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FROM THE DESK

This issue of INDOSHNEWS focuses on the need for training in management of safety and health at workplace. Although it has been proved beyond doubt that a knowledgeable and trained employee is an asset for any organisation, sometimes, the training is relegated to less important position because of different reasons. But in matters of safety and health, an untrained employee may result into disastrous consequences.

When we are talking about training of employees, we do not mean training of workers only. Training in safety and health should be imparted not only to workers, but also to employees at all levels upto the rank of Chief Executive. The duration and contents may vary; but training cannot be considered superfluous at any level in the organisation.

The importance of training has been acknowledged by the law makers as well. There are expert agencies in the country such as DGFASLI who conduct training programmes for key personnel like safety officers, managers, plant medical officers, competent persons, etc. Training at plant level for workers should preferably be done by in-house faculty. Training of these faculty is of vital importance. The DGFASLI gives training to these people also.

It will be our pleasure to be associated in important training programmes of factories and ports so that the people at the workplace get the benefit of the expertise available at national level.

(S.K. SAXENA)

TRAINING FOR OCCUPATIONAL SAFETY AND HEALTH

Industrial development of a nation is the barometer of its prosperity and progress. As such emphasis was laid on industrialisation right since the first five year plan onwards. This has resulted in continuous growth of industries in our country contributing to economic growth and better living standards. On the flip side, however, there are various associated occupational hazards those are posing increasing threats to safety and health at work and even to the society at large.

There is therefore an increasing concern for the safety and health of the industrial workers as the human beings are not only the capital of our earth but are also the driving force behind the enormous productive process.

To prevent accident and ill health by controlling safety and health hazard, engineering methods are preferred. These are often complemented by the use of Personal Protective Equipment (PPE).

However these measures, though MUST for introducing the safety in plants and processes, will not alone be sufficient in preventing industrial accidents and occupational diseases. It is an established fact that safety and health of the employees depend largely upon their own actions-omission of something that should have been done or the commission that was not authorised. The physical plant and its hardware are rarely the prime cause of accident. These actions in turn depend upon how well they have been made aware and trained regarding potential hazards, necessary safe-guards and safe work practices associated with their jobs. Accident prevention therefore depends basically upon training and motivation of employees towards safety. To achieve this, training and re-training of employees are most important.

Realising this, the safety legislation places great emphasis on education and training of

workers at all levels. The Factories Act, 1948 requires that every employer should provide such information, instruction, training and supervision those are necessary to ensure safety and health of all workers. Further, every worker has the right to receive training of all aspects of safety and health.

TRAINING STRATEGIES

For effectiveness, the training strategies should be formulated taking cognisance of the laws of learning viz. Primacy, Frequency and Recency.

Primacy

When a new employee comes to work he or she immediately begins to learn and form attitude about the job and the company. Therefore, it is vitally important that we convey the importance of operational safety to the employee at the initial contact with the company.

Frequency

We do those things best which we do frequently. Thus frequency is an important part of the learning process and certainly an important part of the safety programme. It must be made sure that safety rules, regulations and safe practices are repeated during job training and on other regular occasions throughout the work career. Continual reminders and regular use of safe methods will create safe, habit pattern that will eventually be followed almost automatically.

Recency

Recency might be a corollary to frequency in the laws of learning. The process of forgetting goes on alongwith that of learning. Much is lost by forgetting almost immediately after learning has taken place. Thus that which is learned last can be most easily recalled. As such our training tools and strategies must be designed to provide constant reminders of rules and regulations and safe practices.

The training strategies that make use of these laws of learning are described below:

I. New and transferred employee training:

On the first day of the new employee when he is obtaining the basic information about the company, employee benefits etc., in the Personnel department, he should be provided with the plant safety rules booklet and the general plant safety rules be discussed. This is to ensure that the employee recognises the importance of safety to the operations from the very beginning. The information could be given on the company's safety programmes and performance, procedures for reporting accidents and injuries, obtaining medical attention, emergency procedures etc. Later, when the employee reports to the new Supervisor, it is important that the departmental safety rules and the safety requirements of the new job are reviewed carefully. The same holds good when a veteran employee is moved to a new department or a new job.

II On the Job Instruction :

Subsequently the new employee or the veteran employee new on the job, is required to be given specific job instruction by applying the tools of job safety analysis, standard operating procedures and job instruction training.

III, Group Safety Meetings :

The learning laws of frequency and recency mandate that regular safety input be provided to the workforce. Group safety meetings are an effective tool for this purpose. Such meetings are to be held on a regular frequency and they should review the plant emergency programme. Group safety meetings are effective as they provoke lively discussion and information exchange.

IV. IV. Personal Contact :

Personal safety contact is a powerful tool for the development of favourable employee attitude towards safety and loss prevention. Such contacts reinforce employees' awareness of hazards, strengthen their knowledge of safe job procedures and generally enhance employee safety mindedness. The employee is more likely to express his opinion in such personal contact and he

feels important that the supervisor's attention and interest are directed so solely at him.

V

VV. Pre-Job Instruction :

While most of the jobs in our operations are repetitive, there are some jobs that are infrequently done. Pre-job safety instruction is especially appropriate for such type of job. In this, the supervisor includes information on potentially serious hazards that could occur if safe practices were not followed. This is in tune with the learning law of Recency.

TRAINING DESIGN AND METHODOLOGY

For the training to be meaningful and effective, the contents should be specific to the needs of the trainees. There has to be a clearly defined goal to be achieved through training so that the programme is steered in the right direction. The design should provide for opportunities to trainees to practice the taught concepts and skills.

The inputs of the training programme are to be put across effectively so that the desired learning takes place. The learners' motivation plays a vital role in this. Experience has shown that adult learners like to be active partners in the whole process and would like to make contribution from their knowledge and experiences rather than being just the passive recipients.

As such the training methods that promote their participation, score over those that rely by and large on unidirectional flow of inputs. Even when necessary to resort to lecture method because of certain inputs being new to trainees, efforts should be made to generate as much participation and involvement as possible through the use of the relevant examples and questions at appropriate time. Further, it has been seen that the learners wish to be involved in creating their own learning experiences and this way they learn better. Then there are individual differences including the pace at which they learn. The self-paced methods of

learning like “programmed learning “ are suitable when such differences exist to a marked extent.

ROLE OF THE DIRECTORATE GENERAL FACTORY ADVICE AND LABOUR INSTITUTES (DGFASLI)

The DGFASLI functions as the technical arm of the Ministry of Labour, Govt. of India on matters related to Safety, Health and Welfare of workers in factories and ports. It assists the government in the formulation and review of policy and legislation on occupational safety and health in factories and ports. It also enforces the Dock Workers’ (Safety, Health and Welfare) Act, 1986 and the rules and regulations framed thereunder in the major ports.

Besides this legislative function, DGFASLI provides assistance to industry in their efforts to promote safety and health at work by way of conducting research studies and surveys and provide education and training in the field of industrial safety and health through the four Labour Institutes viz. Central Labour Institute at Mumbai and the three Regional Labour Institutes at Calcutta, Chennai and Kanpur. Each of these Institutes is a multi-disciplinary set up comprising the disciplines of Industrial Safety, Industrial Hygiene, Industrial Medicine, Staff Training, Productivity and Major Accident Hazard Control. Besides these disciplines, the Central Labour Institute has also disciplines of Industrial Physiology, Industrial Psychology, Management Information Services and the Communication.

TRAINING PROGRAMMES

TRAINING OF TRAINERS

The industrial workforce in India being very large, it is not possible for a national organisation/institute like DGFASLI to train them all. The approach is therefore to cover that large group of Supervisory personnel/Workers in the industries through the Training of Trainers (resource persons) programme for Senior Officers and Safety Personnel from the industries who in turn train their workforce in the area of safety and health. The inputs to these resource persons comprise the technical

aspects on safety and health and inputs on designing the need based training programmes, training methodologies, management for training and evaluation of the training programmes.

OTHER TRAINING PROGRAMMES

Besides the Training of Trainers, the DGFASLI organises a number of short term training courses for various categories of personnel from industry viz. the Management, Supervisory and Trade Union Personnel. These courses provide a platform for discussing various issues related to industrial safety and health. The need based inplant training programmes are also conducted by DGFASLI for the benefit of large section of industrial personnel.

DIPLOMA COURSE IN INDUSTRIAL SAFETY

The Factories’ Act makes it a mandatory requirement for a factory to appoint the Safety Officer if the number of workers employed is One Thousand (1000) or more, or if the manufacturing process or operation involve any risk of injury, poisoning or disaster or any other hazard to health. Diploma in Industrial Safety is an essential qualification for appointment as a Safety Officer.

The DGFASLI assists the industry by way of making qualified Safety Officers available to them. For this a one year diploma course in Industrial Safety is conducted at the four Labour Institutes. The annual intake for the course is 200 students. With the appointment of qualified Safety Officers, Safety organisations are set in many factories.

The Dock workers’ regulations, 1990 also has a similar statutory provision for the appointment of Safety Officers in Ports. As such the subject of Safety in Dock work has been included as an elective paper in the Post Diploma Course in the Industrial Safety.

ASSOCIATE FELLOW OF INDUSTRIAL HEALTH

The factory workers exposed to hazardous chemicals and processes require constant occupational health care and medical surveillance. This, however, requires the medical professionals with specialised knowledge, skills and approaches. To build up such capabilities and competence, a Post

Graduate Certificate Course in Industrial Health for Medical Doctors working in factories and ports has been started at Central Labour Institute, Mumbai in 1992. The course is of three months duration with the intake capacity of 50 trainees. The successful candidates are awarded certificate of Associate Fellow of Industrial Health (AFIH).

BASIC AND REFRESHER COURSE FOR INSPECTORS OF FACTORIES

To enable the Inspectors of Factories to discharge their function effectively, DGFASLI conducts training for them on various aspects of Industrial Safety and Health. The newly recruited Inspectors of Factories as well as those with the experience of less than 10 years undergo a four weeks basic training course whereas two weeks refresher course is conducted for the senior Inspectors of Factories. Besides, two weeks advanced courses are given on specialised topics, such as chemical safety, major accident hazards control etc. These courses are organised at all the four Labour Institutes.

SAFETY LINKED PRODUCTIVITY IN THE SMALL SCALE SECTOR

The small scale sector plays a very important and crucial role in our economy and contributes to about 45 per cent of the total industrial production. However, the working conditions in most of the small scale units are far from satisfactory. Because of the fact that most of the units are one-man management, the entrepreneur is often over worked and unable to attend to matters which do not have an immediate and obvious pay off, resulting into insufficient attention paid to occupational safety and health. Realising this, the Govt. of India has initiated a scheme for training these entrepreneurs at their door step. Action oriented training workshops

which help the Entrepreneurs to identify low-cost solutions to their work related problems are conducted in the industrial estates to bring about improvement in working conditions, thereby leading to higher productivity, greater employee comforts and increased satisfaction. The workshop is run by the specialists of the multi-disciplinary team from DGFASLI involving the local small scale industry association and Factory Inspectorate. The ILO methodology that emphasises training methods which build upon local experiences and involve the participants in action learning is used for the conduct of such workshops.

APPRECIATION AND PROMOTIONAL PROGRAMMES

Exhibits and working models are excellent devices for getting across the message of safety effectively. Realising this, an Industrial Safety Health & Welfare Centre has been created at all the Labour Institutes since their inception. It houses a large number of working models, exhibits and display panels on various aspects of safety & health at work place. Thousands of Industrial workforce get benefited by visiting these centres every year.

Besides these Safety Centres, each institute has a mobile Safety Exhibition van equipped with exhibits on various types of industrial hazards, use of safety device etc., and daylight film/video projection system. These vans are taken to the doorstep of industry for spreading the message of safety and health among the employees there.

SAFETY TRAINING FOR DOCK WORKERS

To assist the Dock Labour Boards and other employers of dock workers in their efforts of dock workers on safety aspects, the DGFASLI conducts a two week specialised Train-the-Trainers course on Dock Safety & Training techniques for the supervisory trainers from ports. Besides this, one-week specialised training courses are also held for technical personnel from ports comprising Safety Officers, Competent Persons, authorised persons etc. As per the training strategy of DGFASLI, the three National Port Management Training Institutes are incorporating a training module on

occupational safety in their training programmes.

Safety and Health in the Asian and Pacific Regions.

INTER-COUNTRY SEMINARS

Over the years, Central Labour Institute of the DGFASLI organisation has arranged ILO/ARPLA/CLI intercountry seminars on several important issues. These seminars have been attended by 159 Labour Administrators and Inspection Officials under the Asian Regional Programme for Labour Administration of the ILO.

SPECIALISED TRAINING PROGRAMMES FOR FOREIGN TRAINEES

Under the various schemes such as Special Commonwealth African Assistance Programme (SCAPP), Commonwealth Fellowship for Technical Cooperation (CFTC), Colombo Plan etc. DGFASLI provides training to foreign fellows from Africa, Asia and Pacific region. The topics of these programmes include Industrial Safety and Health, Industrial Hygiene, Factory Inspection and Accident Prevention, Industrial Engineering and Industrial Psychology. Except for the Diploma course in Industrial Safety the duration of which is one year, all of the programmes last for 3 months. The trainees for such specialised programmes come from the countries including Bangladesh, Ghana, Iran, Malaysia, Mauritius, Nepal, Pakistan, Sri Lanka, Uganda and Zimbabwe.

The DGFASLI organisation in 1997 held 284 training programmes and seminars on Industrial Safety and Health and related aspects. The participants totalled over 6600 technical personnel, comprising Inspectors of Factories, Medical Officers, Safety Officers, Managers, Supervisors, Workers' Representatives. In addition, 648 half day Appreciation programme were conducted for about 73000 personnel from industry.

DGFASLI has achieved global appreciation through relentless and concerted efforts over the years in the area of research and training in the field of safety, health and working conditions. It has therefore rightly been recognised by the International Labour Organisation as the Centre of Excellence in Training on Occupational

ASSESSMENT OF DUST EXPOSURE AND ENVIRONMENTAL CONDITIONS AT A THERMAL POWER STATION

This environmental study was conducted in the Coal Handling Plant of a Thermal Power Station in March, 1997 to evaluate the level of airborne coal-dust exposure, examine the safety measures adopted and to suggest further preventive control measures.

Coal obtained from nearby mines is screened and crushed to required size in the crusher house. Excess of coal is stacked in open. Crushed coal is passed to bunkers which feed the coal to the coal mills. In the coal mills, coal is pulverised and then pneumatically infected to boiler furnace. Coal combustion takes place in the furnace to produce steam which is then used to generate electricity. During the combustion, waster fly-ash is produced, which is collected by means of electro-static precipitators.

METHODOLOGY :

Airborne coal-dust and fly-ash samples, both total inhalble and respirable, were collected from locations such as wagon-tippers, track hopper, crusher house, transfer points, stackyard, bunkers, coal mills, furnaces, ESP hoppers and general atmosphere and analysed gravimetrically. Sizing of samples were done optically. Free silica content from selected samples was also estimated by Talvite method.

FINDINGS :

At all the locations in the coal handling plant, the total airborne and respirable dust concentration is found to be very much higher than the Permissible

Limit of Exposure (PLE). Concentration of airborne total inhalable coal dust was more than its PLE (2.07 mg/m³) by 1.16 to 85.60 times; whereas, that of fly ash was more than its PLE (1.43 meg/m³) by 8.85 to 48.40 times. A very high proportion of dust lies within the size fraction of 0.5 to 5 um, posing more serious health risk to the workers exposed therein.

RECOMMENDATIONS :

Recommendations such as provision of effective water sprinkler system, enclosing operational system, supply of respiratory protective equipment, cleanliness and house-keeping, provision of suitable exhaust system, in-plant training and education of safety and health, etc., have been made in the report.

EVALUATION OF AIRBORNE CONTAMINANTS IN THE WORK ENVIRONMENT OF A DYESTUFF PLANT

An environmental monitoring study was carried out in a dyestuff plant in March, 1997 to assess the levels of airborne contaminants - Benzene, Hydrochloric Acid mist and Bromine and to suggest preventive and control measures, if necessary.

In the plant, Anthraquinone is manufactured by using Phthalic anhydride, Benzene and Aluminium trichloride. In the process, Hydrochloric acid gas is evolved which is scrubbed in water. Besides, Amino Bromo Anthraquinone is manufactured by dissolving Amino Anthraquinone in 98% Sulphuric Acid and brominating it by the addition of liquid Bromine.

METHODOLOGY :

Samples of the airborne contaminants were collected at the breathing zone from different locations. Benzene samples were collected in the activated charcoal tubes at the rate of 11litre/min, and analysed on Gas Liquid Chromatograph. Similarly, samples of Bromine and Hydrochloric Acid mist were collected in Methylorange and 0.1N Sodium Hydroxide respectively and analysed spectrophotometrically.

FINDINGS :

The level of airborne concentration of Benzene was found to be ranging between 3.48 and 22.63 mg/m³, which is well within its Permissible Limit of Exposure (PLE) of 30 mg/m³. Similarly, the level of Hydrochloric Acid concentration was ranging from 0.04 to 0.41 mg/m³ with an average of 0.19 mg/m³, which is also below its PLE of 7.0 mg/m³. The level of airborne Bromine concentration ranged from 0.03 to 0.42 mg/m³, which also is within its PLE of 0.7 mg/m³.

RECOMMENDATIONS :

Inspite of the airborne concentrations of Benzene, Hydrochloric Acid and Bromine, being below their respective PLEs, certain recommendations such as making local exhaust system more effective, provision of PVC shutters for hoppers in order to prevent dispersion of Benzene vapours, careful maintenance of reactions vessels to prevent gas leakage, good house keeping etc., were made to the management.

ASSESSMENT OF AIRBORNE CONTAMINANTS IN THE WORK ENVIRONMENT OF AN ELECTRONIC FACTORY

The environmental monitoring study was carried out in an electronics parts manufacturing factory to assess the levels of airborne Phenol, 1,2,4 trichlorobenzene and Lead metal fumes and to suggest preventive/control measures if necessary.

The factory manufactures semi conductor devices viz. wide range of Diodes-Glass and plastic encapsulated package and zener diodes. In tinning section, soldering operation is carried out using Tin-Lead alloy. In Surface Mount Device (SMD) Section, soldering of silicon wafers is done without using flux solder paste of Tin, Lead and Silver. In Deflashing-Cleaning section extra epoxy material is removed from the encapsulated diodes by dipping them in hot solvent called Dynasolve-185.

METHODOLOGY :

Samples of airborne lead fumes were collected in GF filter papers at the rate of 7 to 14 litres/min. at the breathing zone of workers from various locations of Tinning and SMD sections. These lead samples were analysed on Atomic Absorption Spectrophotometer. Air samples of phenol were collected at the rate of 1.5 to 2. litres/min. in distilled water, from Deflashing-Cleaning section and analysed by spectrophotometrically. Similarly, samples of airborn 1,2,4-Trichlorobenzene were collected at the

rate of 1 litre/min. in the activated charcoal tubes, from Deflashing-Cleaning section. These samples were analysed on Gas Chromatograph using flame Ionisation Detector.

FINDINGS :

The average airborne concentration of Lead at Bath No.1 of Tinning Section was found to be 0.15 mg/m^3 (Range $0.06\text{-}0.19 \text{ mg/m}^3$) which is equal to its TLV-TWA of 0.15 mg/m^3 with double exhaust on, whereas it was 0.16 mg/m^3 (Range $0.14\text{-}0.20 \text{ mg/m}^3$) with single exhaustion.

At Bath No.2, the average airborne concentration of lead was found to be 0.16 mg/m^3 (Range $0.11\text{-}0.20 \text{ mg/m}^3$) which exceeded its TLV-TWA.

In SMD section the airborne Lead level was 0.063 mg/m^3 which is well within its TLV-TWA.

The airborne level of Phenol in the Deflashing-Cleaning section was far below its TLV-TWA of 19 mg/m^3 , the average being 0.56 mg/m^3 with range from 0.27 to 1.25 mg/m^3 . Similarly, the average airborne concentration of 1,2,4-Trichlorobenzene in the Deflashing-Cleaning Section was 11.1 mg/m^3 which is also well within its TLV-TWA of 37 mg/m^3 .

RECOMMENDATIONS :

Recommendations such as provision of effective exhaust system at all the baths, supply of suitable PPE and a follow up study after the implementation have been suggested to the management.

**INDUSTRIAL PSYCHOLOGY DIVISION, CLI, MUMBAI
HANDLING PROBLEM BEHAVIOUR OF EMPLOYEES**

A critical challenge to the manager's productivity effort lies in the area of uncooperative subordinate behaviour. The few employees who refuse to cooperate, who come to work late, who argue over the assignments, who fail to follow direction and who are chronic rule violators, provide constant barrier to productivity. Some employees have family difficulties, other may suffer from alcoholism, drug dependency or a variety of physical or psychological ailments. All these personal difficulties have the potential to interfere with workers' abilities to satisfactorily perform their jobs. Such behavioural problems if ignored or inappropriately handled by the supervisors or the managers, it may result in various organisational problems. Productivity declines, absenteeism increases, quality of product or services deteriorates, safety guidelines are ignored, company policies, procedures, rules are disobeyed and ultimately entire work culture gets contaminated. Before these signs become apparent, intervention is usually essential as a preventive measure.

CONTENTS :

- * Identification of problem behaviour
- * Counselling Skills
- * (Carkhuff Model)
- * Behaviour modification approach and techniques
- * Performance Counselling
- * Handling addiction behaviour
- * Employee assistance programme
- * Practical tips for handling employee behavioural problems

PARTICIPANTS:

The participation is open to the shopfloor engineers and managers from any functional area (production, personnel, safety, medical etc.).

DURATION : 5 Days

**INDUSTRIAL HYGIENE DIVISION
CLI, MUMBAI
TRAINING WORKSHOP ON
SELECTION & QUALITY ASSURANCE FOR EFFECTIVE USE OF
PERSONAL PROTECTIVE EQUIPMENT**

Use of different types of PPE have considerably been increased in industries to protect their workers from injuries and accidents as well as to ensure safeguard from injurious effect to various type of hazardous chemicals. It is very much understood that the degree of protection that these devices can provide greatly depends on the quality of the equipment available alongwith effective use of selection & maintenance of the same at the plan of work. Keeping in view of the above, this three day workshop has been organised.

CONTENTS :

- * Introduction to the course
- * Provision contained in the Factories Act relating to use of PPE
- * Classification of Safety Equipment on PPE
- * Criteria for selection of PPE
- * Specification & Testing methods for:
 - a) Respiratory PPE
 - b) Non-Respiratory PPE
- * Medical aspects of using PPE
- * Psychological aspects concerning use of PPE
- * Case studies on PPE by the participants

PARTICIPANTS :

This course is designed for middle management, personnel such as supervisors, chemists, safety officers, technical officers concerned with ensuring safety and health in industries.

DURATION : One Week

INDUSTRIAL HYGIENE DIVISION CLI, MUMBAI

EVALUATION & CONTROL OF HAZARDS IN CHEMICAL INDUS- TRY

The chemical industry occupies a pivotal position in meeting the basic human needs and desires. In fact, the industry confers innumerable benefits to humanity and makes life happier and healthier.

In the recent past some major disasters which have radically changed the approach to safety in handling chemicals were: Flixborough disaster in 1974 (UK). Seveso pesticides disaster in 1976 (Italy) Mexico city LPG disaster in 1984 (Mexico) and Bhopal MIC disaster in 1984 (India). It also reminds us the thought of ever Great Scientist Albert Einstein "Concern for man himself and his safety must always form the chief interest of all technical endeavour and never forget this in the midst of your diagrams and equations".

In a chemical industry, exposure to workers arises during the handling of various toxic chemicals and synthesis of large variety of materials. The health

hazards of the toxic chemicals used in chemical industry include carcinoma of bladder by the diphenyl bases, cyanogenic and anemogenic effects by nitro and amino compounds and central nervous system depression by various organic solvents. Respiratory and eye irritation is caused by chemicals such as Chlorine, Bromine, Sulphuric Acid etc. The chemical industries are also covered in a 'List of industries involving hazardous processes' under Section - 2(cb) of the First Schedule of the amended Factories Act, 1987.

CONTENTS :

- * Concept of Industrial Hygiene
- * Threshold Limit Values
- * Occupational Health Hazards
- * Concept of Major Hazard Control
- * Biological Monitoring
- * Detection, Sampling & Analysis of Toxic substances
- * Fire & Explosion Hazards and Prevention
- * Storage, Handling & Transportation of Hazardous Chemicals
- * Control of Work Environment
- * Personal Protective Equipment
- * Industrial Waste Treatment & Disposal
- * Films on Safety and Health

PARTICIPANTS:

Middle management personnel such as Supervisors, Analytical Chemists, Technical/Safety Officers possessing basic knowledge of Chemistry.

DURATION : One Week

CIS (from the French name, Centre international d'Information de securite et d'hygiene 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 86 affiliated National Centres and 23 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)
- ILO CIS 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: Respiratory protective equipment against dust (RPE) Comparison of subjective assessments of comfort

and efficiency with the results of standardised tests - Practical considerations

CIS ACCESSION NUMBER :
CIS 91-1195

ABSTRACT :

Subjective assessments of comfort and efficiency of respiratory protective equipment (RPE) against dust have been carried out in health volunteers during standardised inward leakage tests. The results show a clear-cut difference between two RPE classes, facepieces and filters (Pcart) and filtering face pieces (Ppap). Subjectively, Pcart were felt to be more efficient and less comfortable than Ppap. The comparison between subjective and objective efficiency shows that for Pcart subjective estimates have good correlation with actual efficiency. For Ppap, whatever their measured leakage, subjective efficiency is always estimated as poor. Under the experimental conditions of this study, breathing is only slightly hampered by any RPE. The discomfort of Ppap is related to their reduced field of vision. The strap system is the main discomfort source of Pcart. These results have to be considered for dust RPE selection and user's information in order to improve the protection of workers.

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

MATERIAL SAFETY DATA SHEET

IDENTIFICATION:

Product Name(s) : SULFUR

Composition/Information on ingredients the criteria for listing components in the composition section is as follows:

Carcinogens Are Listed When Present At 0.1 % Or Greater; Components Which Are Oth-erwise Hazardous According To Osha Are Listed When Present At 1.0 % Or Greater; Non-Hazardous Components Are Listed At 3.0 % Or Greater. This Is Not Intended to be a complete Composit-Ional Disclosure. Refer to Section 14 for Applicable States' Right To Know And Other Regulatory Information.

HAZARD IDENTIFICATION :

EMERGENCY OVERVIEW

Appearance: Light yellow solid
Odor: Sulfur odor

WARNING STATEMENT

WARNING : FLAMMABLE SOLID
MAY CAUSE EYE IRRITATION

HMIS

Health: 1 Reactivity: 0
Flammability: 3 Special : -

NFPA

Health: 1 Reactivity : 0
Flammability: 3 Special : -

EFFECTS OF OVEREXPOSURE

Acute:

Eyes: May cause irritation, experienced as mild discomfort and seen as slight excess redness of the eye.

Skin: Brief contact may cause slight irritation. Other than the potential skin irritation effects noted above, acute (short term) adverse effects are not expected from brief skin contact; see other effects, below, and Section 11 for information regarding potential long term effects.

Inhalation: Dust may cause irritation of the nose and throat. Overexposure to high concentrations of dust may cause respiratory irritation, experienced as coughing and difficulty breathing.

Ingestion: May cause abdominal discomfort, nausea, and diarrhea.

Sensitization Properties: Unknown.

Chronic: Repeated inhalation may cause lung damage.

Repeated skin contact may cause a persistent irritation or dermatitis.

Medical Conditions Aggravated by Exposure: Overexposure to vapor, dust or mist may aggravate existing respiratory conditions, such as asthma, bronchitis, and inflammatory or fibrotic respiratory disease.

Because of its irritating properties, repeated skin contact may aggravate an existing dermatitis (skin condition).

Other Remarks: None

FIRST AID MEASURES

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids apart while flushing to

rinse entire surface of eye and lids with water. Get medical attention.

Skin: Wash skin with plenty of soap and water for several minutes. Get medical attention if skin irritation develops or persists.

Ingestion: If patient is conscious and can swallow, give two glasses of water (16 oz.) Induce vomiting as directed by medical personnel. Do not induce vomiting or give anything by mouth to an unconscious or convulsing person.

Inhalation: If irritation, headache, or drowsiness occurs, remove to fresh air.

Other Instructions: None

FIRE-FIGHTING MEASURES

Ignition Temperature - AIT (degrees F):
Not determined.

Flash Point (degrees F): 405 (CC)

Flammable Limits (%):

Lower: 3.3

Upper: 46

Recommended Fire Extinguishing Agents And Special Procedures: Use fine spray or fog to control fire by preventing its spread and absorbing some of its heat. Use water spray to cool fire-exposed surfaces, protect personnel, and knock down toxic fumes. Water or foam may cause frothing of molten sulfur. Extinguish fire using agent suitable for surrounding fire. (Fire in liquid sulfur can be extinguished readily by closing container to exclude oxygen).

Unusual or Explosive Hazards:
Explosive air-vapor mixtures may form.

Danger Readily forms explosive air-vapor mixtures; may release explosive vapors that travel, be ignited at remote locations, and flash back.

Containers may explode in fire. Do not expose to heat, sparks, flame, static, or other sources of ignition. When handling, use non-sparking tool, ground and bond all containers.

Extinguishing Media which must not be used: Not determined.

Special Protective Equipment for Firefighters: Wear full protective clothing and positive pressure breathing apparatus.

ACCIDENTAL RELEASE MEASURES (Transportation Spills: CHEMTREC(800)424-9300)

Procedures in Case of Accidental Release, Breakage or Leakage: Avoid breathing dust. Pressure demand air supplied respirators should always be worn when the airborne concentration of the contaminant or oxygen is unknown. Otherwise, wear respiratory protection and other personal protective equipment as appropriate for the potential exposure hazard. Wear gloves, goggles, and protective clothing to avoid contact with eyes, skin, or clothing. Use vacuuming or sweeping compound for clean-up. Do not dry sweep or use methods which increase dusting. Prevent entry into sewers and waterways.

EXPOSURE CONTROLS/ PERSONAL PROTECTION

Protective Equipment (Type)
Eye/Face Protection: Safety glasses, chemical type goggles, or face shield recommended to prevent eye contact.

Skin Protection: Workers should wash exposed skin several times daily with soap and water. Soiled work clothing should be laundered or dry-cleaned.

Respiratory Protection: Airborne concentrations should be kept to lowest levels possible. If vapor, mist or dust is generated and the occupational exposure limit of the product, or any component of the product, is exceeded, use appropriate NIOSH or MSHA approved air purifying or air supplied respirator after determining the airborne concentration of the contaminant. Air supplied respirators should always be worn when airborne concentration of the contaminant or oxygen content is unknown.

Ventilation: Local exhaust ventilation recommended if generating vapor, dust, or mist. If exhaust ventilation is not available or inadequate, use MSHA or NIOSH approved respirator as appropriate.

Exposure Limit for Total Product: None established for product.

STABILITY AND REACTIVITY

This Material reacts violently with: (If Others is checked below, see comments for details)

Air	Water	Heat	Strong Oxidizers
-	-	-	X

Others None of These
-

Comments: None

Products evolved when subjected to heat or combustion: Toxic levels of sulfur dioxide, sulfur trioxide, and sulfuric acid.

Hazardous Polymerizations: Do not occur

TOXICOLOGICAL INFORMATION

ANIMAL TOXICITY DATA

Median Lethal Dose
Oral: LD50 Believed to be > 2.00 - 5.00 g/kg (rat) slightly toxic

Inhalation: Not determined.
Dermal: LD50 Believed to be > 2.00 g/kg (rabbit) practically non-toxic

Irritation Index, Estimation of Irritation (Species)

Skin: (Draize) Believed to be > .50 - 3.00 /8.0 (rabbit) slightly irritating

Eyes: (Draize) Believed to be > 15.00 - 25.00 /110 (rabbit) slightly irritating

Sensitization: Not determined.

Other: None

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 90,000 chemicals/materials are available with Central Labour Institute, Computer printout will be supplied on nominal charge basis.

LIBRARY-CUM-INFORMATION CENTRE

The Library-cum-Information Centre of Central Labour Institute has unique and rare collection of different kind of publications in the field of Occupational Safety, Health and Management. It also has a good collection of different standards, codes, regulations and publications on allied subjects. In the current year the centre is subscribing to 34 Indian & foreign journals, besides receiving complimentary copies of different periodicals from all over the world. The centre provides facilities for study and research and at the same time supplies authentic and up-to-date information on Occupational Safety, Health and Management. It also extends reading facilities to students & scholars attending different training programmes & courses conducted by CLI. From January 1997 till date a number of publications in the field of OS&H have been added to Library. Some of them are :

MANAGING THE TRAINING & DEVELOPMENT FUNCTION BY ALLEN D. PEPPER

Publisher: Gower Publishing Co.Ltd,
Hants, England

This book provides practical guidance on managing the function. it is addressed to training/development specialists and to personnel or line managers with relevant responsibilities. It offers ways of establishing policies and practices in line with corporate objectives and suggest how to overcome many of the inevitable problems.

The text is supported by actual case histories illustrating analysis, planning-decision making, action and the emphasis is on cost effectiveness. A number of ideas, all concerned directly or indirectly with training and development which have potential material for use by those people who already have some orientation in management thinking and are concerned with bridging the gap between their knowledge of training practices and the complex and much less clear requirements of the organisation are given.

SYNERGOGY - A NEW STRATEGY FOR EDUCATION TRAINING AND DEVELOPMENT BY JANE SRYGLEY MOUTON AND ROBERT R. BLAKE

Publisher: Suchandre Publications,
Mumbai, India

This book is the first comprehensive orientation to synergogy, a presentation of its assumptions, methodologies and applications as well as the response of those who have used it.

There are ten chapters. The first six chapters deal with the principles and design for enhancing learning and team effectiveness, team-member teaching, performance judging are clarifying attitudes design. Chapters seven to nine examine the role of the learning Administrator and the application of Synergogy in business settings and educational institutions. The final chapter examines the synergogy's

implication for the future of education, training and development.

UNIVERSITY ASSOCIATES TRAINING TECHNOLOGIES BY J. WILLIAM PFEIFFER ARLETTE C. BALLEW

Publisher: Adilye Books Prince Limited, New Delhi, India

This book is set of seven columns in a comprehensive instant reference to the techniques of experimental learning. It

tells how to select, use and develop specific strategies for training and development, organisational assessment and certain personnel work. Each book provides comprehensive coverage of a particular technology, its advantages, disadvantages, brief background and history of it and how to avoid pitfalls and how to design our own one.

The training technologies covered are structure experiences, instruments, lectures, theory, models, role plays, case studies, simulations, game, design skills, presentation and education skills.

CHILD LABOUR CONTINUES TO BE A PROBLEM IN INDIA

Child labour in the garment industry remains a greater problem in Asian than in Latin American, with children in India and the Philippines working for small subcontractors, according to a recent US labour department report.

A summary of the report, published in the US media in advance of its official release said that 36 of the largest US apparel companies have adopted formal standards prohibiting child labour as well as other labour violations like the use of forced labour.

As a result, fewer children appear to be working overseas to make apparel sold in the US as companies facing adverse publicity adopt standards barring such labour in their subsidiaries and suppliers, the report said.

However, the department also found that American companies do not adequately enforce their own standards or "code of conduct".

And hence child labour remains pervasive in small factories and in homes in some countries, particularly in Asian region including India and some other South Asian Countries.

Garment producers in developing countries and importers in the US remain nervous about the labour departmental initiative on the issue for fear that child labour may be used as a red herring for protectionism.

Garments sold in America present a \$178 billion market. Of these, more than half were imported in 1995 against 30 percent in 1980.

Source: The Hindu dated 22.10.1997

NMPT ORGANISES WORKSHOP ON PORT SAFETY EFFECTIVENESS

New Mangalore Port Trust organised a one day workshop on "Effectiveness of the Port Safety Committee" at Panambur here today.

Mr. S.K. Saxena, Directory General Factory Advisory Services and Labour Institutes (DGFASLI) inaugurated the workshop.

In his inaugural address, Mr. Saxena complimented the Chairman of the New Mangalore Trust for his interest in promoting safety measures in the Port.

He made a special mention about the steps taken by the Chairman to provide all protective equipment to dock workers such as safety helmet, safety shoes, rain coats, uniforms, and other facilities.

He advised port users and trade representative to attend the safety committee meetings regularly and take active part in the functioning of the committee.

Captain Ram Kumar, Chairman of NMPT, presiding over the functioning said that the workers safety should be

and will be given top most priority. "The responsibility for maintaining safety is not of one person or organisation but it is a combined duty. The appointment of Mr.P.K. Mohanty, Deputy Chairman, as the Chairman of the Safety Committee of the Port, reaffirms the commitment attached to Safety," he added.

Participants urged to evolve new ideas

He advised the participants of the workshop to evolve new ideas and methods to improve the functioning of the Safety Committee and assured continued cooperation in the implementation of the safety measures.

Captain Ram Kumar released the Safety Audit Report, conducted by DGFASLI.

Mr. P.K. Mohanty, Deputy Chairman and Mr. R.D. Ramteke, Director(Dock Safety), DGFASLI, Mumabi were the chief guests. Mr. Asis K. Chakrabarti, Director of DGFASLI, conducted the workshop. Offices incharge of safety from KIOCL, MCF, IOC, MRPL and HOPCL participated.

Source: Morning News dated 18.01.1998

HAZARDOUS UNITS ARE STILL EMPLOYING CHILDREN

Only 254 children were found to be working in hazardous industries in West Bengal, a centrally sponsored survey conducted here stated.

Talking to newsperson here on Wednesday night State Labour Secretary V. Subramaniam said as many as 15,792 children were also found to be working in several non-hazardous industrial units in the state and steps were being taken to free them.

Only four industrial units in these state had so far complied with the government directive by paying fines of Rs.20,000 each for employing child labourers in their units. Mr. Subramaniam, however, regretted that a vast majority of such factory owners refused to pay any fine and decided to move court.

The state government, in a recent circular had prevented all government employees from employing children for household work and cautioned them of disciplinary action in case of its violation.

Source: Times of India dated 11.7.1997

**TRAINING PROGRAMMES
APRIL '98 - SEPTEMBER '98**

CENTRAL LABOUR INSTITUTE , SION, MUMBAI - 400 022

Course Title	Date	Person to be contacted
3 months Post Graduate Certificate Course in Ind.Health (AFIH)	From April, 1998	Director Incharge (Med) C.L.I., Mumbai
Team Building	30th March - 4th April, 1998	Director Incharge (STD) C.L.I., Mumbai
Supervisory Development	20th April - 24th April, 1998	Director Incharge (STD) C.L.I., Mumbai
Industrial Heat - Evaluation & Control for Higher Productivity	20th April - 23rd April, 1998	Director Incharge (ERGO) C.L.I., Mumbai
2 Days' Workshop on Safety Audit	23rd April - 24th April, 1998	Director Incharge (Safety) C.L.I., Mumbai
Selection & Quality Assurance for effective use of PPE	27th April - 29th April, 1998	Director Incharge (Ind.Hygiene) C.L.I., Mumbai
Management of Human Factors in Safety & Health	27th April - 30th April, 1998	Director Incharge(Ind.Psy) C.L.I., Mumbai
One Day Workshop on Safety Audit	15th May, 1998	Director Incharge (Safety) C.L.I., Mumbai
Working Environmental - Its Evaluation/Control	25th May - 29th May, 1998	Director Incharge(Ind.Phy.) C.L.I., Mumbai
Identification of Hazards/Stresses in Industries	15th June - 19th June, 1998	Director Incharge (Ind.Phy.) C.L.I., Mumbai
Diploma Course in Industrial Safety 1998-99	15th June - 30th June, 1998	Director Incharge (Safety) C.L.I., Mumbai
Construction Safety	17th June - 19th June, 1998	Director Incharge (CS) C.L.I., Mumbai

Course Title	Date	Person to be contacted
Personal Growth & Group Dynamism	22nd June - 26th June, 1998	Director Incharge(STD) C.L.I., Mumbai
3-days training programme on Testing & Examination of Lifting Machinery, Tackles & Pressure Vessels	24th June - 26th June, 1998	Director Incharge (Safety) C.L.I., Mumbai
Safety in use of Chemicals at work	6 th July - 10 th July, 1998	Director Incharge (Ind.Hygiene) C.L.I., Mumbai
Industrial Ergonomics/ Human Factor for augmenting Safety, Health and Productivity at work	6 th July - 10 th July, 1998	Director Incharge (Ergo.) C.L.I., Mumbai
Training Programme on Occupational Health & Environmental Medicine	6 th July - 17 th July, 1998	Director Incharge (Med.) C.L.I., Mumbai
Advanced Training programme on 'Occupational Health & Environmental Medicine'	20 th July - 31 st July, 1998	Director Incharge (Med.) C.L.I., Mumbai
Basic Course for Senior Inspector of Factories	20 th July - 31 st July, 1998	Director Incharge (Safety) C.L.I., Mumbai
Training Workshop on Hazard & Operability Study	13 th July - 14 th July, 1998	Director Incharge (MAHCA) C.L.I., Mumbai
Wage & Salary Administration	13 th July - 17 th July, 1998	Director Incharge (Prod.) C.L.I., Mumbai
Training Programme for CIS	10 th August - 12 th August, 1998	Director Incharge (Safety) C.L.I., Mumbai
Productivity Techniques	10 th August - 14 th August, 1998	Director Incharge(Prod.) C.L.I., Mumbai
Handling Problem Behaviour of Employees	17 th August - 21 st August, 1998	Director Incharge(Ind.Psy.) C.L.I., Mumbai

Course Title	Date	Person to be contacted
Specialised Post Graduate Course on Occupational & Environmental Medicine for students of D.E.T.R.D. Course	17 th August - 28 th August, 1998	Director Incharge(Med.) C.L.I., Mumbai
Training of Trainers	24 th August - 28 th August, 1998	Director Incharge(STD) C.L.I., Mumbai
Selection Criteria of Industrial Workers	24 th August - 28 th August, 1998	Director Incharge(Med.) C.L.I., Mumbai
Evaluation & Control of Health Hazards in Drugs & Pharmaceutical Industry	7th Sept. - 11th Sept., 1998	Director Incharge(Ind.Hygiene) C.L.I., Mumbai
Fatigue & Driving	7th Sept. - 11th Sept., 1998	Director Incharge(Ind.Phy.) C.L.I., Mumbai
Construction Safety	9th Sept. - 11th Sept., 1998	Director Incharge (CS) CLI, Mumbai
TQM, Bench Marking & BPR	14th Sept. - 18th Sept., 1998	Director Incharge (Prod.) C.L.I., Mumbai
Motivation for Safety, Health & Productivity	15th Sept. - 18th Sept., 1998	Director Incharge(Ind.Psy.) C.L.I., Mumbai
Industrial Hazards/ Stresses - Evaluation & Management for Higher Productivity	14th Sept.- 18th Sept., 1998	Director Incharge (Ergonomics) C.L.I., Mumbai
Effective Supervision for Results	21st Sept. - 25th Sept., 1998	Director Incharge (STD) C.L.I., Mumbai
Techniques of Hazard Assessment & its control in MAH Installation	21st Sept. - 25th Sept., 1998	Director Incharge(MAHCA) C.L.I., Mumbai

Course Title	Date	Person to be contacted
Evaluation & Control of Hazards in Thermal Power Plant	21st Sept. - 25th Sept., 1998	Director Incharge (Ind.Hygiene) C.L.I, Mumbai
One Day Seminar on Noise & Its control	28th September, 1998	Director Incharge(Safety) C.L.I., Mumbai

**TRAINING PROGRAMMES
APRIL '98 - SEPTEMBER '98**

REGIONAL LABOUR INSTITUTE, SARVODAYA NAGAR, KANPUR - 208 005

Course Title	Date	Person to be contacted
Seminar on future Challenges for Health & Safety Representatives in Industrial Sector	15th April, 1998	Director Incharge R.L.I., Kanpur
Training programme on prevention & control of Fire in Industry	13th April - 17th April, 1998	Director Incharge R.L.I., Kanpur
Management of hazardous chemicals at the place of work in industries	27th April - 1st May, 1998	Director Incharge R.L.I, Kanpur
Training programme on Safety Audit	4th May - 6th May, 1998	Director Incharge R.L.I., Kanpur
Training programme on Testing & Examination of Lifting Machines, Tackles & pressure vessels	18th May - 22nd May, 1998	Director Incharge R.L.I., Kanpur
Training programme on Team Building for Health, Safety & Welfare	8th June - 12th June, 1998	Director Incharge R.L.I., Kanpur
Workshop on HAZOP	8th July - 10th July, 1998	Director Incharge R.L.I., Kanpur

Course Title	Date	Person to be contacted
Safety programme on Industrial Safety & Hygiene	13th July - 17th July, 1998	Director Incharge R.L.I., Kanpur
Training programme on Chemical Safety	27th July - 31st July, 1998	Director Incharge R.L.I., Kanpur
Training programme on Personal Growth & Group Dynamics for improving Health & Safety at the place of work	3rd Aug. - 7th Aug., 1998	Director Incharge R.L.I., Kanpur
Specialised Course on Chemical Safety for Factory Inspectors	17th Aug. - 21st Aug., 1998	Director Incharge R.L.I., Kanpur
Training programme on Motivation for Safety & Health	7th Sept. - 9th Sept., 1998	Director Incharge R.L.I., Kanpur

**TRAINING PROGRAMMES
OCTOBER '97 - MARCH '98**

REGIONAL LABOUR INSTITUTE, SARDAR PATEL ROAD, CHENNAI-600 113

Course Title	Date	Person to be contacted
Evaluation & Control of Airborne Contaminants in Work Environment	27th May - 29th May, 1998	Director Incharge R.L.I., Chennai
Safety Management in Engineering Industry	8th June - 12th June, 1998	Director Incharge R.L.I., Chennai
Testing & Examination of Pressure Vessels	21st July - 23rd July, 1998	Director Incharge R.L.I., Chennai
Team Building	17th August - 21st August, 1998	Director Incharge R.L.I., Chennai
Refresher Course on 'Occupational Health'	1st Sept. - 11th Sept., 1998	Director Incharge R.L.I., Chennai

**TRAINING PROGRAMMES
APRIL '98 - SEPTEMBER '98**

REGIONAL LABOUR INSTITUTE, LAKE TOWN, CALCUTTA - 700 089

Course Title	Date	Person to be contacted
Application of HAZOP Techniques in Industry	3rd Week of April 1998 (3 days)	Director Incharge R.L.I., Calcutta
Environmental Hazards & their control in Industry	3rd Week of May 1998 (5 days)	Director Incharge R.L.I., Calcutta
Safety in handling & use of Chlorine	1st Week of June 1998 (2 days)	Director Incharge R.L.I., Calcutta
Safety, Health & Environment at Workplace	3rd Week of July 1998 (5 days)	Director Incharge R.L.I., Calcutta
Advanced Action Oriented Programme on Safety, Productivity and a better place to work	3rd Week of July 1998 (5 Days)	Director Incharge R.L.I., Calcutta
Safety & Health at Work for Workers	1st Week of August 1998 (5 days)	Director Incharge R.L.I., Calcutta
Appreciation Course in Industrial Hygiene	3rd Week of August 1998 (5 days)	Director Incharge R.L.I., Calcutta
Refresher Course on Occupational Health	4th Week of August 1998/ 1st Week of September 1998	Director Incharge R.L.I., Calcutta
Training Programme on Major Accident Hazard Control	2nd Week of September 1998	Director Incharge R.L.I., Calcutta

INDOSHNET

Government of India, Ministry of Labour is developing a National network on Occupational safety and health information system known as INDOSHNET. Directorate General Factory Advice Service & Labour Institute (DGFASLI), an attached office of the Ministry of Labour, will act as facilitator of the network system. The objective of the network is reinforcement and sharing of national occupational safety & health (OS&H) information on no-profit and no-loss basis with a view to pool our information resources for mutual benefit. The sharing of information will not confine to the national level but also include international sources. The communication of information will be through E-mail as well as postal/courier service. We invite industrial organisations, institutes, industries 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 Shri S.K. Saxena, Director General, Directorate General Factory Advice Service & Labour Institute, 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.

**GOVERNMENT OF INDIA, MINISTRY OF LABOUR
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, Govt. of India. DGFASLI organisation was set up in 1945 under the Ministry of Labour, Govt. 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 work place. 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, Mumbai
- * Regional Labour Institutes at Madras, Kanpur, Calcutta and Faridabad

The Central Labour Institute at 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 past 25 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 regions. It also functions as a National Centre for C.C.S. (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 on Safety and Health. The Regional Labour Institutes are a scaled-down version of Central Labour Institute and cater to the needs of their respective regions.

The organisation 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 tasks of protecting safety and health of employees is an uphill task. Armed with the technology, good-will of the industrial society and the strength of the dedicated staff, the organisation is well prepared to meet the challenges of tomorrow. It is committed to the goal of making the workplace safer.

Visit us at : <http://www.dgfasli.nic.in>