Extract from an SGL Training Programme

Q - Why invest in Loss Prevention?

A – You could be out of business if you don't

Or, to take Henry Kissinger's warning:–

"If you fail to prepare, prepare to fail."

According to a recent study carried out by a British disaster recovery specialist only **8%** of businesses with no Contingency Planning are able to survive a disaster – **40%** never re-open, and a further **40%** fail within 18 months. The remaining **12%** enjoy a lingering death surviving longer than 18 months but finally terminating within 5 years.

However, the process industries, at least in the UK, can take some comfort in a safety record, which compares very favourably with many other industrial sectors. SHE (Safety, Health & Environment) performance is flavour-of-the-month both for manufacturers and the regulators. But risks can never be totally eliminated, accidents will happen and even the best managed company can find itself on the wrong end of an emergency.

There are three potential basic causes of emergencies:-

- Human error – most prevalent and accounting for **> 50%** business disasters
- Natural Perils – i.e. hurricanes, earthquakes etc which account for about **one sixth** of these natural disasters
- Deliberate actions of sabotage, terrorism, industrial action etc which are difficult, if not impractical, to prevent and expensive to repair can be attributed to the remaining **one third** of emergencies

Human error can be reduced by training and natural disasters should at least be partially predictable – nobody would build a nuclear power plant on a known seismic fault (but many have built oil refineries and petrochemical plants!). Deliberate acts of sabotage, terrorism, industrial action, environmental extremists (for example recent genetically modified crop trial damage in the UK) etc can be prevented or minimised with adequate security and access control systems but planning for prevention is not enough – survival requires planning to deal with an incident and its aftermath.

20-20 Vision (or 20-Lessons and 20 Questions)

The benchmark of 'current best practice' in Contingency Planning and disaster recovery is continually evolving. The following list of *20 key lessons* has been proposed following incidents such as the IRA Bishopsgate bomb in London, which affected the City's financial services sector, and many of these lessons could be equally applicable to the process industries:-

1. A bad plan is worse than no plan at all
2. Weekend 'disasters' are easier to survive
3. Supplier goodwill is not enough
4. Reciprocal agreements don't work
5. Off-site storage must be comprehensive
6. Emergency Control Centres must be chosen carefully
7. Third party involvement is critical to Contingency Plan success
8. IT recovery plans are insufficient in isolation
9. Dealing facilities are more exposed than IT
10. Stress impairs performance
11. Entire plan requires testing
12. Multi-site organisations recover faster
13. Prevention is better than cure
14. Denial of access is the key threat
15. Communication is critical
16. Unattended operations require specific support
17. Don't allow the Contingency Plan to be highjacked
18. Insurance alone does not cover losses
19. Business continuity budgets are inadequate
20. Business as usual is a myth

Ultimate responsibility for the management of an emergency will rest with the company Chief Executive. CEOs and other executives should consider the following *20 questions* and be able to answer 'yes' to them all:-

1. Do you have a Contingency Plan?
2. Do you have a copy? In the office? At home?
3. Are you personally confident that it is viable?
4. Have you appointed independent consultants to audit your plan?
5. Have you appointed a contingency planning manager?
6. Do you have an emergency management team? Do you know the members?
7. Have you set a corporate budget for contingency planning and disaster recovery?
8. Do you know when the plan was last tested?
9. Was it tested under simulated disaster conditions?
10. Were you personally involved in the test?
11. Have you been formally briefed on your role in a 'disaster scenario'?
12. Have you been trained to handle the press in the event of an emergency?
13. Have you been trained to handle emergencies such as a hostage situation?

14. Have you taken steps to develop a 'contingency culture' in your organisation?
15. Have you reviewed the link between insurance and contingency planning?
16. Have you personally prioritised the criticality of each area of your business?
17. Do you comply with all regulatory requirements vis-à-vis business continuity?
18. Do you know what information and materials are duplicated off-site?
19. Has the board formally assessed continuity provision within the last six months?
20. Have you visited your Emergency Control Centre?

Recent Legislation Relating to Emergency Management

Control of Major Accident Hazard Regulations (COMAH)

These regulations came into force in the UK on 1st April 1999 (and also throughout the EEC) and replace the **C**ontrol of **I**ndustrial **M**ajor **A**ccident **H**azard regulations 1984 (CIMAH) and are a requirement of the Seveso II Directive, which gives greater consistency across the European Community.

The regulations cover on-shore establishments with threshold quantities of named substances or generic categories of substances. Exemptions include military establishments, hazards from ionising radiation, transport outside COMAH establishments, pipelines extractive industries and waste landfill sites.

The regulations main aim is to prevent and mitigate the effects of those major accidents involving dangerous substances, such as Chlorine, liquefied petroleum gas, explosives and Arsenic Pentoxide, which can cause serious damage/harm to people and/or the environment. The COMAH Regulations treat risks to the environment as seriously as those to people.

Who enforces COMAH?

The COMAH Regulations will be enforced by a Competent Authority (CA) consisting of:

In England and Wales:-
the *Health and Safety Executive* and the *Environment Agency*
In Scotland:-
the *Health and Safety Executive* and the *Scottish Environment Protection Agency*.

The CA will operate to a Memorandum of Understanding, which sets out the arrangements for joint working.

The regulations place duties on the CA to inspect activities subject to COMAH and prohibit the operation of an establishment if there is evidence that measures taken for prevention and mitigation of major accidents are seriously deficient. It also has to examine safety reports and inform operators about the conclusions of its examinations within a reasonable time period.

Charging

Charging will be introduced for work undertaken by the competent authority on COMAH. Charges will be made on an actuals basis i.e. the recovery of the full costs of the time spent by the CA in carrying out COMAH-related activities for a particular establishment.

An industry liaison forum will be set up to discuss the operation of the financial and administrative arrangements of the charging regime.

Who is affected?

Mainly the chemical industry, but also some storage activities, explosives and nuclear sites and other industries, where threshold quantities of dangerous substances identified in the regulations are kept or used.

The substances, which cause the duties to apply are detailed in Schedule 1 of the regulations as are the quantities, which set the two thresholds for application.

Operators of sites that hold large quantities of dangerous substances (designated *'top tier'* sites) are subject to more onerous requirements than those of *'lower tier'* sites.

What do you need to do?

Firstly you need to determine if the regulations apply to you. Regulation 3, together with Schedule 1, will provide the answer for you. If you have enough dangerous substances present to take you over the lower threshold then the lower-tier duties apply and if you have enough to exceed the higher threshold then the top-tier duties apply. If you have threshold quantities of dangerous substances on site on the day the regulations came into force, 1st April 1999, then you are an *'existing establishment'*.

The key duties for operators of lower-tier sites are:-

Notify basic details to the CA

Operators of all establishments subject to the regulations must notify certain basic details to the CA. The key points, which have to be included in the notification, are given below but full details are given in Schedule 3 to the regulations.

- name and address of operator
- address of establishment
- name or position of person in charge
- details of dangerous substances on site

- site activities
- environmental details

When?

Operators who come into scope of the regulations after 1 April 1999 must submit a notification before operation begins (operation begins when the quantity of dangerous substance exceeds one of the thresholds and includes commissioning).

Operators of existing establishments who had previously submitted CIMAH safety reports do not need to notify as that report contains all the necessary information.

All other operators of existing establishments will need to submit a notification by 3 February 2000.

Take all measures necessary to prevent major accidents and limit their consequences to people and the environment

This is the general duty on all operators, which underpins the regulations. It is a high standard, which applies to all establishments within scope. By requiring measures both for prevention and mitigation there is a recognition that all risks cannot be completely eliminated. This in turn implies that proportionality must remain a key element in the enforcement policy of the HSE and the Agencies. Thus, the phrase "all measures necessary" will be interpreted to include this principle and a judgement will be made about the measures in place. Where hazards are high then high standards will be required to ensure risks are acceptably low, in line with the HSE's and Agencies' policy that enforcement should be proportionate.

Prevention should be based on the principle of reducing risk to a level as low as is reasonably practicable (ALARP) for human risks and using the best available technology not entailing excessive cost (BATNEEC) for environmental risks. The ideal should always be, wherever possible, to avoid a hazard altogether.

Prepare a major accident prevention policy

Regulation 5 requires lower-tier operators to prepare a document setting out their policy for preventing major accidents (a Major Accident Prevention Policy or MAPP).

The MAPP will usually be a short and simple document setting down what is to be achieved but it should also include a summary and further references to the safety management system that will be used to put the policy into action. The detail will be contained in other documentation relating to the establishment e.g. plant operating procedures, training records, job descriptions, audit reports, to which the MAPP can refer.

The MAPP also has to address issues relating to the safety management system. The details are given in Schedule 2 of the regulations but the key areas are:-

- organisation and personnel
- identification and evaluation of major hazards
- operational control
- planning for emergencies
- monitoring, audit and review.

When?

Operators who come into scope of the regulations after 1 April 1999 must prepare their MAPP before operation begins. Operators of existing establishments should prepare one as soon as possible after 1st April 1999.

Top-tier operators

Top-tier operators have to comply with the above except that they do not have to prepare a separate major accident prevention policy document - their safety reports (see below) have to include the information that lower-tier operators provide in their MAPPs. They also have the following additional duties:-

Prepare a safety report

A safety report is a document prepared by the site operator and provides information to demonstrate to the CA that all measures necessary for the prevention and mitigation of major accidents have been taken. The purposes and contents of a safety report are set out in Schedule 4 to the regulations.

The safety report must include:-

- a policy on how to prevent and mitigate major accidents;
- a management system for implementing that policy;
- an effective method for identifying any major accidents that might occur;
- measures (such as safe plant and safe operating procedures) to prevent and mitigate major accidents;
- information on the safety precautions built into the plant and equipment when it was designed and constructed;
- details of measures (such as fire-fighting, relief systems and filters) to limit the consequences of any major accident that might occur; and
- information about the emergency plan for the site, which is also used by the local authority in drawing up an off-site emergency plan.

Safety reports will be available to the public via the competent authority registers, subject to safeguards for national security, commercial and personal confidentiality.

When?

The dates for submission of safety reports are set out in regulation 7 but are given here for information:-

Operators of completely new establishments (so called green field sites) have to provide some information before construction commences and complete the safety report before operation begins.

Operators whose establishments become COMAH top-tier after 1 April 1999 must submit their safety report before operation at top-tier begins.

COMAH top-tier operators who had not previously submitted a CIMAH safety report must submit a COMAH safety report by 3 February 2002.

Top-tier operators who had previously submitted a CIMAH safety report must submit their first COMAH safety report on the date their CIMAH safety report update would have been due had CIMAH still been in force, or by 3 February 2001 if that is earlier. However, those operators whose CIMAH safety report update would have been due between 1 April 1999 and 3 February 2000 have until the 3 February 2000 to submit their COMAH report.

Update the safety report every five years or after significant changes or new knowledge about safety matters

The safety report needs to be kept up to date. If there are any modifications to the plant or the way it is operated or if new facts or information become available, the safety report must be reviewed and, if necessary, revised at the time. It must be reviewed after five years even if there have not been any changes.

Prepare and test an on-site emergency plan

Top-tier operators must prepare an emergency plan to deal with the on-site consequences of a major accident. The details are given in Schedule 5 and further guidance will be available (see introduction)

When?

The dates for completion of on-site emergency plans are given in regulation 9 and are as follows:-

Establishments that were CIMAH top-tier and became COMAH top-tier on 1 April 1999, by 3 February 2001
Other existing establishments; by 3 February 2002
Other establishments; before operation begins.

Supply information to local authorities for off-site emergency planning purposes

Local authorities play a key role by preparing, reviewing, revising and testing off-site emergency plans for dealing with the off-site consequences of major accidents at top-tier sites. In order to fulfil this role they need information from operators. Details can be found in Schedule 5 to the regulations and guidance will be available (see introduction). Operators will need to hold discussions with their local authorities to determine their exact needs.

When?

The information for the local authority must be supplied no later than the date the on-site emergency plan for the site has to be completed.

Provide certain information to the public about their activities

People who could be affected by an accident at a COMAH establishment must be given information without having to request it. The details are given in Schedule 6 of the regulations but include details of the dangerous substances, the possible major accidents and their consequences and what to do in the event of an accident.
As previously mentioned, safety reports will be available to the public via public registers.

When?

The information for people who could be affected by a major accident at the establishment must be supplied 'within a reasonable period of time after the off-site emergency plan has been prepared for the establishment'. Six months would be the normal time.

Safety reports will be put on the public register shortly after receipt by the CA unless there is a request for certain information to be withheld (for national security, commercial and personal confidentiality reasons) as provided for in the regulations.

The COMAH regulations are generally to be welcomed as a positive step towards the prevention of major emergency incidents. Therefore, organisations need to test their Major Emergency Plans and ensure their staff are fully competent – one proactive way of doing this is through major emergency management training which can include major emergency management simulators to allow a company's procedures and systems to be tried and tested in a simulated emergency situation. Systems such as these were originally designed for the oil and gas industry but are now being used by companies from other sectors including chemicals, manufacturing, aviation and

engineering. Most scenarios can be simulated to expose the trainees to the real-life stresses and pressures involved, with reduced lighting, increased humidity and temperature, sound effects including fire alarms, pumps starting, high winds etc Communications can also be used to simulate radio, telephone and the emergency services.

Realistic training for emergencies is crucial to ensure preparedness and prompt response as precious seconds may be lost by poor communication or an ineffective action plan.

Recommendations for Setting Up a Contingency Plan

A *Contingency Plan* should be developed to prepare for the effects of various *Loss Incidents* which may be caused by a number of factors which may include such potential risks as:-

- Fire
- Explosion
- Natural Perils
    - Earthquake
    - Flood from land or sea
    - Windstorm
- Machinery Breakdown
- Collision by overflight or accident
- Transport Disruption
- Terrorism and Sabotage

A *Contingency Plan* using loss scenarios should consider the effects that significant incidents of the above type may have on the location and review the action which can be taken to avoid them occurring, or alternatively, reduce the effect on production loss for the business.

The Contingency Study

It is a good idea to set up a Contingency Study Team comprising specialists from a number of departments within the organisation or location. Ideally the team size should be small and should include members from the following departments:-

- Management
- Operations
- Maintenance
- Engineering
- Stores Control
- Administration/IT
- SHE (Safety, Health & Environment)

It is usual to appoint a chairman who is independent of the location, either from another company location or an independent specialist. This will prove to be of considerable assistance in the studies, as the appointee can bring an 'independent approach' to the study and will also enable the team to be efficiently directed through the study.

The team size should be kept manageable and should have clearly defined ***'Terms of Reference'*** which are established before the team starts work on the study. Again a clearly defined, but reasonable deadline to complete the Review should be established, before the team starts, by the company's senior management and it should be an objective of the whole team that this target be achieved. Full assistance should be given to all team members to ensure that they are burdened as little as possible during the study period with normal work tasks.

The team should first consider possible losses, which could impact the business at the location, and then develop the possible scenario which could result from the loss. There should be no limit to the range of discussions on these loss scenarios. These sessions should be seen as '*brain storming*' sessions. It should be the chairman's function to direct the team to ensure that discussion centres around likely scenarios, even though initially all possible scenarios including highly unlikely ones, have been discussed.

Having established a credible range of loss scenarios these should then be listed and ranked in order of likelihood of occurrence. The team should then review each one and decide the extent of the loss and how best the effect of the loss can be reduced, or counteracted. This may be achieved in a wide variety of ways, for example from:-

- Purchase of a new production facility
- Production rescheduling within location
- Use of bought in components
- Transfer of production to other company locations
- Purchase of strategic spares
- Use of strategic spares held under joint
- Partner agreement
- Use of specialist contractors
- Advancing planned outage periods
- Overtime working
- Holding large buffer stock levels
- Ceasing production of part or whole
- Ceasing production at the location altogether

There are a number of techniques available to assist at this stage, for example:-

- Consequence Analysis.
- Hazard Analysis.
- Cost Benefit Analysis
- Fault Tree Analysis.
- Risk Profile Analysis

Contingency Study Report

On completion of the Contingency Study and an evaluation of the results, a '*Contingency Study Report'* should be prepared and presented to location management. It is suggested that the main section of the report be based on a Matrix type spreadsheet.

The Contingency Study Report when approved and authorised by location management can either form the Contingency Procedure Document or be used in its development by management. Against each credible loss scenario the report should recommend the action, which the Contingency Study Team considers appropriate. Each recommendation should indicate the priority for implementation, which the team considers relevant as well as the financial impacts that they will have on the company, and the savings, which will accrue from initiating the action.

Having received the Contingency Planning Report, it will be up to location management to decide whether the report is approved and whether all or part of the reports recommendations are applied at the location.

Recommendations for Setting Up an Emergency Plan

Introduction

An '***Emergency Plan'*** should be established for all company locations where significant numbers of people are employed and should possess sufficient scope and practicality to deal with all foreseeable hazards, industrial accidents and natural disasters. It should generally cover at least the following:-

1. Designation of control personnel
2. Evacuation of people to designated points of safety
3. Systematic shut-down of operations
4. Designation of a safe control area
5. A search-and-rescue plan, followed by all-clear and re-entry procedures
6. Control of Hazardous materials
7. Removal and protection of vital equipment and materials
8. Listing of emergency services and local authority organisations, with

names of responsible individuals and means of contact

In the event of an incident the *Emergency Plan* should form the central document to which all personnel refer and should therefore clearly define all relevant actions and communication facilities in place.

Incidents included in the Emergency Plan should cover such matters as:-

- Fire

- Natural Peril
- Hazardous Material Release
- Security Alert

The procedure, in some cases in brief format, should be readily available to all employees, contractors and casual visitors to the location who would be required to evacuate their working areas should an incident occur. It should clearly indicate the actions and responsibilities of all employees, contractors representatives and other specialists either on duty at the location or available on call. This should particularly include responsibilities and actions for those employees who are required to remain at their working areas.

Training in the procedure should be a regular event for all members of staff or regular visitors.

Emergency Plan Procedure

The Emergency Plan Procedure should be prepared and authorised in writing by executive management at the location. All Departments or sections at the location should be involved in preparing the document and should review and approve the plan before it is issued. The Plan should take into account the variety of processes and materials involved in the location business.

Full copies of the authorised Emergency Plan should be readily available to all staff throughout the location. It may be relevant however to prepare short notices giving highlight information, which can be posted throughout the site so that non- essential personnel can rapidly see and follow the actions that they are required to take in the event of an emergency.

The Emergency Plan should be reviewed and updated by management regularly, usually at Annual intervals, and any additions or changes to the procedure included. The Plan should then be re-authorised and re-issued under the authority of the Location Senior Manager.

Responsibilities

Incidents can occur at any time of the day or night. It is preferred that the location appoint a person to be responsible for '*directing*' incident action, upon notification of a significant incident occurring and that he be designated the ***'Incident Controller'***. He (or she) should preferably be a company employee being either an engineer or supervisor working at the location on a full time basis, such as a Shift Supervisor or Shift Fire Chief. He should be available for radio or at least telephonic communications at all times during his shift.

It is important that the *Incident Controller* wears some sort of distinctive clothing during the incident, such as a hat or a jacket to indicate clearly, particularly to outside persons such as local fire services, the person to whom they report or maintain contact.

It may be useful to transfer this responsibility to a more senior person at a later stage. It is generally better to leave the incident management with the person who initially commences as *Incident Controller* and who will then continue in control of all aspects of the particular incident, whilst others offer support.

The procedure should include for 'hand-over' to relief staff in the event that the particular incident takes a protracted time to bring under control.

New starters should be inducted in the function of the Emergency Plan at their start meeting. Existing staff should be required to review the contents of the plan, through training sessions or simulation tests annually.

It is important when developing the Plan to remember others who may be at the location, such as contractors, suppliers representatives and other visitors. The procedure should include the actions these people should take in the event of an incident and the persons responsible for ensuring that they are accounted for.

Training of contractors staff in the actions to be taken in the event of an incident should be included in any contract documentation for work at the location. Contractors staff due to work at the location should spend time before they start their project being inducted into the Emergency Plan requirements. A senior member of the individual contractors staff should be made responsible person for the communications and training for the personnel under the particular contractor's control.

The Emergency Plan Procedure

The Emergency Plan procedure should cover all actions to be taken from initiation of an incident event, until the incident itself has been '*closed'* and the situation returned to normal.

Any changes in telephone numbers and addresses of support services should be added to the *Plan*, as soon as they are received, by a person made directly responsible for keeping the Plan updated.

When an incident occurs an '*alarm*' system will be necessary either through audible or visual means or a combination of both. A great deal of thought will be required in the development of the *Plan* to establish the correct alarm system to match the location's layout. The alarm should be independent of any other system and distinctive enough for people to realise that an incident is occurring and that they must take action.

Alarm calls should be directed to a central point manned full time with at least two people. This central point should be designated the '***Emergency Control Centre***'. It is vital that all personnel manning this centre are fully aware of, and regularly trained in, the Emergency Procedure. The procedure itself should be readily available to them at the control desk for reference to ensure that they have ready access to information including contact communication numbers, plot plans, pipeline and electrical isolation drawings etc. One of the persons in the Emergency Control

Room should ensure that plant and equipment remains operating safely or is safely shut down. He should be designated the '*Incident Operations Person'*. The other person designated the '*Incident Control Person'* should initiate the emergency procedure and actions resulting. Both these people should be supported during the extent of the incident by trained personnel who will act as '*Runners*'. The runners should be relieved during the period of the incident from their normal duties.

All messages into the control centre must be logged. Calmness must be established and encouraged in communication procedures, throughout the location, at all times. Irrelevant and incoming calls, even if from senior management, which could impede the control of the incident, should be disconnected immediately.

Communications systems can easily become overloaded with unnecessary '*What's happening?*' type inquiries. The Plan should seek to discourage this type of call.

All personnel at the location must be capable of being notified and trained to take the action indicated in the Emergency Procedure document. It is also important that all other attendance at the location, other than approved or support services, are denied access to the location but the security services.

The procedure should clearly indicate how on discovering an incident the alarm is initiated and to whom the alarm report should be made.

Communications

The crucial aspect during an incident will be effective communications and clearly defined responsibilities for all staff members included in the Emergency Plan Procedure. The logging of all communications and actions is important during the incident to confirm that actions have been taken and at a later stage when the incident is being reviewed. So many things take place during an incident that people involved can easily be distracted and forget to carry out certain actions.

Telephones or radios are preferred for communications during an incident either through dedicated telephone lines or radio bands. The '*In emergency dial XXX system*' for telephones located at strategic points around the location, can be very effective, with this number posted in a prominent place on each telephone.

Care should be taken in the development of the Plan to ensure that allocation of dedicated emergency bands is made only to those who will contribute to assisting the Incident Controller.

The Emergency Plan document should include and clearly indicate the telephone numbers for all support services such as Police, Fire Services, Emergency Response teams, Local Armed Forces as well as Manufacturers 24 hour telephone numbers for Hazardous Materials held at the location.

Incident Occurrence

When an alarm is received all *'non essential personnel'* not included in the emergency procedure should immediately evacuate the plant and buildings and proceed preferably to open area and previously designated '*assembly*' points, well clear of the impact of any possible incident. They should remain here until advised by the *'Incident Control Person'* that they may return to their work. This may be achieved by a recognisable '*all-clear'* signal or alarm. During the assembly period supervisors should check staff under their control and ensure that all personnel for which they are responsible are accounted for. This '*assembly*' procedure should cover contractors and visitors.

If missing staff are discovered during the check the *'Incident Controller'* should be informed by the '*Incident Control Person'*. He should then dispatch trained duty staff under his direct control to search for them. It is important that untrained and un-informed staff are kept away from the incident area during search actions.

It is probable that some protective actions will have been initiated at the source of the incident but this will only involve first line action.

It is important that the incident is not allowed to get out of control. Emergency personnel and resources including outside support services should be initiated immediately by alarm from the Emergency Control Centre on receipt of the initial incident alarm and their attendance should not be cancelled until the *'Incident Control Person'* has confirmed with the '*Incident Controller'* that the incident is fully under control and it is safe for personnel to return to work.

Where outside support services of any type are available they should be called immediately even in case of doubt. It is preferable for them to attend to find nothing than arrive too late.

The Incident Controller will have been informed by radio at an early stage by the Incident Control Person, of the incident and he should then proceed to the site of the incident as soon as possible after having donned his distinctive clothing. He should immediately take charge of actions and direct any support services who arrive. He should then remain in contact at all times with the emergency control centre preferably by radio on a dedicated emergency band.

In the event of a protracted incident, seemingly unimportant matters such as Emergency Rations and rest facilities may have to be considered, to provide adequate amenities for personnel involved in the incident itself.

Contingency Planning may prove of great benefit in counteracting the effects of an incident by enabling the location to have adequate plant and apparatus available in position close to the greatest risk areas. It will also enable an orderly and effective return to operation after the incident.

Incident Types

The possibility of occurrence of a number of incident types should be included in the procedure. The list which follows is not exhaustive. It should depend on the location itself deciding content, but the following should be included :-

Fire

In this instance a detailed fire plan should form part of the Emergency Plan and should specify the actions to be taken initially by staff who discover the fire followed by how management require staff to act should a fire emergency occur. The plan would detail how employees, contractors and other visitors should react. For example, how the alarm should be sounded, how the fire pump should be started and how and which vital services should be isolated and by whom. The actions of location fire fighters and outside support services should be described.

The Emergency Plan - Fire section should cover such aspects as:-

a) *Fire prevention*: This aspect of the plan should include those things that are necessary to prevent a fire, such as control of smoking, control of cutting and welding, and education of managers and employees of the need for fire prevention.

b) *Fire Fighting equipment*: The plan should determine the adequacy of existing fire fighting equipment and systems, including pumps, hoses, extinguishers etc. the maintenance of this equipment, and education and training of employees who must use, inspect, and maintain this equipment.

c) *Public Fire fighting assistance*: The plan should seek to develop a good working relationship with the public fire department, learning their needs and expectations, and providing familiarisation with the lay-out of the plant and fire protection equipment that is available to them.

d) *Fire emergency planning*: This aspect of the plan should describe the responsibilities and actions that must be done, especially in the early stages of a fire. This section should address alerting occupants of the building involved as well as senior managers, alerting the public fire department, assisting the plant fire brigade and the public fire department where practicable.

e) *Hazard identification*: This plan should include a program to identify fire hazards on the premises, including those hazards that are unique to the facility.

Natural Perils

The Emergency Plan should include for an incident involving Natural Perils which may occur at the location. It is recommended that the following Perils be considered and included in the plan, where relevant:-

- Earthquake
- Windstorm, Hurricane, Cyclone
- Flooding from river or sea
- Landslide/mudslide
- Rainstorm
- Tsunami
- Temperature
- Snowstorm or Hailstorm
- Lightning and Electric Storm

Release of Hazardous Material

The release of hazardous materials is generally covered by National and International regulations and guidance. Reference should be made to the relevant procedures, standards and codes when preparing the plan based on the materials used at the location.

In the United Kingdom reference should be made to the Health and Safety Executive Regulations and Guidelines. In this instance specific attention is drawn to the '*Health and Safety at Work Act 1974'*, and the new '*COMAH*' Regulations which came into effect on 1st April, 1999 to replace the (CIMAH) 1985 Regulations, and other Health and Safety regulations which appear in the - Health and safety: Regulations Booklets prepared by the Health and Safety Executive.

Security Alert

Security will vary considerably for each location in an international context but some form of access security should be available.

Where necessary the procedure should include for the actions of national and independent support security forces in the event of alert.

Simulation Testing

An annual, generally unannounced, simulation incident should take place to ensure that the systems and procedures in place remain satisfactory and that all personnel are reminded of their actions in the event of an incident.

During these simulation tests observers should be posted at strategic points throughout the location to note how the simulation is proceeding and to provide and recommendations which may improve future incidents.

It is recommended that following the simulation test, a report is prepared, including controllers and observers comments, describing the results of the trial and indicating times taken to achieve certain targets. At this stage improvement recommendations should be presented. These recommendations should not imply criticism, but seek to improve the plan.

Publicity

The press and media in general will apply considerable pressure during a significant incident, particularly if it impacts on local communities. It is preferable to be prepared for the media attention that the incident will receive and to train a senior staff member, designated ***'Communications Officer'*** (or '*Public Relations Officer*') to provide incident information on behalf of the company. The contact telephone number for the Communications officer and his designated deputies should be included in the Plan.

The emergency plan should include for all communications to outside bodies to be directed to the Communications officer. The Incident Controller should be aware that he should refer any relevant information directly to this person.

The Communications officer should be responsible for contacting any outside bodies who may have an interest in monitoring or recording the effects of the incident. These bodies should be included in the plan and contact telephone numbers included.

It may be useful to arrange a room designated the *'Incident Communications Room'* to enable effective media communications at the local hotel or room away from the location. Here regular updates will be provided pointing out the company's concerns and give some indication of actions which are being taken.

The Emergency Plan should clearly state that unauthorised communications, with the media or other outside information agencies, by any other member of staff other than the Communications officer, should not take place.

Panels of Enquiry

It may be necessary to initiate a Panel of Inquiry to evaluate the incident, take notes or even gather photographic evidence before the incident is finally considered completed.

Incident Review and Report

In the event that a committee of Inquiry is considered unnecessary it is advisable to produce a Review Report of the incident to enable an evaluation to be made in retrospect and to see where improvements could be made.

This document should be prepared by management and include the comments and opinions of all members of staff directly involved in the incident.

This report should be made available to the location executive within two weeks to enable actions to be taken to avoid a repeat incident and also allow the Emergency Procedure to be reassessed.