

Occupational Health and Safety in Construction Industry (Continued)

Health and safety management and the law

All work activities are covered by health and safety law. The law which is most relevant to construction health and safety is set out here.

Factories Act 1948 and Factories Rules

This Act applies to all work activities. It requires employers to ensure, so far as reasonably practicable, the health and safety of their employees, other people at work and members of public who may be affected by their work. Some other legal requirements are set out in the following Acts and Rules:

- Building & other construction Workers (Regulation of Employment and Conditions of Service) Act, 1996 (BOCWA)
- Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Central Rules, 1998 (BOCWR)
- Petroleum Act, 1934 (PA)
- Petroleum Rules, 2002 (PR)
- Explosives Act, 1884 (EA)
- Explosives Rules, 1983 (ER)
- Gas Cylinder Rules, 1981 (GCR)
- Static & Mobile Pressure Vessels (Unfired) Rules, 1981 (SMPVR)
- Electricity Act, 2003 (EA)
- Indian Electricity Rules, 1956 (ER)
- Motor Vehicles Act, 1988 (MVA)
- Central Motor Vehicles Rules, 1989 (CMVR)

In 1996 the Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act,1996 was promulgated.

The Central Rules under this Act were notified in November 1998.

The Central Government has notified its Chief Labour Commissioner as the Central enforcement agency under the above act.

Till this date 16 states has notified their enforcement agencies.

The DGFASLI (Directorate General Factory Advise Services and Labour Institute) organization has been providing technical support over the years in drafting of Central Rules/ Model Rules, carrying out studies, surveys, safety audits and conducting training programmes, workshops and seminars in this sectors for the past over three decades.

The National Safety Council (national and unit levels), has been conducting training programmes, safety audits, information dissemination ,producing awareness material and organizing campaigns for the construction industries for over a decade.

Having said the above, one needs to recognize the fact that laws related to the safety and health in construction industry in our country are not adequate and need to be more comprehensive and strengthened. Accordingly, whenever the construction industry needs guidance it turns to the laws framed by other countries such as the United Kingdom. Few laws framed by the U.K. Government in respect of safety and health in construction industry are described below.

The Health and Safety at Work etc Act 1974 (U.K. Government)

This Act applies to all work activities. It requires employers to ensure, so far as reasonably practicable, the health and safety of their employees, other people at work and members of the public who may be affected by their work.

Employers should have a health and safety policy. If they employ five or more people, the policy should be in writing. Use the advice in this book to draw up a policy. Keep the policy clear and simple. Make sure everybody in the firm knows about and understands the health and safety systems which have been developed and that these systems directly relate to the operations of the company. The safety policy should cover three distinct aspects:

- a general statement of the company's health and safety policy. This announces the company's intent to have high standards of health and safety, what it intends to achieve and how it intends to achieve it;
- the organization for carrying out the policy, including reference to the management systems and safety representatives. It should include who is responsible for what and when and how they will achieve it; and
- the specific arrangements that the company operates for managing health and safety during its normal work activities.

The self-employed should ensure, so far as reasonably practicable, their own health and safety and make sure that their work does not put other workers or members of the public at risk.

Employees have to co-operate with their employer on health and safety matters and not do anything that puts themselves or others at risk. Employees should be trained and clearly instructed in their duties.

The Management of Health and Safety at Work Regulations 1999 (U.K. Government)

The Management of Health and Safety at Work Regulations 1999 (MHSWR) apply to everyone at work, regardless of what that work is. They require employers to plan, control, organise, monitor and review their work.

To do this they should:

- assess the risks associated with work to identify the control measures necessary to reduce these risks;
- have access to competent health and safety advice;
- provide health and safety information and training to employees;
- have arrangements to deal with serious and imminent danger; and
- co-operate in health and safety matters with others who share the workplace.

Risk assessment

Employers and the self-employed must identify the hazards involved with their work, assess the likelihood of any harm arising and decide on adequate precautions. This process is called risk assessment and is central to all planning for health and safety.

Risk assessment can be carried out in the five stages listed below. It is recommended that employers and the self-employed carry out their own risk assessments as they know their own industry, their own company and the risks that their employees face. What is important is that those carrying out risk assessments understand the requirements of the Regulations and possess the knowledge and judgement to ensure the most suitable precautionary measures are put into practice.

The risk assessment can either be carried out on a single specific task, or on the job as a whole, providing it is not too big. The assessment may highlight the need for specific assessments (such as manual handling, COSHH or noise) to be undertaken.

How is a risk assessment carried out?

Step 1: Look for the hazards

Consider the job, how it will be done, where will it be done and what equipment, materials and chemicals will be used.

What are the hazards that could cause harm? Here are some examples that are regular causes of serious and fatal accidents or ill health:

- falling from an open edge or through a fragile surface;
- being struck by site vehicles;
- collapse of an excavation or part of a structure;
- use of a vibrating hand tool;

- work with materials (e.g. lead, asbestos or solvents) that could be a health problem;
- dust from cutting, grinding or drilling.

The most common construction hazards have been identified in our earlier issues.

Step 2: Decide who might be harmed and how

Think about employees, the self-employed, employees of other companies working on the job, site visitors and members of the public who may be in the area or outside the site.

Safe working often depends on co-operation between firms. Consider how they need to be taken into account in the assessment. Identify problems the work may cause for others at the site, or problems they may cause for those doing the work and agree necessary precautions. Tell the principal contractor or whoever is controlling the site what has been agreed.

Step 3: Evaluate the risks and decide on action

Where there is a risk that someone could be harmed consider:

- **First:** Can the hazard be removed completely? Could the job be done in another way or by using a different, less hazardous, material? If it can, change the job or process to eliminate the risk.
- **Second:** If the risk cannot be eliminated, can it be controlled? For example, while it may be necessary to apply a solvent-based material, the exposure of workers to hazardous vapours may be reduced by applying it by brush or roller rather than by spraying. If the precautions described have not been taken, is there an equivalent or better standard of protection? If not, more needs to be done.
- **Third:** Can measures be taken which will protect the whole workforce? For example, to prevent falls, guard rails at edges provide safety for everyone in the area.
- **Fourth:** Can the number of people at risk be reduced? For example, by reducing the size of the site workforce while cranes are in use for erecting structural frames etc. or by undertaking higher-risk tasks outside normal site working hours when only essential personnel will be present.

Step 4: Record the findings

Employers with five or more employees should record the significant findings of their assessment as an aid to controlling hazards and risks. No specific form is required providing that the information is recoverable.

Employers should pass on information about significant risks and the steps they have taken to control the risks, even when they employ less than five people.

Step 5: Review the findings

Reviews are important. They take account of unusual conditions on some sites and changes in the way the job is done. Reviews allow lessons learned from experience to be taken into account. A new assessment is not always needed for every job, but if

there are major changes, a new assessment will be needed. In other cases only the principal contractor will be in a position to do a full assessment. For example, it may be the potential interaction of two or more contractors that leads to increased risk; in such cases the principal contractor should take the lead.

Method statements

Method statements are not required by law, but they have proved to be an effective and practical management tool. They can take account of risks identified by the risk assessment and communicate the safe system of work to those undertaking it, especially for higher-risk complex or unusual work (e.g. steel and formwork erection, demolition or the use of hazardous substances). A method statement draws together the information compiled about the various hazards and the ways in which they are to be controlled for any particular job from the conclusions of the risk assessments.

A method statement also takes account of the company's health and safety organization and training procedures and may include arrangements to deal with serious or imminent danger.

The method statement describes in a logical sequence exactly how a job is to be carried out in a safe manner and without risks to health, and includes all the control measures. This will allow the job to be properly planned and resourced with the appropriate health and safety resources needed for it. It can also provide information for other contractors working at the site about any effects the work will have on them and help the principal contractor to develop an overall health and safety plan for the construction phase of a project.

If a similar operation is repeated, the statement will be similar from job to job. However, if circumstances change markedly, e.g. with demolition, the statement will need to be revised for each job.

The method statement is an effective way of providing information to employees about how they expect the work to be carried out and the precautions that should be taken. The most effective health and safety method statements often have a number of diagrams to make it clear how work should be carried out. Checking that the working methods set out in the statement are actually put into practice on site can also be a useful monitoring tool.

When reviewing the risk assessments, use the information from monitoring previous jobs and accident records and investigations. It will help to decide if adequate precautions are being applied.

Health and safety training and advice

Employers are responsible for ensuring health and safety and must ensure that they have a competent source of advice. The person providing this advice may need extra training in health and safety to meet this responsibility properly. Sometimes it may be necessary to use external advisors.

As with all training, whether for managers or site workers, there is a need to identify:

- what they know already;
- what they need to know and what skills they need;

- how best to provide the extra knowledge and skills they need.

Employers can then decide whether to provide the training in-house, use an external training course or a consultant.

If there isn't adequate expertise in the company, further advice may be obtained from:

- the National Safety Council ;
- employers' and trade organizations;
- training and enterprise councils and local enterprise companies;
- local health and safety groups;
- insurance companies;
- suppliers – they must provide instructions on using machines, tools, chemicals etc and product safety data sheets. Also, containers often have helpful labels;
- safety magazines – they have useful articles and advertise safety products and services; ;

Workers must be trained in safe working practices. Employees cannot be relied upon to pick up safety training on the job from their workmates – they might simply be learning someone else's bad habits. Employers need to be sure of their employees' abilities before setting them to work and need to provide necessary training where it is required.

Foremen and supervisors play an important role in ensuring work is done correctly. They control the way in which work is carried out on site. This means they can and should ensure that work is safe. They also have an important role in passing on training and information to workers on site, such as with toolbox talks. However, they cannot do this properly unless they are trained in safe and healthy working practices.

As workers come to India from other countries such as Bangladesh, Nepal and other neighboring countries the possible lack of understanding of the Hindi and other local languages presents significant communication problems. Effective steps must be taken so that workers who cannot speak local language can work safely and without risks to their own health and safety or the health and safety of others who may be affected. Employers have a duty to provide employees with information and instructions that are comprehensive and relevant, and in a language they understand. This may mean engaging a bilingual supervisor who can give instructions, training and supervision in the appropriate language.

The Construction (Design and Management) Regulations 1994 (U.K. Government)

The Construction (Design and Management) Regulations 1994 (CDM) require that health and safety is taken into account and managed throughout all stages of a project, from conception, design and planning through to site work and subsequent maintenance and repair of the structure.

Who does CDM affect?

CDM affects everyone who takes part in the construction process: the client, the designers and contractors. Where they apply, the Regulations require two additional roles to be fulfilled: the planning supervisor and the principal contractor. The Regulations also require the health and safety plan and the health and safety file to be produced.

What does CDM require?

CDM requires that everyone who can contribute to improving site health and safety plays their part. What each duty holder can do will vary from project to project. The efforts everyone makes should be proportional to the health and safety risks associated with the work and the difficulty of managing those risks. This means that if the project is complex and the risks are high, more effort is needed than if the project is relatively small or has lower risks.

When does CDM apply?

The Regulations apply to most common building, civil engineering and engineering construction work. They do not apply to construction work where the local authority is the enforcing authority for health and safety purposes. This means that where work is not notifiable **and** is either:

- carried out inside offices, shops and similar premises where the construction work is done without interrupting the normal activities in the premises and without separating the construction activities from the other activities; or
- the maintenance or removal of insulation on pipes, boilers or other parts of heating or water systems; then it is not subject to the CDM Regulations.

Apart from this exception, the CDM Regulations apply to all design work carried out for construction purposes (including demolition and dismantling). If any site work requires design work, even for temporary works, the Regulations will apply to the design aspect even if the Regulations do not require the appointment of a planning supervisor or a principal contractor.

The CDM Regulations apply to **all demolition and dismantling work**, regardless of the length of time the work will take or the number of people undertaking it.

The Regulations also apply to other construction work unless:

- the work will last 30 days or less and involve less than five people on site at any one time; or
- the work is being done for a domestic client (that is someone who lives or will live in the premises where the work is being done). In this case only the duties to notify HSE and those placed on designers apply. However, in some instances domestic clients may enter into an arrangement with a developer who carries on a trade, business or other activity. For example, a developer may sell domestic premises before the project is complete. The domestic client then owns the incomplete property, but the developer still arranges for the construction work to be carried out. In this case the CDM requirements apply to the developer.

What is the health and safety plan?

The health and safety plan develops with the project and has at least two distinct phases (the first is associated with design and planning of the project before tendering or contractor selection, the second is associated with the construction phase). The planning supervisor is responsible for seeing that the plan is started. The purpose of the plan is to ensure information relevant to health and safety is passed on to those who need it.

The **pre-construction-stage** health and safety plan may include:

- a general description of the work and details of project timescales;
- details of health and safety risks as far as they are known, including information that clients are required to provide about site-specific risks (eg asbestos or contaminated land etc.), and designers about particular project risks they were unable to eliminate and the assumptions in broad terms they have made about precautions that will be taken;
- information required by possible principal contractors to allow them to identify the health and safety competences and resources they will need for the project;
- information on which to base a construction-phase health and safety plan.

The pre-construction-stage health and safety plan needs to be available to possible principal contractors at the start of selection or tendering procedures. It informs them of the health, safety and welfare matters they need to take into account when planning for site work. Often the necessary information will already be contained within existing documents (e.g. preliminary documents and design drawings). In these cases the plan can simply be an index to where the necessary information can be found within the other documents. Where this is not the case, a separate plan will be required containing the additional material.

The plan only needs to contain information that is specific to the project and is necessary to assist the development of safe systems of work. The plan does not need to repeat information that a competent contractor would already know. Including unnecessary or irrelevant material can make essential information more difficult to identify and reduce the effectiveness of the plan as a way of passing on information.

For the **construction phase**, the principal contractor develops the health and safety plan so that it addresses issues that are relevant to health, safety and welfare matters key to the project. Issues which need to be considered for inclusion in the plan include:

- how health and safety will be managed during the construction phase, including details of how information and instructions will be passed to contractors and how their activities will be co-ordinated;
- contractors' risk assessments and health and safety method statements for high-risk activities;
- information about welfare arrangements sufficient to allow contractors on the project to understand how they can comply with welfare requirements;

- common arrangements (eg on welfare, site hoardings and emergency procedures);
- how contractors, material suppliers and plant and equipment supplied for common use will be selected;
- how the views of workers and their representatives on health and safety issues associated with the project will be co-ordinated;
- information on necessary levels of health and safety training for those working on the project and arrangements for project-specific awareness training and refresher training such as toolbox talks;
- arrangements for monitoring compliance with health and safety law;
- site health and safety rules and relevant health and safety standards where appropriate, particularly where standards above the minimum statutory requirement are requested by the client;
- procedures for delivering information for the health and safety file.

The extent to which particular items need to be addressed within the plan will depend on the degree of risk associated with the project and how much coverage has been given to issues in other documents (eg contract preliminaries and contractor health and safety policies). Where the risk is low and issues are covered in the principal contractor's health and safety policy, a simple reference to the safety policy arrangements may be sufficient.

The plan should be developed as far as possible before construction work starts, and then reviewed as necessary to account for changing project circumstances. On many larger projects design may not be complete. In these cases the construction-phase plan will need to address:

- the general management arrangements (eg who will be responsible for management, how many supervisors will be needed at different stages, how information will be passed to contractors, how method statements will be agreed etc);
- welfare arrangements and how they will be provided and maintained;
- procedures for site security;
- details of work early in the project for which information is available, explaining how it will be managed and controlled; and
- how new design information will be handled and incorporated into the plan.

What is the health and safety file?

This is a record of information for the client or end user. The planning supervisor ensures it is produced at the end of the project and is then passed to the client. It gives details of health and safety risks that will have to be managed during maintenance, repair, renovation or demolition. Contractors should pass information on these matters that becomes available during the construction phase to the planning supervisor for inclusion within the file. The client should make the file

available to those who will work on any future design, construction, maintenance or demolition of the structure.

Details of how information for the file should be presented is best agreed with the client at an early stage. This will ensure that the information for the file can be gathered in a consistent manner and the file assembled and presented to the client in a way which will make it easy for the client to use. Files may also be electronically produced and stored; a paper copy is not required by law.

To be continued in next issue.

Readers may please note that D. L. Shah Trust brings out two e-journals on a fortnightly basis. These are mailed to those persons or institutions who are desirous of receiving them: These two e-journals are:

- 1. Safety Info**
- 2. Quality Info**

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