatalities caused by occupational illness has been showing a steady increase since 1998. The fatality rate per 10,000 people, which has been showing a decreasing trend since 1994, has also risen since 2003.

Occupational Illness

- Patients suffering from occupational illness in 2004 numbered 7,895, an increase of 155 persons (or 2.0%) compared to the previous year's 7,740 persons.
- In particular, work-related diseases accounted for 2046 cases of the total in 2004, representing an increase of 623 persons (43.8%) over the previous year's 1,423 persons. The number of patients suffering from work-related illnesses was 5,849, representing a decrease by 468 (7.4%) over the prior year of 6,317 persons.
- Coverage by the industry accident compensation insurance has been expanded to include "workers' pneumoconiosis" (grade 13 disease) in occupational illness (including death) (effective July 1, 2003), which represented an increase of 623 persons in 2004 over the prior year's figure.

Table 2: Number of Fatalities and Fatality Rate per 10,000 persons by Year

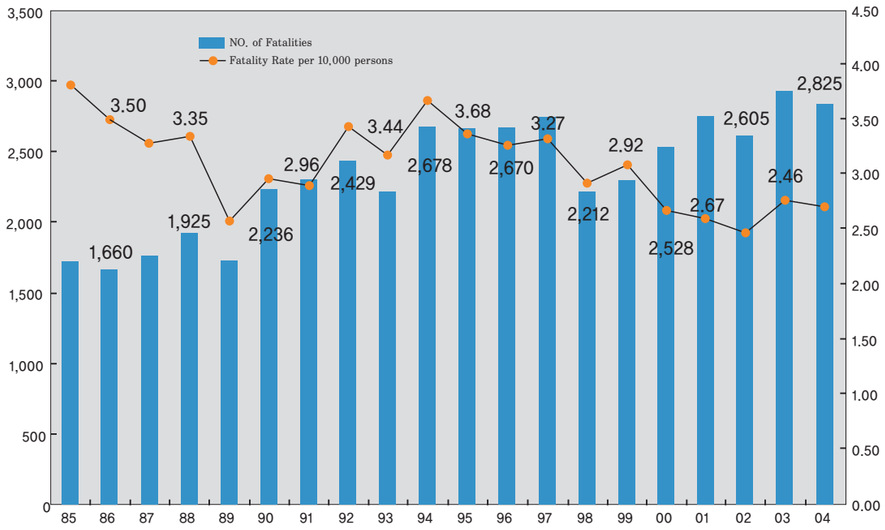
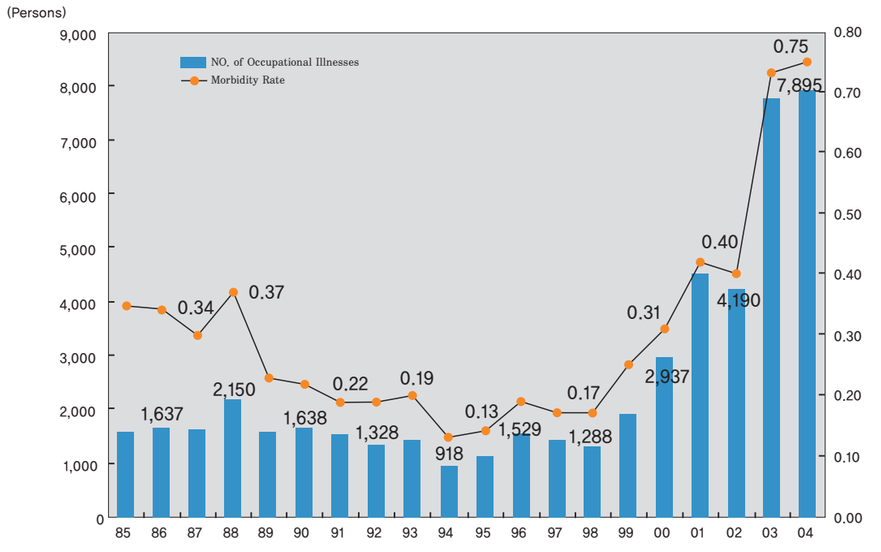


Table 3: Number of Occupational Illnesses and Morbidity Rate per Year



Disaster Index

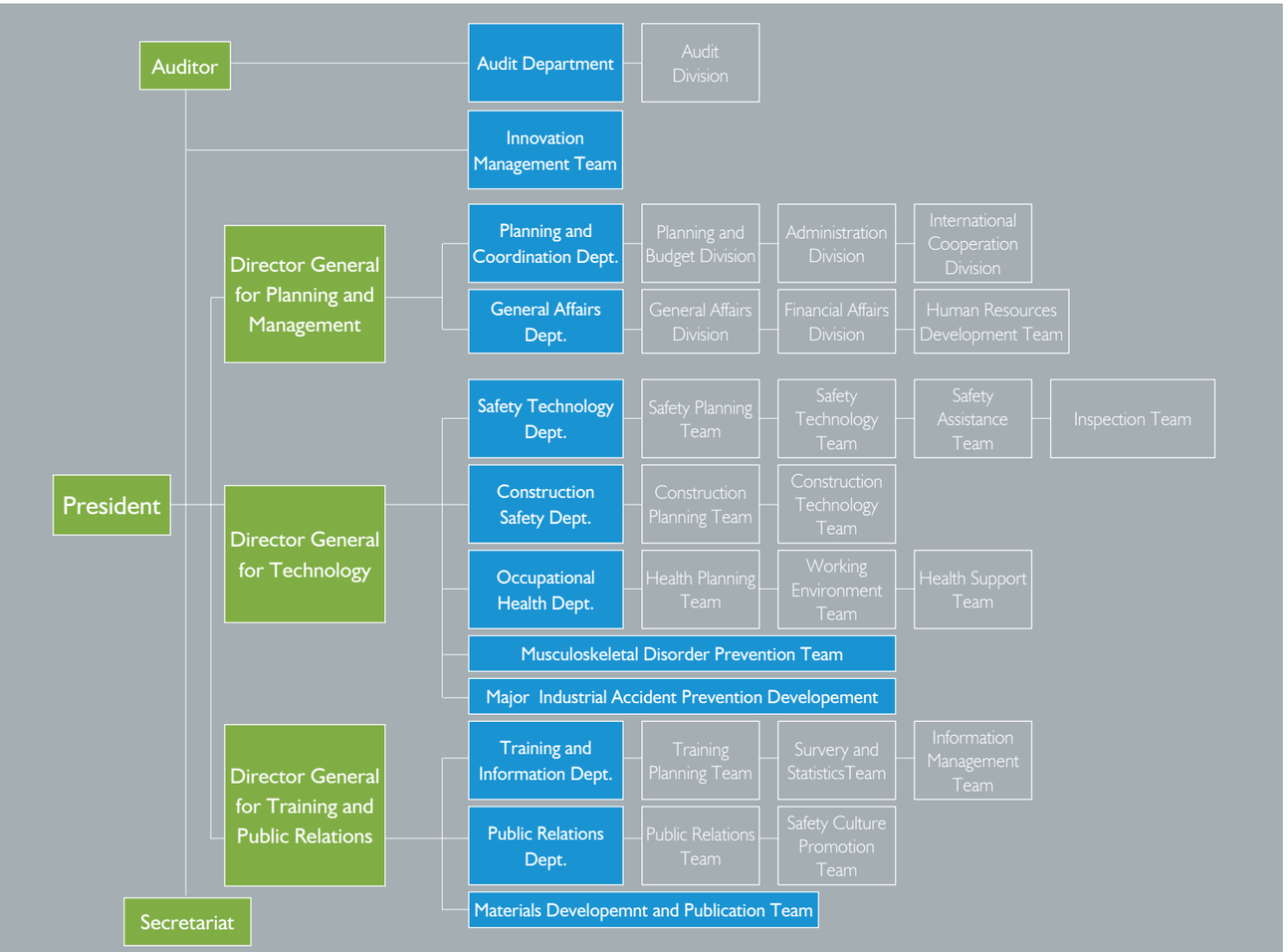
- Accident rate:
  Number of casualties/Number of workers covered by the casualty compensation insurance ×100
- Fatality rate per 10,000 persons:
  Number of fatalities/Number of workers covered by the casualty compensation insurance ×10,000
- Morbidity Rate:
  Number of cases involving occupational illness/Number of workers covered by the casualty compensation insurance ×1,000

0.19

Appendices

Organization Chart

Head Office



Affiliates

- Occupational Safety and Health Research Institute
- Occupational Safety and Health Training Institute
- 3 Regional Head Offices (Seoul, Busan, and Gwangju) and 17 Area Offices

List of Industrial Property Rights

Summary

(as of December 31, 2004, Unit: Case)

Item	Total	Patent	International Patent	Utility Model	Design	Trademark
Total	156(21)	71 (21)	(2)	61	4 (4)	8types, 20 cases
Registered	119(4)	46	(2)	49	4 (4)	8 types, 20 cases
Pending	37(17)	25 (17)	-	12	-	-

* Figures in ( ) denote double application

Industrial Property Rights Obtained in 2004

Patent: 15 cases

Name of Invention	Department	Remarks
Apparatus for paper pipe cutting	Occupational Health Department	
Device for informing automatically position of worker used optical sensor	OSHRI	
Protection device of press	Safety Technology Department	
Earthing status displayer	Safety Technology Department	
Centrifugal hydroextractor and control method	Safety Technology Department	
Pin clutch type press	Safety Technology Department	
Multi-scanning ultrasonic inspector for weld zone	Safety Technology Department	
Load supporting apparatus possible of high adjustment	OSHRI	
Device for alarm attendant on sensing of near to high-voltage electric wire	OSHRI	
A land-side protection wall for trench excavation work	Construction Support Department	
Device for earthing status display	OSHRI	
A safety net system used to prevent construction site falls	Safety Technology Department	
Scaffold support device for construction	Construction Safety Department	
Safety working foothold for a line scaffold	Construction Safety Department	
A safety guard supporter's fixed-unit in construction work	Construction Safety Department	

Utility Model: 3 cases

Name of Invention	Department	Remarks
Dust collector	Occupational Health Department	
Reciprocation air compressor reduced noise and vibration	OSHRI	
Reciprocation air compressor's inhalation and ventilation reduced noise	OSHRI	

Appendices

Training Courses

Field	Course
Safety Management	Qualifications for teaching the workplace safety and health field
	Promotion of the accident-free campaign
	Accident investigation and development of improvement plans related to safety and health
	Prevention of fire and explosion
	Safe transportation of hazardous materials
	Qualifying KOSHA 2000 evaluators
	Practice of KOSHA 2000 programs
	Qualifying risk management experts
	Safety in handling food manufacturing facilities
Safety Engineering	Qualifying press and shear inspectors
	Qualifying crane inspectors
	Qualifying chemical facility inspectors
	Grounding of electrical equipment
	Protection of over current
	Prevention of electric fire and explosion-proof safe
	Analysis of risks and operation
	Analysis of accident frequency
	Analysis of accident results
	Equipment maintenance and modification management
	Preparation and evaluation of process safety reports
	Self-inspection of process safety
	Integrated risk control experts
	On-the-job training for manufacturing supervisors
	Construction lift safety
	Installing and disassembling tower cranes (New)
	Installing and disassembling tower cranes (Remedial)
	Tower crane engineers
Construction Safety	Safety related to temporary work
	Examination of harmfulness and hazard prevention plans
	Safety related to shoring works
	Safety related to bridge construction work
	Training for field construction supervisors
	Construction manager (Elementary class)
	Construction manager (Middle class)
	Construction manager (High class)
	Qualifying KOSHA 18001 evaluators (consultants) for the construction industry
Occupational Health	Qualifying local ventilation system inspectors
	Noise/vibration management
	Local ventilation system design
	Management of simple and repetitive jobs and VDT operation
	Improvement of working environment
	Techniques of utilizing safety and health information
	Casualty rescue and emergency action
	Health promotion
	Prevention and management of back pains
	Occupational nursing (special)
	Occupational medicine (special)
	Ergonomic improvements in workplaces
	Human factors (prevention of human errors)
	Tailored occupational health
	Confined space safety

KOREA OCCUPATIONAL SAFETY & HEALTH AGENCY

KOSHA seeks to make
the Republic of Korea
an accident-free country.