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FROM THE DESK

The invention of the World Wide Web (www) at a Swiss physics laboratory has made major changes in all the spheres of human life. Explosion of knowledge has created deep ripples in the sphere of work. The growing application and importance of information and communication technology has entirely changed the nature of work transforming from manual and labour oriented one to highly demanding on mental alertness, knowledge and skills.

Stressful work such as multi-skill jobs violating the physiological limits, isolation and unsocial hours ignoring the social dimension of the human being has become very common among the new generation workforce.

By developing the effective systems of imparting knowledge and skills to the workforce, the expenditure on mental, physical and social health, occurrence of occupational accidents and loss of human capital can be reduced to a large extent.

The cover feature of this issue discusses the positive and negative aspects of knowledge based society and impact on quality of work life. With the help of suggested measures in the cover feature, I hope the organizations will be benefited with reductions in medical and disability costs, absenteeism and turnover, raised levels of employee's mental alertness, job satisfaction, morale, productivity and an enhanced corporate image.

A handwritten signature in blue ink, reading "S.K. Saxena", written over a horizontal line.

(S.K. SAXENA)
EDITOR -IN- CHIEF

KNOWLEDGE BASED SOCIETY AND QUALITY OF WORK-LIFE

Dr. Avneesh Singh

INTRODUCTION

Knowledge has always been significant to human civilization. Evolution of different civilizations and cultures are the outcome of transfer of knowledge from one generation to another generation. Since the invention of the World Wide Web (WWW) at a Swiss physics laboratory, there has been an astounding evolution in our day to day life. It has opened the access to the knowledge paving the way of self-education, and is an important step towards the creation of knowledge based society.

Although most of us use the mode of electronic communication through telephone, television, e-mail and the Internet, rarely we have been studying the implications of this evolution in terms of its impact on the lifestyle and quality of life. This paper is an attempt to put forward some of the thought provoking aspects of the Knowledge Based Society and to highlight the measures for enhancing the quality of life of the workforce.

DEVELOPMENT OF KNOWLEDGE MOVEMENT

Knowledge is a capacity for social action. The knowledge and skills of people living in a society are extremely important to its transformation into a knowledge-based society. The stock of human capital is reflected in the level of skills, competencies and knowledge of members of society. In the year 1962, [Fritz Machlup](#)

introduced the concept of the knowledge industry. He has classified it in to five sectors of the knowledge viz. education, research and development, mass media, information technologies and information services.

In the year 1994, Peter Drucker popularized the futuristic vision concerning the transformations of our society into a new "knowledge society". He stated that by the end of the century, knowledge workers will make up a third or more of the work force in the United States - as large a proportion as manufacturing workers ever made up, except in wartime. These new jobs will require a good deal of formal education and the ability to acquire and to apply theoretical as well as analytical knowledge.

[Nico Stehr](#) (1994, 2002) says that in the knowledge society a majority of jobs involves working with knowledge. According to Stehr (2002), the contemporary society may be described as a knowledge society based on the extensive penetration of all its spheres of life and institutions by scientific and technological knowledge.

The World Science Forum (2003) held in Budapest summarized that a knowledge-based society is an innovative and life-long learning society, which possesses a community of scholars, researchers, engineers, technicians, research networks, and firms engaged in research and in production of high-technology goods and service provision. Knowledge based society forms a national innovation-production system, which is integrated into international networks of knowledge

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production, diffusion, utilization, and protection. The communication and information technology - tools in the knowledge based society make vast amount of human knowledge easily accessible to the masses. The knowledge is used to empower and enrich people culturally and materially, and also to build a sustainable society.

IMPACT OF KNOWLEDGE MOVEMENT

Trend of "knowledge explosion" has produced a major impact on the education system in India. Development of knowledge-based society framework can be measured in terms of the availability of education and training inputs, both formal and informal, as well as outputs in terms of the stock of skilled people (information about the education and skill levels of the population and the potential stock of qualified people); flow of skilled people (this characteristic looks at knowledge workers, the level of educational attainment of the labour force, the extent of employer training and human capital loss/gain from the economy); investment in human capital (refers to expenditure on education and training by government and business); and lifelong learning and access to education and training (Asia-Pacific ICT Technical Meeting, 2004).

The stock of the human capital is built up over time mainly through investment in education by public and private sectors on education and training. Institutions are thriving as professionals are seeking applied education and training which can help them compete for "knowledge-based" jobs in the knowledge-based economy all over the world. Colleges and Universities are continuously marketing their programs which promise to lead graduates toward wealth and success. Creation of Information Technology institutions all

over India equipped with on-line libraries having journals, books and other references has taken place.

KNOWLEDGE-BASED SOCIETY: EFFECT ON WORKFORCE

During the last two decades, major changes have taken place in the workplace. The process of liberalisation, privatization and globalization of Indian economy has led to major organizational restructuring and growth in the use of information technology at work-place. Information and communication technology is an enabling technology of a knowledge-based society. These technologies are essential tools for knowledge workers, allowing them to take full advantage of technology's capacity to access, manipulate and process the information.

One of the burning examples how the inadequacy of on-hand knowledge about nature, health hazards and control measures of hazardous chemicals can play havoc with the human life is the Bhopal gas disaster involving a deadly poisonous substance- Methyl Isocyanate (MIC). However, now with the help of fast and efficient systems of imparting knowledge to the work-force, the occurrences of occupational /industrial accidents have reduced to a large extent. Though the discovery of more and more complex and hazardous substances and their production, handling and usage is on the rise, the development of knowledge based work system is able to successfully control the exposure to hazardous chemicals & substances and occurrence of man-made disasters.

The dimensions of work are changing. Changes in work content have radically transformed the nature of work in most of the organizations. The growing application and importance of information and

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communication technology has changed the employment pattern. The workforce engaged in making the information flow throughout the society is the key contributor towards the progress and prosperity of the mankind. However, the system in which they are working is posing lot of physiological, psychological and social threats to them.

Computers are the basic tools of the information processing system and are well known for the associated health hazards. The growing dependence on information technology in the workplace has resulted in many employees spending long periods at a computer terminal. The use of computers /video display terminals (VDTs) has been recognized as one of the biggest contributor to the mental and physical health problems. A large number of studies have found that prolonged work at visual display terminals (VDTs) can have a negative impact on employee health, in terms of musculoskeletal problems, and psychological stress (Aaras, Horgen, & Ro, 2000; Dillon & Emurian, 1996; Ekberg *et al.*, 1995).

Physiological Effects:

Physiological hazards experienced by the users of computers are associated with the workstation design, work environment and the work habits of the operator. The advancement in computer technology has effectively curbed the ill effects of high electromagnetic emissions (EMR) which are believed to have the biological effects on Central Nervous System (CNS), Cardio Vascular System, Reproductive System, Immuno-system and carcinogenic effects due to the exposure to the dreaded ionizing X-rays and ultraviolet rays. But still the occurrence of visual problems (visual fatigue, eye-strain etc.), facial rashes, and pregnancy risks due to prolonged exposure to electromagnetic radiation are some of

the commonly known health effects (Iqbal, 2001).

The computer based work leads to a wide array of conditions that are also commonly known as Cumulative Trauma Disorders (CTD) or Repetitive Strain Injuries (RSI). Problems in Back and shoulder, Cervical Hunch and Nerve Root Compression, Tendinitis, Carpal Tunnel Syndrome, Epicondylitis, Tenosynovitis, Quadruple crush are some of the well known Musculo-Skeletal Disorders (MSD) occurring due to the use of computers.

Psychological Effects:

The World Health Organization (WHO) has predicted that by 2020, mental illness will be the second leading cause of disability worldwide after heart disease. In the late 1990s, work organization conditions and their consequences for mental and physical health, have emerged as one of the biggest problems for the people working with computers. Some of the important work design aspects uncovered by Smith (1997) include lack of employee skill use, monotonous tasks, high job demands and work pressure, lack of control over the job, poor supervisory relations, fear of job loss, and unreliable technology.

However, the successful implementation of concept of ergonomically designed work-station and application of work organization techniques have sizably arrested the occurrence of accidents and occupational diseases among the workforce. But increase in the level of occupational stress leading to occurrence of depression, suicidal tendency, mood disturbances, etc. is on the rise.

The main causes of these psychological and behavioural problems among the new generation workforce are compelling work situations such as braking of the

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biorhythm due to round the clock work in information processing organisations and international call centers and over-work violating the psychological limits.

Social Effects:

Employees' spending long periods at a computer terminal in isolation ignoring the social needs have shaken their social sphere of life. The multinational Knowledge Processing Organizations (KPOs) are attracting the young, energetic and qualified work force by paying huge perks and physically attractive work environment. As a result of this, India has become a major hub for the KPOs. Most of the professionals working in these KPOs are in the age range of 22 to 45 years. These young professionals, due to the compelling work hours and schedules, are not able to keep the constant touch with the society and in the longer run they get isolated from the society. This state of isolation from society and family completely blocks the passage of emotional outlet and interaction.

The increasing number of female professionals and a growing number of dual-earner couples is changing the family dimension. The impacts of these workplace dimensions on employee well-being are clearly visible (Sparks et al., 2001). In the days to come, the healthy child-rearing for the dual-earner couples engaged in KPOs will be a big question. In the years to come, when this young work force will be required to carry the additional burden of mid life crises, it will further deteriorate the social and family setup.

ENHANCING QUALITY OF WORK-LIFE: SUGGESTED MEASURES

In order to retain the productive and effective Indian work-force, the major consideration of the multinational knowledge processing organizations must

be the enhancement of the overall well-being of the workforce.

A greater focus is required to study the impact of the changing workplace in the 21st century. Major movement of the highly skilled and specialized manpower is taking place. The young professionals are frequently moving to the need based locations all over the world. These professionals from different states /regions and cultural groups may be more prone to stress due to cultural differences and attitudes. Therefore, research studies at organizational level, institutional and university level must be taken up to study the impact and to suggest remedial measures to counter the stressing impact of the changing work-culture. The findings of such studies should suggest training modules for the managers and supervisors to raise the awareness of how much is the impact of psycho-social and cultural factors on the employee well-being and also should suggest the remedial measures.

More research studies are required to investigate the long-term negative health effects of working in knowledge processing organization /industry. The findings of the studies should be conveyed to the organizations which need to be aware of what hazards or stressors are present in the workplace, and to adapt the suggested preventive measures not only to protect employee well-being but also to cover themselves against any potential legal action from stressed employees.

To cope with the increasingly diverse workforce, organizations need to become more flexible in their procedures and practices (Kandola & Fullerton, 1996). The multinational knowledge processing organizations should study and analyze emotional, personal, and family needs in the Indian socio-cultural context so that

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the occurrence of drug dependence and suicide can effectively be curbed.

Employers need to become responsive to individual needs to maximize employee well-being and also their commitment (Herriot, 1989). The process of proper need assessment and employee participation is required to optimize the effectiveness of any intervention programme.

By applying the stress-reduction techniques and different well-being promotion schemes within the workplace, organizations may enhance not only the well-being but also commitment and performance. Findings of the research studies have indicated favorable results for the workforce from the instigation of these programmes, such as improved diet, increased exercise, weight loss, curb in the habit of smoking and drug dependence (Demmer, 1995; Dugdill & Springett, 1994). The time tested concepts which have deeply intertwined with our cultural thread - Astang Yoga and Meditation, must be widely preached and practiced. However, the impact and application have to be carefully analysed and assessed through research studies.

As an outcome of these efforts, organizations will be benefited with reduction in medical and disability costs, absenteeism and turnover, and raised levels of employee mental alertness, job satisfaction, morale, productivity, and an enhanced corporate image. These health-promotion schemes will produce positive results for employees, organizations and the society at large.

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HAZARD AND OPERABILITY STUDY IN ZINC SMELTER PLANT

INTRODUCTION

The Regional Labour Institute, Kanpur carried out HAZOP study in a Zinc smelter plant on the request of the management of the company.

OBJECTIVE

The objectives of the safety audit were to identify the hazards in the plant and processes and the operability problems arising due to deviations in the process parameters or the external conditions by use of HAZOP technique.

METHODOLOGY

The study was conducted by a team of officials from the institute along with the officials representing various departments of the plant under consideration.

The methodology adopted for the study was the guideword technique. In this technique, the brainstorming is done by a group of persons to visualize the possible deviations under various foreseen conditions and the effects of those deviations on the safety and operability problems in the equipment.

The following information and data about the factory was sought for ready reference at the time of study:

- Piping and instrumentation diagram.
- Process flow diagram.
- Operating instructions and procedures.

- Material safety data sheets for the hazardous substances involved.
- Specifications and other details of instruments and devices provided in the plant.

RECOMMENDATIONS

It was noted that most of the safety and operational problems had been taken care of in the design stage. The present study revealed some areas where improvements may augment the safety and operational convenience. The HAZOP sheets presented in the report indicate the circumstances that have given rise to the suggested interventions.

It was noted that the details given in the process manual were required at some places to be definite about the actions required to be taken on hearing the alarms under various abnormal situations. At some places there was need to provide some additional alarm systems to warn the workers.

Under some situations, there was need to develop some monitoring devices as conventionally no suitable devices were available for those places.

Some suggestions have been made for displaying the hazards and emergency information to keep them aware.

Work environment should be monitored for lead and zinc dust. Necessary dust control should be done and workers should be examined periodically for lead absorption.

Dust level at the hopper feeding point should be measured to ensure that the concentration is within the permissible

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level of exposure. If the dust is found to be more than limit, necessary improvement in the duct, hood/blower capacity should be considered.

Flanges should be provided with the guards to prevent spray release of acids and other corrosive and toxic substances wherever the corrosive substances are handled through pipelines. As far as possible, the flanges of toxic and corrosive substances should be avoided above working and walking areas. If provided, it should be ensured that the flanges are guarded and free fall of acid is avoided by provision of catch pots and drain pipes.

Level of noise of the noisy machines should be checked up at the time of commissioning and subsequently, the checks should be done regularly to ensure

that there is no deterioration in the condition.

Overflow pipe of Sulphuric acid tanks should be kept dipped into the acid kept in receiving vessels in order to avoid ingress of moisture into the tanks from the humid air. Drain pipes of Sulphuric acid and other toxic and corrosive material tanks should be provided with two valves in series instead of one valve and one blind.

The vents of the Sulphuric acid tanks should be provided with the suitable moisture traps. The valves of the drainpipe in the tanks containing toxic and corrosive substances should be such that their open and closed positions are visible from a distance. It may also be ensured that high SO₂ alarm is provided in the tail gas treatment plant.

EDUCATION AND TRAINING

STORAGE, HANDLING AND MANAGEMENT OF HAZARDOUS SUBSTANCES IN CHEMICAL PROCESS INDUSTRIES

INTRODUCTION

Rapid industrialization and proliferation of human settlements surrounding the industrial nuclei cause serious concerns for human safety and protection of other life and property.

Of all the industries, process industries - namely chemical, petrochemical and allied industries have the potential of causing minor to major hazards, leading to devastating consequences to the installations and neighbouring community, as they involve storage, processing and handling of large quantities of hazardous chemicals.

Toxicity, flammability and explosions are the major threats associated with handling of hazardous substances. Depending upon the nature of substance and magnitude of such releases, emergencies could either be confined within the industrial premises (on-site emergency) or could transgress the boundaries of the industry and affect the public in the neighbouring areas (off-site emergency).

It is therefore imperative that the management of the process industry should be aware of the potential hazards associated with different industrial activities involving hazardous substances and take suitable and adequate preventive and control measures to minimize the risk to the lowest level.

This programme has been designed keeping in view the requirement of the industries to launch a comprehensive

programme for management of risks arising out of handling, processing, storage and transportation of hazardous substances at work.

OBJECTIVES

To strengthen the management systems on OSH by familiarizing the following:-

- The statutory obligations.
- Hazard identification and assessment techniques.
- Methods of control and mitigation of hazards.
- Emergency planning and preparedness.

HIGHLIGHTS

- MSIHC Rules 1989
- Handling and storage of hazardous substances
- Process safety management
- Hazard identification and evaluation
- Occupational safety audit
- Workplace air monitoring
- Fire and explosion hazard and its impact assessment (BLEVE, UVCE & POOL FIRES)
- Toxic releases and its impact assessment
- Management of hazardous wastes

EDUCATION AND TRAINING

- Health hazards of toxic chemicals of Process Industries
- Emergency planning and preparedness

Conducted by:

**MAJOR HAZARDS AND CHEMICAL
SAFETY DIVISION
CENTRAL LABOUR INSTITUTE
Sion, Mumbai – 400 022**

TECHNIQUES

- Audio visual
 - Syndicate exercises
 - Case studies
-

TARGET GROUP

Senior plant operators, Production executives, Managers and Safety Officers

MSDS

The Library & Information Centre of Central Labour Institute has unique collection of Material Safety Data Sheet of about 1,20,000 chemicals/materials taken from Canadian Centre for Occupational Health & Safety. MSDS provides extensive coverage over safety perspective with detailed evaluation of health, fire and reactivity hazards. It also provides precaution as well as recommendation on handling, storage, personal protective equipment, accidental release etc.

MATERIAL SAFETY DATA SHEET ON ISOPROPYLCYCLOHEXANE

Synonyms: Hexahydrocumene,(1-Methylethyl)cyclohexane, Normanthane

HAZARDS IDENTIFICATION

Colourless liquid. **FLAMMABLE LIQUID AND VAPOUR.** Can accumulate static charge. Vapour is heavier than air and may spread long distances. Distant ignition and flash back are possible. Liquid can float on water and may travel to distant locations and/or spread fire. Central nervous system depressant. High vapour concentrations may cause headaches, nausea, dizziness, drowsiness, confusion, unconsciousness and death. Aspiration hazard. Swallowing or vomiting of the liquid may cause aspiration into the lungs.

POTENTIAL HEALTH EFFECTS

Inhalation: No specific information is available. Effects of isopropylcyclohexane are probably similar to related alicyclic hydrocarbons such as cyclohexane.(1) Therefore, isopropylcyclohexane is probably a central nervous system depressant. High vapour concentrations may cause headache, lightheadedness,

nausea and drowsiness; very high concentrations may cause unconsciousness and death. Vapour may cause slight irritation to the nose and throat.

Skin Contact: Direct contact with liquid may cause mild irritation.

Eye Contact: Cyclohexanes are not known as eye irritants. High vapour concentrations may irritate the eyes. Splashes of liquid in the eyes may be irritating.

Ingestion: Animal toxicity information for alicyclic hydrocarbons indicates that these materials have very low toxicity if ingested, but cause diarrhea. Extremely large doses would be required to cause symptoms of depression of central nervous system, as described for "inhalation" above. Isopropylcyclohexane can probably be readily aspirated into the lungs. Aspiration is the "breathing" of a material into the lungs when it is swallowed or vomited. Potentially fatal lung damage (pulmonary edema) can result. Ingestion is not a typical route of occupational exposure.

FIRST AID MEASURES

Inhalation: This product is flammable. Take proper precautions (e.g. remove any sources of ignition). Remove source of contamination or move victim to fresh air. If breathing has stopped, trained personnel should begin artificial respiration or, if the heart has stopped, cardiopulmonary resuscitation (CPR) immediately. Obtain medical attention immediately.

Skin Contact: Remove contaminated clothing, shoes and leather goods (e.g., watchbands, belts). Wash gently and thoroughly with water and non-abrasive soap for at least 5 minutes or until the

MSDS

chemical is removed. If irritation persists, obtain medical advice immediately. Completely decontaminate clothing, shoes and leather goods before re-use or discard.

Eye Contact: Quickly and gently blot or brush away excess chemical. Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 5 minutes or until the chemical is removed, while holding the eyelid(s) open. Obtain medical advice immediately.

Ingestion: Never give anything by mouth if victim is rapidly losing consciousness, is unconscious or convulsing. **DO NOT INDUCE VOMITING.** Have victim drink 240 to 300 mL (8 to 10 oz.) of water. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Repeat administration of water. Obtain medical attention immediately.

First Aid Comments: Provide general supportive measures (comfort, warmth, rest). Consult a doctor and/or the nearest Poison Control Centre for all exposures except minor instances of inhalation or skin contact. All first aid procedures should be periodically reviewed by a doctor familiar with the material and its conditions of use in the workplace.

FIRE FIGHTING MEASURES

Flash Point: 35 Deg C (96 Deg F) (Closed Cup) (3)

Lower Flammable (Explosive) Limit (LFL/LEL): Not Available

Upper Flammable (Explosive) Limit (UFL/UEL): Not Available

Autoignition (Ignition) Temperature: 283 Deg C (541 Deg F) (2)

Sensitivity To Mechanical Impact: Probably not sensitive. Stable material.

Sensitivity To Static Charge:

Specific information is not available. By comparison to related hydrocarbons, isopropylcyclohexane may accumulate static charge by flow or agitation, since hydrocarbons have low electrical conductivities. Vapour can be ignited readily by static discharge.

Combustion Thermal Decomposition Products: Carbon monoxide and carbon dioxide.(3)

Fire Hazard Summary: Flammable liquid. Can release vapours that form flammable or explosive mixtures with air at, or above 35 deg C. Vapour is heavier than air and may travel a considerable distance to a source of ignition and flash back to a leak or open container. Liquid can float on water and travel to distant locations and/or spread fire. Vapour can accumulate in confined spaces, resulting in a toxicity and explosion hazard. During a fire, irritating/toxic gases may be generated. Containers may explode in the heat of the fire.

Extinguishing Media: Carbon dioxide, dry chemical powder, alcohol foam or polymer foam. Water may be ineffective because it may not cool the material below its flash point.(3) Fire fighting foams are the extinguishing material of choice for most flammable liquid fires.(2)

Fire Fighting Instructions: Evacuate area and fight fire from a safe distance or protected location. Approach fire from upwind to avoid hazardous vapours and toxic decomposition products. Stop leak before attempting to stop the fire. If the leak cannot be stopped, and if there is no risk to the surrounding area, let the fire

MSDS

burn itself out. If the flames are extinguished without stopping the leak, vapours could form explosive mixtures with air and reignite. Water can extinguish the fire if used under favourable conditions and when hose streams are applied by experienced firefighters trained in fighting all types of flammable liquid fires.

Containers may rupture in the heat of the fire. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk. Otherwise, fire-exposed containers or tanks should be cooled by application of hose streams and this should begin as soon as possible (within the first several minutes) and should concentrate on any unwetted portions of the container. If this is not possible, use unmanned monitor nozzles and immediately evacuate the area.

If a leak or spill has not ignited, use water spray in large quantities to disperse the vapours, to protect personnel attempting to stop a leak and to flush spills away from ignition sources. Solid streams of water may be ineffective and spread material. For a massive fire in a large area, use unmanned hose holder or monitor nozzles; if this is not possible withdraw from fire area and allow fire to burn. Stay away from ends of tanks. Withdraw immediately in case of rising sound from venting safety device or any discolouration of tank due to fire. Firefighters may enter the area if positive pressure self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full Bunker Gear is worn.

HANDLING :

This material is a flammable liquid. Before handling, it is very important that

engineering controls are operating and that protective equipment requirements are being followed. People working with this chemical should be properly trained regarding its hazards and its safe use. Eliminate all ignition sources (e.g. sparks, open flames, hot surfaces). Keep away from heat. Post NO SMOKING signs. It is very important to keep areas where this material is used clear of other materials which can burn. Use non-sparking ventilation systems, approved explosion-proof equipment and intrinsically safe electrical systems in areas of use. Keep aisles and exits free of obstruction. Liquid can accumulate charge. Increase conductivity with additive designed for that purpose, reduce flow-rate in transfer operations, increase time the liquid remains in transfer piping and/or handle at lower temperature. Electrically ground all drums, transfer vessels, hoses and piping.

Ground clips must contact bare metal. When dispensing in other than a closed system, ensure dispensing container is bonded to receiving transfer equipment and container. To reduce the are/explosion hazard, consider the use of an inert gas in the container or storage vessel. Never perform any welding, cutting, soldering, drilling or other hot work on an empty vessel, container or piping until all liquid and vapours have been cleared. Have suitable emergency equipment for fires, spills and leaks readily available. For large scale operations, consider the installation of leak and fire detection equipment along with a suitable, automatic fire suppression system. Use in smallest possible amounts in a well ventilated area separate from the storage area. Do not use with incompatible materials such as strong oxidizing agents (e.g. peroxides, nitrates

MSDS

and perchlorates). These can increase the risk of fire and explosion. Never return contaminated material to its original container. Avoid generating vapours or mists. Prevent the release of vapours and mists into the workplace air. To avoid splashing, carefully dispense into sturdy containers made of compatible materials. Never transfer liquids by pressurizing the original shipping containers with air or inert gas. Do not dispense in storage area unless dispensing area is segregated by fire-resistant construction. Only use portable containers and dispensing equipment (faucet, pump, drip can) approved for flammable liquids. Label containers. Keep containers closed when not in use. Avoid damaging containers. Empty containers may contain hazardous residues. Follow handling precautions on Material Safety Data Sheet. Practice good housekeeping. Maintain handling equipment. Comply with applicable regulations.

STORAGE :

Storage area should be clearly identified, well-illuminated, clear of obstruction and accessible only to trained and authorized personnel. Inspect all incoming containers before storing to ensure they are undamaged and properly labelled. Store in a cool, dry, well-ventilated area out of direct sunlight. Store away from incompatible materials, such as strong oxidizing agents (e.g. peroxides). Follow any special instructions for storage on supplier/manufacturer Material Safety Data Sheet, e.g. maximum storage quantities and temperature requirements. Store in sturdy containers made of compatible materials. Keep containers tightly closed and protect from damage. Avoid stacking containers on each other. Keep empty containers in separate area.

Empty containers can be hazardous due to residual material. Keep closed. Provide raised sills or ramps at doorways or create a trench which drains to a safe location. Keep absorbents for leaks and spills readily available.

Store away from all heat and ignition sources. Use non-sparking ventilation systems, approved explosion-proof equipment and intrinsically safe electrical systems. Store according to applicable regulations for flammable materials for storage tanks, containers, buildings, rooms, cabinets, allowable quantities and minimum separation distances. Keep quantity stored as small as possible. Store away from process and production areas, away from elevators, building and room exits or main aisles leading to exits. Keep storage area clear of materials which can burn. Have appropriate extinguishing capability in storage area, (e.g. sprinkler system, portable fire extinguishers).

Bond and ground metal containers in storage area. Avoid bulk storage indoors. Equip storage tank vents with a flame arrestor. Storage tanks should be above ground over an area sealed on the bottom and diked to hold entire contents.

NOTE

The above details constitute part information of MSDS taken from Canadian Centre for Occupational Health and Safety. For complete MSDS write to MIS division, Central Labour Institute, Sion, Mumbai- 400 022. MSDS on about 1,20,000 chemicals/materials are available with Central Labour Institute. Computer printout will be supplied on nominal charge.

INTERNATIONAL OCCUPATIONAL SAFETY AND HEALTH INFORMATION CENTRE (CIS)

CIS (from the French name, Centre International d'information de sécurité et d'hygiène du travail) i.e. International Occupational Safety and Health Information Centre, is a part of the International Labour Office, Geneva, Switzerland. The mission of CIS is to collect world literature that can contribute to the prevention of occupational hazards and to disseminate this information at an international level. CIS imparts to its users the most comprehensive and up-to-date information in the field of Occupational Safety and Health. The work of CIS is supported by a worldwide Safety and Health information exchange network, which includes over 91 affiliated National Centres and 38 CIS collaborating Centres. Central Labour Institute, Mumbai has been designated as the CIS National Centre of India.

CIS can offer you rapid access to comprehensive information on occupational safety and health through:

- Microfiches on original documents abstracted in CIS-DOC (CISILO)
- ILOCIS Bulletin "Safety and Health at Work"
- Annual and 5-year indexes
- The CIS Thesaurus
- The list of periodicals abstracted by CIS

EXCERPT FROM CIS DOC

Title: Fundamental principles of occupational health and safety.

CIS ACCESSION NUMBER

CIS 06-1322

ABSTRACT

This practical guide to the development of effective occupational health and safety policies and programmes focuses on the key topics essential to promoting health and safety in the workplace. It presents a concise overview of the issues involved, together with specific guidelines for policy design and implementation at both national and enterprise levels. The operational aspects of meeting health and safety requirements are also covered, with detailed sections on legislation and enforcement, occupational health surveillance, and preventive and protective measures, as well as health education and training. It explains how relevant ILO

CIS

Conventions and Recommendations define

workers' rights and allocate duties and responsibilities to competent authorities, employers and workers. Examples are given of good practice in the surveillance of workers' health and of the working environment, occupational health services, and reduction of the incidence of work-related injuries and diseases.

NOTE

For details write to CIS National Centre for India, Central Labour Institute, Sion, Mumbai 400 022.

CLIPPING

QATAR LAW FOR WELFARE OF INDIAN LABOURERS

The Qatar government is going to bring in a new legislation on welfare to protect the interests of domestic Indian workers, especially women there.

Indians working in Qatar constitute the largest number of migrant population. While less than 10 percent of them are professionals, the remaining are skilled and semi-skilled workers. Out of these, around 80 percent are employed in the construction industry.

The Qatar government is also setting up a six-member joint-working group (JWG), with India to prevent illegal intermediaries on both sides involved in sending Indians to work there.

The joint-working group will have three representatives from each country and will be set up soon.

Reacting to the development, Qatari minister for labour, Sultan Bin Hassan Al-Dhabit Al-Dosari said that they would like to have more interaction with the Indians working in Qatar. He also said that they would talk to both the workers and their employers to safeguard the workers' interests.

While India is coming up with a plan to conduct a pre-departure training for Indians going as domestic workers to Qatar, officials in the Qatar government said that they will educate the Indians about the labour laws and their native culture.

Sultan Bin Hassan said that they appreciated the role Indians were playing in the development of their country. Sultan

Bin Hassan also feels that the step of educating the Indians about the labour laws and the native culture of Qatar will further empower them and help them adjust socially.

The two governments have also signed an additional protocol to the 1985 bilateral agreement on the Regulation of Employment of Indian Manpower.

This was one of the first agreements India signed for the protection and welfare of Indian workers abroad. The protocol is based on the principle of benefit to all the stakeholders, the workers, the employers, the sending and the receiving country.

In case of a premature repatriation without any fault of the worker, the protocol provides for the payment of full wages and other entitlements under the contract and the labour laws for the entire unavailed period of contract.

It also provides for the welfare of Indian workers in the unorganized sector who are vulnerable in the absence of such protection laws.

Source: Asian Age, Mumbai Edition.

INSTITUTE NEWS

Research studies on occupational health and safety have established the role of unsafe acts of individuals in the causation of injuries and occupational illnesses beyond doubt. Lack of information, proper skill and appropriate motivation are the identified factors for such injuries and diseases. Appropriate training, therefore, is the essential element at all the levels right from the shop floor workers to the top most management level, for prevention and control of accidents and occupational illnesses in the industry. It is needless to over-emphasise its impact on quality of life and overall national prosperity. In view of the above, this organization had conducted the following training programmes.

1. Training programme on chemical safety for safety committee members
2. Training programme on effective supervision for safety, health and better environment at workplace
3. Training programme for MAHC for senior inspectors of factories
4. Safety education programme for the students of post graduate diploma in Human Resource Development and Labour Welfare, State Labour Institute, Kolkata
5. Chemical safety for inspectors of factories
6. Effective supervision for results
7. Industrial fitness – a key to improve safety, health and productivity at work
8. Occupational back pain, its evaluation and management for enhancing safety, health and productivity
9. Safety in cargo handling
10. Safety in dock work
11. Workers development programme on occupational health, first-aid and PPE
12. Introduction to Ergonomics – its relevance to industrial health
13. Introduction to Work Physiology – its application in industry
14. Refresher course for senior inspectors of factories
15. Safety in material handling
16. Training workshop on occupational health practice for nurses, medical/health assistants
17. Storage, handling and management of hazardous substances in process industries

INSTITUTE NEWS

18. Occupational health hazards in use of computer & VDT, its evaluation and prevention
19. Air contaminants and lung function in health and disease
20. 180th training course in industrial safety in collaboration with NSC Maharashtra Chapter
21. Occupational health and environment medicine
22. Effective management of safety, health and environment at workplace
23. Effective leadership for safety, health and productivity
24. Handling problem behaviour of employees

Industrial accidents have always been one of the main concerns of all. Human failure is a known attribute for causation of industrial accident beside many other factors. Effective evaluation and control of harmful exposures of the workers are essential to ensure their optimum productivity and reduce the risk of accident and their health. To achieve this goal, DGFASLI organization has been carrying out studies/surveys, safety audits since its establishment. In this quarter, the organization has done the following studies, surveys and safety audits.

1. Seven safety audits
2. Two HAZOP studies
3. Safety, Health & Ergonomics study of child labour (ILO Project)
4. Five assessments of airborne chemical contaminants in the work environment
5. Assessment of compress air breathing
6. Three walk-through surveys for the assessment of Health & Safety conditions
7. Noise study
8. Ventilation study
9. Assessment of airborne concentration of Dichlorovos (DDVP)
10. Assessment of Asbestos fibres in the working area

Names of Seminar/Workshop conducted during the quarter

- Update seminar on safety aspects of testing & commissioning of high voltage electrical systems
- Workshop on industrial noise control

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- Training workshop on selection & quality assurance for effective use of PPE
- 6th Professional Interaction & Update Seminar (PIUS) on the theme of testing methods & procedure and facilities for non-respiratory protective equipment - NRTL
- 5th Professional Interaction And Update Seminar on the ergonomical perspective of industrial safety & health
- 4th Professional Interaction & Update Seminar on occupational health and safety information system
- Workshop on higher productivity & better place to work
- 5th Professional Interaction & Update Seminar (PIUS) on measuring progress in process safety
- 4th Professional Interaction & Update Seminar (PIUS) on low back pain – causes, prevention and treatment
- Team building for health, safety & welfare at work
- 4th Satellite Professional Interaction & Update Seminar on initiation of plan of action for control of Silicosis
- National workshop on development of strategies for national level survey on identification and prevention of Silicosis
- Seminar on process safety in chemical industry (in collaboration with Indian chemical council)
- Workshop on safety audit concept and practice

Important developments/ Achievements:

- The Awards distribution function for Vishwakarma Rashtriya Puraskar and National Safety Awards for the year 2006 was held on 7.10.2007 at Vigyan Bhavan, New Delhi and the awards were presented to the awardees by Shri. Oscar Fernandez, Hon'ble Minister of State for Labour & Employment. Out of 221 applications received for Vishwakarma Rashtriya Puraskar, awards were given to 99 awardees and out of 341 applications received for National Safety Awards, 95 awards were given.
- The 9th Meeting of the Advisory Committee constituted under Section 9 of the Dock Workers (Safety, Health and Welfare) Act, 1986 was organized at Mumbai Port on 4th and 5th December, 2007. The Director General, FASLI and Chief Inspector Dock Safety inaugurated the conference. The Committee members including Dy.Chairman, Mumbai Port Trust, Dy.Secretary, Ministry of Labour & Employment and Trade Union officials attended the meeting.

ANNOUNCEMENT

TRAINING PROGRAMMES FOR THE YEAR 2008 CENTRAL LABOUR INSTITUTE, MUMBAI – 400022	
Title of the Programme	Contact Person
Advanced Diploma in Industrial Safety 2007-08	Director (Safety) & In-charge
Ergonomics - A Tool for ensuring Safety, Health & Productivity at work	Director (Phy.) & In-charge
Personal Growth & Group Dynamics for Safety & Health	Director (Staff Trg./Prod.) & In-charge
Safety, Health & Environmental Management in Drugs & Pharmaceutical Industry	Director (Ind.Hygiene) & In-charge
Effective participative skills for Safety Committee Members	Dy.Director (Ind. Psy.) & In-charge
Workshop on Safety Audit	Director (Safety) & In-charge
Heat Stress & Ventilation - A statutory requirement for ensuring Safety, Health & Productivity at work	Director (Phy.) & In-charge
Impact of Environmental Pollutants & their Control at Workplace	Director (Ind.Hygiene) & In-charge
Workshop on Dispersion Modelling and Impact Assessment of Major Toxic & Flammable Release	Director (Ind.Hygiene) & In-charge
Occupational Health Practice for Nurses, Health/Medical Assistants etc.	Director (Ind. Med.) & In-charge
Evaluation & Control of Chemicals Hazards at Workplace	Director (Ind.Hygiene) & In-charge
Workshop on Industrial Noise	Director (Ind.Hygiene) & In-charge
Workshop on HAZOP	Director (Ind.Hygiene) & In-charge
Workshop for Safety Committee Members	Director (Safety) & In-charge
Occupational Physiology for promotion of Safety, Health & Productivity	Director (Phy.) & In-charge

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Title of the Programme	Contact Person
Associate Fellow of Industrial Health Course	Director (Ind. Med.) & In-charge
Selection and Quality Assurance for effective use of PPE	Director (Ind.Hygiene) & In-charge
Heat Stress & Ventilation - A statutory requirement for ensuring Safety, Health & Productivity at work	Director (Phy.) & In-charge
Team Building for Health, Safety & Welfare at Work	Director (Staff Trg./Prod) & In-charge
Workshop on Occupational Safety, Health & Environment - Innovation/Challenges	Director (Safety) & In-charge
Ergonomics - A Tool for ensuring Safety, Health & Productivity at work	Director (Phy.) & In-charge
On the job counselling skills	Dy.Director (Ind. Psy.) & In-charge
Workshop on Industrial Ventilation	Director (Ind.Hygiene) & In-charge
Workshop on safety handling of chemicals for Safety Committee Members	Director (Ind.Hygiene) & In-charge
Industrial Fatigue & its Management	Director (Phy.) & In-charge
Behavioral Perspective on Industrial Safety & Health	Dy.Director (Ind. Psy.) & In-charge
A Silent Killer - Occupational Stress, its management for improving Safety, Health & Productivity at work	Director (Phy.) & In-charge
Effective Supervision for Results	Director (Staff Trg./Prod) & In-charge
Occupational Physiology for promotion of Safety, Health & Productivity	Director (Phy.) & In-charge
Advanced Diploma in Industrial Safety 2008-09	Director (Safety)
Fatigue & Rest Allowances for Safety & Health	Director (Phy.) & In-charge
Workshop on Environmental Audit	Director (Ind.Hygiene) & In-charge
Safety, Health & Environment Management in Process Industries	Director (Ind.Hygiene) & In-charge

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Title of the Programme	Contact Person
Industrial fitness, a key to improve safety, health & productivity at work	Director (Phy.) & In-charge
Industrial Fatigue & its Management	Director (Phy.) & In-charge
Training Methodology for Trainers	Director (Staff Trg./Prod.) & In-charge
Testing of lifting tackles & pressure vessels	Director (Safety) & In-charge
Effective participative skills for Safety Committee Members	Dy. Director (Ind.Psy.) & In-charge
One month Specialised Certificate Course for Supervisors working in Hazardous Process Industries	Director (Staff Trg./Prod.) & In-charge
Advanced Training Programme on Occupational Health & Environmental Medicine for Medical Officers	Director (Ind. Med) & In-charge
Basic course for Inspectors of Factories	Director (Safety) & In-charge
Management of Occupational Hazards in Use of Computer & VDT Appliances at Work	Director (Phy.) & In-charge
Selection and Quality Assurance for effective use of PPE	Director (Ind.Hygiene) & In-charge
Management of Occupational Back Pain	Director (Phy.) & In-charge
Impact of Environmental Pollutants & their Control at Workplace	Director (Ind.Hygiene) & In-charge
Refresher Course for Safety Officers	Director (Safety) & In-charge
Workshop on HAZOP	Director (Ind.Hygiene) & In-charge
Industrial fitness, a key to improve safety, health & productivity at work	Director (Phy.) & In-charge
Evaluation of Environmental Pollutants & their Control at Workplace	Director (Ind.Hygiene) & In-charge
Refresher Course for Senior Inspectors of Factories	Director (Safety) & In-charge
Handling Problem Behaviour of Employees	Dy. Director (Ind. Psy.) & In-charge

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Title of the Programme	Contact Person
Productivity and Quality Improvement through effective employees participation	Director (Staff Trg./Prod.) & In-charge
Storage & Handling and Management of Hazardous substances in process industries	Director (Ind.Hygiene) & In-charge
Management of Occupational Hazards in Use of Computer & VDT Appliances at Work	Director (Phy.) & In-charge
Occupational Health Practice for Nurses, Health/Medical Assistants etc.	Director (Ind. Med.) & In-charge
Effective Leadership for Safety, Health & Productivity	Dy.Director (Ind. Psy)& In-charge
Effective Leadership for Safety, Health & Environment at workplace	Director (Ind. Hygiene) & In-charge
Impact of Environmental Pollutants & their Control at Workplace	Director (Ind.Hygiene) & In-charge
Pulmonary Function Test: A Physiological Perspective	Director (Phy.) & In-charge

TRAINING PROGRAMMES FOR THE YEAR 2008 REGIONAL LABOUR INSTITUTE, NO.1, SARDAR PATEL ROAD ADYAR, CHENNAI-600 113

Title of the Programme	Contact Person
Safety and Health of Workers in Construction Sector	Director In-charge
Inspection of Bulk Storage Facility for Hazardous Industries	Director In-charge
Mineral Dust and Respiratory Diseases in the Work Environment	Director In-charge
Safety and Health of Workmen in Construction Work	Director In-charge
Preparation & Evaluation of Onsite Emergency Plan & Safety Reports	Director In-charge
Delivering the package programme on Industrial Safety & Health.	Director In-charge

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Title of the Programme	Contact Person
Training programme on Safety Audit	Director In-charge
Training programme for Worker Members of Safety Committee	Director In-charge
Training programme for Senior Inspectors of Factories	Director In-charge
Training Workshop on Work Environment Monitoring	Director In-charge
Training programme on Management of Hazardous substances	Director In-charge

<u>TRAINING PROGRAMMES FOR THE YEAR 2008 REGIONAL LABOUR INSTITUTE, LAKE TOWN, KOLKATA-700 089</u>	
Title of the Programme	Contact Person
Mineral Dust and Respiratory Diseases in the Work Environment in Industries	Director In-charge
Preparation and Evaluation of On-site Emergency Plan and Safety Reports	Director In-charge
Delivering the Package Programme on Industrial Safety and Health (A Development Programme for Plant Faculties on Industrial Safety and Health)	Director In-charge
Inspection of Bulk Storage Facilities for Hazardous Substances	Director In-charge
Refresher Courses on Occupational Health for Plant Medical Officers	Director In-charge
Seminar on Safety Culture- A Ground Reality, Not A Myth	Director In-charge
Chemical Safety for Worker Members Of Safety Committee	Director In-charge
Associate Fellow of Industrial Health	Director In-charge
Control of Physical Hazards and Waste Management	Director In-charge
Safety Awareness programme for workers	Director In-charge
Safety in Construction Industry	Director In-charge
Title of the Programme	Contact Person

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Techniques of Hazard Identification and Assessment	Director In-charge
Diploma Course in Industrial Safety	Director In-charge
Environmental Hazards & their control in Industries	Director In-charge
Training Programme on Chemical Safety	Director In-charge
Workers Development Programme	Director In-charge
One Month Specialised Certificate Course in "Safety & Health" for Supervisory working in Hazard Industries	Director In-charge
Occupational Health and environmental Medicine for Medical & non-medical executives of the industries".	Director In-charge

TRAINING PROGRAMMES FOR THE YEAR 2008 REGIONAL LABOUR INSTITUTE, SARVODAYA NAGAR, KANPUR- 208 005	
Title of the Programme	Contact Person
Workshop on Safety Audit	Director In-charge
Management of Industrial Safety, Health and Environment in Industries	Director In-charge
Workshop on Safety Engineering and Management	Director In-charge
Package Training Programme for Plant Faculties on Industrial Safety and Health	Director In-charge
Seminar on Occupational Safety and Work Environment	Director In-charge
Training Programme on Chemical Safety	Director In-charge
Training Programme On Prevention & Control of Fire in Industry	Director In-charge
Training programme on Contemporary Chemical Safety for safety committee members	Director In-charge
Post Diploma Course On Industrial Safety 2008-2009	Director In-charge
Title of the Programme	Contact Person

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Training Programme On Testing & Examination of Lifting Machines & Pressure Vessels	Director In-charge
Training Programme On Effective Supervision for Safety & Health at Work.	Director In-charge
Training Programme On Safety & The Law	Director In-charge
Package training programme for plant faculties on ' Industrial Safety and Health'	Director In-charge
Training programme on Mineral Dust & associated health hazards in industries	Director In-charge
Workshop on work environment - its evaluation and control	Director In-charge
One Month Certificate Course on Safety & Health	Director In-charge
Workshop On Safety Audit	Director In-charge
Training programme on process safety management & Inspection of Bulk Storage Facilities for hazardous substances for Inspector of Factories	Director In-charge
Workshop on Safety Engineering & Management.	Director In-charge
Management of Industrial Safety, Health & Environment in Industries	Director In-charge
Seminar on 'Safety, Health & Environment in Process Industries'	Director In-charge
Training Programme on Chemical Hazards in industries	Director In-charge

ANNOUNCEMENT

INDOSHNET

Ministry of Labour & Employment, Government of India, is developing a National Network on Occupational Safety and Health information system known as INDOSHNET. Directorate General Factory Advice Service & Labour Institutes (DGFASLI), an attached office of the Ministry of Labour will act as a facilitator of the network system. The objective of the network is reinforcement and sharing of national occupational safety and health (OS &H) information on no-profit no-loss basis with a view to pooling our information resources for mutual benefit. The sharing of information will not only confine to the national level but also includes international sources. The communication of information will be through E-mail as well as postal/courier service. DGFASLI invites industrial organisations, institutions, industry associations, trade unions, professional bodies and non-governmental organisations having information on OS&H and willing to share the same with others at the national and international level to participate as members in the network. Interested agencies may please write for proforma of organisational profile to Director General, DGFASLI, Central Labour Institute Bldg., N.S. Mankikar Marg, Sion, Mumbai 400 022.

Note: Those who have responded to our earlier communication and sent organisation profile in the prescribed format need not write again.

NATIONAL REFERRAL DIAGNOSTIC CENTRE

Early detection and diagnosis of occupational health disorders and occupational diseases is one of the most important factors in the prevention and control of adverse health effects on workers due to various factors - physical, chemical, biological and psycho-social. The Industrial Medicine Division of Central Labour Institute, Mumbai runs a National Referral Diagnostic Centre (N.R.D.C.) for early detection and diagnosis of occupational diseases and recommends necessary measures for prevention/control of occupational health problems/occupational diseases. The diagnostic centre is well equipped for medical examination of the exposed workers and facilities are available for carrying out special investigation, e.g. Pulmonary function tests, Audiometry, ECG, Titmus vision test, Biological monitoring, etc. Medical professionals including Factory Medical Officers, ESI Doctors, Medical Inspectors of Factories and Certifying Surgeons, Doctors from Medical Colleges and Hospitals can refer suspected cases of occupational diseases to N.R.D.C. for diagnosis and advice. The communication should be addressed to the Director General, DGFASLI, Central Labour Institute Bldg., N.S. Mankikar Marg, Sion, Mumbai 400 022 for further details.

ANNOUNCEMENT

INDOSHNEWS is a quarterly newsletter that facilitates exchange of ideas and data developed through research, study and surveys in the areas of occupational safety and health. DGFASLI invites articles from individuals, industry, industrial associations, trade unions, professional bodies etc. having information on OS & H and willing to share the same with others at the national and international level.

- 1. Manuscripts for publication should be typed in double space within 3 to 4 A4 size sheets only on one side of the paper and sent in duplicate to the Editor-in-Chief. No photographs can be published.**
- 2. Once the manuscripts are accepted for publication, publisher reserves the right to make editorial changes as may be necessary to make the article suitable for publication; and publisher reserves the right not to proceed with publication for whatever reason.**
- 3. Authors should take care to ensure the accuracy of data and reference.**

ABOUT DGFASLI

GOVERNMENT OF INDIA, MINISTRY OF LABOUR & EMPLOYMENT DIRECTORATE GENERAL FACTORY ADVICE SERVICE & LABOUR INSTITUTES

The Directorate General Factory Advice Service & Labour Institutes (DGFASLI) is an attached office of the Ministry of Labour & Employment Government of India. DGFASLI organization was set up in 1945 under the Ministry of Labour, Government of India to serve as a technical arm to assist the Ministry in formulating national policies on occupational safety and health in factories and docks and to advise State Governments and factories on matters concerning safety, health, efficiency and well-being of the persons at workplace. It also enforces safety and health statutes in major ports of the country.

The Directorate General Factory Advice Service & Labour Institutes (DGFASLI) comprises:

- * Headquarters situated in Mumbai
- * Central Labour Institute in Mumbai
- * Regional Labour Institutes in Kolkata, Chennai, Faridabad and Kanpur

The Central Labour Institute in Mumbai functions as a socio-economic laboratory and is a national institute dealing with the scientific study of all aspects of industrial development relating to the human factors.

Over the years the Central Labour Institute has constantly grown not only in size but also in stature and has earned national and international recognition. It has been recognised by the International Labour Organisation as a Centre of Excellence in training on Occupational Safety and Health in the Asian and Pacific Region. It also functions as a National Centre for CIS (International Occupational Safety and Health Information Centre) and the Centre for National Safety and Health Hazard Alert System. At the national level, apart from providing research and training support to the Government and functioning as a technical arm of the Ministry of Labour, the institute provides comprehensive and multi-disciplinary services to the Industrial Port sector through studies, technical advice, training and dissemination of information. It also runs National Referral Diagnostic Centre for early detection of occupational disorders and thereby controls and prevents them. It has a modern Audio Visual Studio fully equipped with sophisticated video production equipment to produce quality U-matic video films on Safety and Health. The Regional Labour Institutes are a scaled-down version of the Central Labour Institute and cater to the needs of their respective regions.

The organization is poised to grow further, and meet the increased demands on it. In a developing country with a large number of industries having diverse and complex nature, the task of protecting safety and health of workers is an uphill task. Armed with the technology, good will of the industrial society and the strength of the dedicated staff, the organization is well prepared to meet the challenges of tomorrow. It is committed to the goal of making the workplace safer.

Visit us at : www.dgfasli.nic.in